ORGANISATIONAL CITIZENSHIP BEHAVIOUR DRIVEN CAPITAL SYNERGY MODEL FOR GOVERNMENT AIDED HIGHER EDUCATION INSTITUTIONS IN KERALA

Thesis submitted to the

University of Calicut

for the award of the degree of

Doctor of Philosophy in Commerce

Under the Faculty of Commerce and Management Studies

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I hereby declare that the work presented in the thesis entitled **"Organisational Citizenship Behaviour Driven Capital Synergy Model for Government Aided Higher Education Institutions in Kerala"** is based on the original work done by me under the guidance of Dr. Sefiya K. M., Assistant Professor, Department of Commerce, MES Ponnani College, Malappuram, Kerala, and has not been included in any other thesis submitted previously for the award of any degree. The contents of the thesis have undergone a plagiarism check using iThenticate software at C.H.M.K. Library, University of Calicut, and the similarity index was found within the permissible limit. I also declare that the thesis is free from AI-generated content.

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This is to certify that the thesis entitled **"Organisational Citizenship Behaviour Driven Capital Synergy Model for Government Aided Higher Education Institutions in Kerala"** is a record of the bona fide research work done by Ms. Chithra P., Part-time Research Scholar under my supervision and guidance. The thesis is the outcome of her original work and has not formed the basis for the award of any Degree, Diploma, Associateship, Fellowship or any other similar title and is worth submitting for the award of the Degree of Doctor of Philosophy in Commerce under the Faculty of Commerce and Management Studies, University of Calicut. All the relevant corrections and modifications recommended by the Doctoral Committee during the pre-submission seminar have been incorporated in the thesis.

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Abstract

This study examines the role of a Sustainable Human Resource Management (HRM) ecosystem in fostering Organisational Citizenship Behaviour (OCB) and enhancing Institutional Excellence in government-aided higher education institutions in Kerala. The primary objective is to develop and validate an integrated framework linking Sustainable HRM practices to OCB-I (individual-directed) and OCB-O (organisation-directed), and to assess their subsequent impact on institutional outcomes. The study adopts a conceptual and analytical methodology grounded in an extensive review of theoretical and empirical literature. It synthesises key constructs, including the psychosocial workplace milieu (supportive climate, organisational justice, leadership, autonomy, role clarity, and recognition) and employee synergizing dynamics (job satisfaction, commitment, teamwork, and trust in management). The framework is supported by multiple theoretical perspectives, including Stakeholder Theory, Resource-Based View, Social Exchange Theory, Organizational Justice Theory, and the EFQM Excellence Model. The major findings indicate that a well-structured Sustainable HRM ecosystem significantly enhances both OCB-I and OCB-O by fostering a supportive, fair, and empowering work environment. These discretionary behaviours serve as critical mediators, translating HR practices into improved institutional outcomes. Furthermore, Institutional Excellence is conceptualized through two key dimensions, Academic Service Orientation and Pedagogical Innovation, underscoring the importance of both quality service delivery and adaptive teaching practices. The study also identifies a research gap in integrating these constructs into a unified moderated mediation model within Kerala's higher education sector. Overall, the study concludes that Sustainable HRM practices not only strengthen employee engagement and citizenship behaviours but also significantly contribute to long-term institutional performance, innovation, and sustainability.

Keywords: Sustainable HRM Ecosystem, Organisational Citizenship Behaviour (OCB-I & OCB-O), Psychosocial Workplace Milieu, Employee Synergising Dynamics, Institutional Excellence, Academic Service Orientation, Pedagogical Innovation

സംഗ്രഹം

കേരളത്തിലെ സർക്കാർ സഹായമുള്ള ഉയർന്ന വിദ്യാഭ്യാസ സ്ഥാപനങ്ങളിൽ സംഘടനാത്മക പൗരത്വ പെരുമാറ്റം (OCB) വളർത്തുന്നതിനും സ്ഥാപന മികവ് (Institutional Excellence) ഉയർത്തുന്നതിനും സുസ്ഥിര മനുഷ്യ വിഭവ മാനേജ്മെന്റ് (HRM) ഇക്കോസിസ്റ്റത്തിന്റെ പങ്ക് ഈ പഠനം പരിശോധിക്കുന്നു. സുസ്ഥിര മനുഷ്യ വിഭവ മാനേജ്മെന്റ് പ്രാക്ടീസുകൾ OCBI (വ്യക്തിനിഷ്ഠമായ പെരുമാറ്റം) എന്നും OCBO (സ്ഥാപനനിഷ്ഠമായ പെരുമാറ്റം) എന്നും തമ്മിൽ ബന്ധിപ്പിക്കുന്ന ഏകീകൃത ഘടന വികസിപ്പിക്കുകയും അത് സാധൂകരിക്കുകയും ചെയ്യുന്നതാണ് പ്രധാന ലക്ഷ്യം. കൂടാതെ, ഈ ഘടകങ്ങൾ സ്ഥാപന ഫലങ്ങളിലേക്ക് ഉണ്ടാക്കുന്ന സ്വാധീനം വിലയിരുത്തുന്നതും പഠനത്തിന്റെ പ്രധാന ഉദ്ദേശ്യങ്ങളിലൊന്നാണ്. ഈ പഠനം സിദ്ധാന്തപരവും പ്രായോഗികവുമായ സാഹിത്യ അവലോകനത്തെ അടിസ്ഥാനമാക്കിയുള്ള ആശയപരവും വിശകലനാത്മകവുമായ രീതിയാണ് സ്വീകരിക്കുന്നത്. പിന്തുണയുള്ള സംഘടനാ അന്തരീക്ഷം, സംഘടനാത്മക നീതി, നേതൃപാടവം, സ്വയംഭരണം, ജോലി വ്യക്തത, അംഗീകാരം എന്നിവ ഉൾപ്പെടുന്ന മാനസികസാമൂഹിക തൊഴിലിടസാഹചര്യങ്ങളും, തൊഴിൽ തൃപ്തി, പ്രതിബദ്ധത, ടീം വർക്ക്, മാനേജ്മെന്റിനോടുള്ള വിശ്വാസം എന്നിവ ഉൾപ്പെടുന്ന ജീവനക്കാരുടെ സഹകരണ രീതികളും പ്രധാന ഘടകങ്ങളായി ഇതിൽ സംയോജിപ്പിച്ചിരിക്കുന്നു. ഈ ഘടനയെ സ്റ്റേക്ക്ഹോൾഡർ തിയറി, റിസോഴ്സ്ബേസ്ഡ് വ്യൂ, സോഷ്യൽ എക്സ്ചേഞ്ച് തിയറി, ഓർഗനൈസേഷണൽ ജസ്റ്റിസ് തിയറി, EFQM എക്സലൻസ് മോഡൽ എന്നിവ ഉൾപ്പെടുന്ന വിവിധ സിദ്ധാന്തപര സമീപനങ്ങൾ പിന്തുണക്കുന്നു. പ്രധാന കണ്ടെത്തലുകൾ വ്യക്തമാക്കുന്നത്, നന്നായി രൂപകൽപ്പന ചെയ്ത സുസ്ഥിര മനുഷ്യ വിഭവ മാനേജ്മെന്റ് സംവിധാനം ജീവനക്കാർക്ക് പിന്തുണയും നീതിയും നൽകുന്ന ശക്തമായ ജോലിസ്ഥലം സൃഷ്ടിക്കുന്നു എന്നതാണ്. ഇതിലൂടെ OCB-Iയും OCB-Oയും ക്രമാനുസൃതമായി വർദ്ധിക്കുന്നു. കൂടാതെ, ഈ താല്പര്യാർത്ഥം ചെയ്യുന്ന പ്രവർത്തനങ്ങൾ മനുഷ്യ വിഭവ പ്രവർത്തനങ്ങളെ ത്വരിതപ്പെടുത്തി മികച്ച സ്ഥാപന ഫലങ്ങളാക്കുന്നതിൽ പ്രധാന പങ്ക് വഹിക്കുന്നു. കൂടാതെ, സ്ഥാപന മികവ് രണ്ട് പ്രധാന ഘടകങ്ങളിലൂടെ മനസ്സിലാക്കാം: അക്കാദമിക് സേവനത്തിന്റെ ഗുണമേന്മയും പഠനരീതികളിലെ പുതുമയും. ഇവ രണ്ടും ഒരുപോലെ പ്രധാനമാണ്. കേരളത്തിലെ ഉയർന്ന വിദ്യാഭ്യാസ മേഖലയിലെ ഈ ഘടകങ്ങളെ ഒരുമിപ്പിച്ചു ഏകീകൃത മോഡലായി അവതരിപ്പിക്കുന്നതിൽ ഒരു ഗവേഷണ വിടവ് നിലനിൽക്കുന്നതായി ഈ പഠനം കണ്ടെത്തുന്നു. മൊത്തത്തിൽ, ഈ പഠനം വ്യക്തമാക്കുന്നത് സുസ്ഥിര മനുഷ്യ വിഭവ മാനേജ്മെന്റ് പ്രാക്ടീസുകൾ ജീവനക്കാരുടെ പങ്കാളിത്തവും സംഘടനാത്മക പൗരത്വ പെരുമാറ്റവും വർദ്ധിപ്പിക്കുന്നതിനൊപ്പം, ദീർഘകാല സ്ഥാപന പ്രകടനം, നവീകരണം, സുസ്ഥിരത എന്നിവയ്ക്കും വലിയ സംഭാവന നൽകുന്നു എന്നതാണ്.

പ്രധാനപദങ്ങൾ: സുസ്ഥിര മനുഷ്യ വിഭവ മാനേജ്മെന്റ് ഇക്കോസിസ്റ്റം, സംഘടനാത്മക പൗരത്വ പെരുമാറ്റം (OCBI & OCBO), മാനസികസാമൂഹിക ജോലിസ്ഥല അന്തരീക്ഷം, ജീവനക്കാരുടെ സഹകരണ ഗതികൾ, സ്ഥാപന മികവ്, അക്കാദമിക് സേവന ദിശാബോധം, പാഠഭേദഗതി നവീകരണം

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List of Abbreviations

ALT	:	Altruism
ASO	:	Academic Service Orientation
CON	:	Conscientiousness
CRT	:	Courtesy
CVV	:	Civic Virtue
DTL	:	Democratic and Transformational Leadership
HRM	:	Human Resource Management
JAE	:	Job Autonomy and Empowerment
JBC	:	Job Commitment
JBS	:	Job Satisfaction
OCB	:	Organizational Citizenship Behaviour
OCB-I	:	Organizational Citizenship Behaviour -Individual
OCB-O	:	Organizational Citizenship Behaviour -Organizational
OJI	:	Organisational Justice, Inclusiveness, and Equity
PDI	:	Pedagogical Innovation
PWM	:	Psychosocial Workplace Milieu
RCL	:	Role Clarity
RCM	:	Recognition and Motivation
SHRE	:	Sustainable Human Resource management Eco system
SOC	:	Supportive Organisational Climate
SPM	:	Sportsmanship
TAC	:	Teamwork and Cooperation
TIM	:	Trust in Management

PART I

CONCEPTUAL AND EMPIRICAL FOUNDATIONS

Chapter 1: **Theoretical Framework and Conceptual Foundations**

Chapter 2: **Review of Literature**

Chapter 1

THEORETICAL FRAMEWORK AND CONCEPTUAL FOUNDATIONS

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Chapter 1

THEORETICAL FRAMEWORK AND CONCEPTUAL FOUNDATIONS

1.1 Introduction

A sustainable HRM ecosystem is inevitable for fostering a working atmosphere that promotes employee well-being, ethical behaviour, and long-term overcoming of the organisation (Ehnert, 2009; Kramar, 2014). By combining sustainability principles into Human Resource practices, such as fairness and employee growth, organisations promotes an environment that naturally promotes Organisational Citizenship Behaviour (OCB). In this behaviour employees intentionally go beyond their formal roles to help the colleagues and support the organisation (Organ, 1988; Podsakoff et al., 2000).These voluntary behaviours, promoted through sustainable HRM , create trust cooperation and a strong organisational culture, which are fundamental to achieving institutional excellence, characterised by constantly high performance, adaptability and social responsibility (Boyatzis, 2008; Senge, 2006). Therefore, a sustainable HRM Eco system not only improves the engagement of the employees but also shapes the performance supportive climate, providing foundation for OCB and the broader goal of Institutional Excellence. The link between Sustainable HRM, OCB and Institutional Outcomes especially important in higher education institutions, where knowledge based tasks and academic service provision require both strong performance and relational harmony.

1.2 Sustainable Human Resource Management Eco System (SHRE)

A sustainable HRM Ecosystem is dynamic, interconnected system where HR Practices are crafted and implemented to achieve organisational goals while promoting long term wellbeing for employees, the environment, and the society. This ecosystem based approach incorporates social, economic and environmental sustainability in to HRM Practices, aligning` human capital development with the sustainable development goals.

1.2.1 Definitions

- "Sustainable HRM refers to adopting HR tactics and practices that promote the long-term health and survival of the organization, the well-being of its employees, and extensive societal and environmental outcomes." Ehnert, I. (2009)
- Pfeffer, J. (2010) declares that "Sustainable HRM considers employees as crucial organizational stakeholders, whose well-being and growth need to be actively managed to align business success with societal values and environmental responsibility."
- According to Cohen, E., Taylor, S., and Muller-Camen, M. (2012), "Sustainable HRM encompasses HR practices that aim for business sustainability while also addressing environmental and social issues, ensuring that an organization's human capital is developed, retained, and consistently aligned with sustainable development objectives.""
- Ehnert, I., and Harry, W. (2012) describe a sustainable HRM system as "an ecosystem where organizational policies and practices constantly adjust to external environmental, social, and economic shifts, all while preserving internal employee engagement, well-being, and organizational effectiveness."
- Kramar, R. (2014) defined Sustainable HRM "as the intentional or evolving HR strategies and practices designed to help achieve organizational goals while also maintaining the organization's human and social capital."
- As Guerci, M., and Carollo, L. (2016) define, "A sustainable HRM ecosystem promotes ethical and socially responsible HR practices that ensure the conservation and development of human capital, foster employee well-being, and actively contribute to social and ecological sustainability."
- Stahl, G. K., Brewster, C., Collings, D. G., and Hajro, A. (2020) states that Sustainable HRM Eco system is made up of human resource practices that harmonise economic, social and environmental goals.

While analysing the above definitions, it can be recognized that a Sustainable HRM Ecosystem emphasizes that top-level leadership support for professional enhancement is crucial for maintaining organisational success, as leadership commitment fosters employee engagement and career development (Iqbal & Ahmad, 2023; Kramar, 2014). Concurrently, emotional and professional support from colleagues boosts psychological safety, teamwork, and innovation (George et al., 2023; Kumari & Mishra, 2023). Sustainable HRM ecosystems encourage transparency by management, promoting trust and voice behaviour (Han & Kim, 2023; Stahl et al., 2012), and makes sure that employees can act without fear of revenge, protecting psychological security and facilitating creative behaviours (Albrecht et al., 2023; Ehnert, 2009). Justified treatment by the institution, combined with proactive efforts to improve fairness, equality, and inclusion, empowers perceptions of organisational justice (Bui, 2023; Martins et al., 2022; Ng & Feldman, 2023). Respect for diverse staff beliefs and consistent application of institutional policies across employees enculcate a culture of integrity and belonging (De Prins et al., 2014; Su & Lee, 2023).

The promotion of freedom in jobs and trust in staff judgments promotes intrinsic motivation and proactive performance (Ehnert et al., 2016; Van der Vaart et al., 2022), while acceptance of innovation in work and support for independent decision-making empowers staff towards creativity (Alshaikh et al., 2023; Mariappanadar, 2012). Inspirational leadership and employee inclusion in decision-making encourages higher levels of organisational commitment and collaboration (Sharma & Dhar, 2023; Wang et al., 2023). Sustainable HRM practices promote collaboration and advanced changes, motivating employees to participate in organisational development (Pereira et al., 2023). Clearly defined job responsibilities, role expectations, and clear directions for duties ensure role clarity, reducing stress and improving job execution (Chen et al., 2023; Garcia-Carbonell et al., 2023).

Further, awareness of performance evaluation, acknowledgement of positive performance, and fair distribution of recognition are core to fostering a performance-oriented ethical workplace (George et al., 2023; Li & Bamberger, 2022). Encouraging motivation for higher performance, recognition of contributions, and ensuring fair

recognition sustain employee morale and loyalty (Garcia-Carbonell et al., 2023; Ng & Feldman, 2023). Sustainable HRM also focuses on satisfaction with present role, personal fulfilment in roles, and enjoyment of the essence of the job, which promote emotional engagement and well-being (Stahl et al., 2012; Su & Lee, 2023). A pleasant working environment nurtures employee resilience and greater dedication to the institution, driving a willingness to work beyond regular duties and instilling loyalty (Martins et al., 2022; Pereira et al., 2023).

Linking professional growth with the institution's development agrees employee and organisational goals (Siddiqui et al., 2023; De Prins et al., 2014). Sustainable HRM thus strengthens effective collaboration with colleagues, promotes teamwork, cooperative work, and fosters a spirit of supporting each other to achieve collective objectives (George et al., 2023; Kumari & Mishra, 2023). Confidence in management, driven by transparency and honesty, create a strong relational contract (Ehnert, 2009; Han & Kim, 2023). Moreover, leaders who protect employees' interests and demonstrate integrity ensure that ethical HRM practices are sustained (Albrecht et al., 2023; Martins et al., 2022). Overall, a Sustainable HRM Ecosystem unites leadership empowerment, fairness, innovation, trust, collaboration, recognition, and well-being, creating a resilient workforce able of driving long-term organisational performance.

In India, S-HRM is increasingly applicable due to challenges such as talent retention, skill development, diversity, inclusivity, and corporate social responsibility, alongside the need for maintaining competitive advantage in dynamic markets (Sharma & Sharma, 2020; Iqbal & Ahmad, 2023). A Sustainable HRM Ecosystem typically encompasses a multidimensional strategy including psychosocial workplace milieu (supportive organisational climate, organisational justice, job autonomy and empowerment, democratic and transformational leadership, role clarity, and recognition & motivation) and employee synergizing dynamics (job satisfaction, job commitment, teamwork, and trust in management) (Chhabra & Sharma, 2014; Ghosh et al., 2018). Empirical evidence from Indian Organisation indicates that HRM practices emphasising fairness, participation, empowerment and employee

engagement have a positive impact on OCB. This in turn boosts innovation, productivity and sustainable organisational outcomes (Gupta & Kumar, 2022; Pillai et al., 2018).

Strategically implemented S-HRM practices in India, such as structured training ventures, leadership development, recognition systems, and employee empowerment, have been shown to boost motivation, collaboration, and discretionary effort, which are inevitable for sustaining competitive advantage and ethical corporate governance (Iqbal & Ahmad, 2023; Singh & Kaur, 2019). Moreover, incorporating sustainability rules like inclusivity, social responsibility, and environmental awareness helps align HRM practices with the triple bottom line goals, enhancing economic, social, and environmental outcomes (Al-Tarawneh et al., 2022; Sharma & Sharma, 2020). Overall, the Sustainable HRM Ecosystem in the Indian context shows a holistic approach to managing human resources that fosters long-term organisational resilience, ethical culture, and high-performance work systems (Ghosh et al., 2018; Reddy & Rao, 2021)

Based on the previous conceptual analysis of sustainable HRM practices, numerous interconnected subthemes emerge, reflecting the foundational dimensions necessitated to build a Sustainable HRM Ecosystem. Firstly, a supportive organisational climate was recognized, characterized by top level leadership commitment and collegial emotional support that foster employees' psychological safety, professional growth, and engagement (Ehnert, 2009; George et al., 2023; Iqbal & Ahmad, 2023). A climate that promotes open communication and allows action without fear of revenge enhances trust and innovation within the organization (Albrecht et al., 2023; Han & Kim, 2023).

Secondly, organisational justice, inclusiveness, and equity are identified as important factors, where institutions need to ensure fairness, diversity, and inclusion, as well as equity in policy implementation to enhance a sense of belonging among employees (Bui, 2023; Martins et al., 2022; Ng & Feldman, 2023).This aligns with ROC model proposed by De Prins et al. (2014) which aims to promote sustainable HRM through respect and continuity.

Thirdly, Job autonomy and empowerment are seen as key drivers of innovation and engagement involving freedom in roles, trust ion staff decisions and support for independent choices (Alshaikh et al., 2023; Mariappanadar, 2012; Van der Vaart et al., 2022;). These concepts align with resource based views emphasising empowerment as essential for sustainable competitive advantage (Kramar, 2014).

Fourthly, democratic and transformational leadership practices were established where leaders who inspire, motivate and engage employees in decision making drive collaboration and readiness for change (Sharma & Dhar, 2023; Stahl et al., 2012; Wang et al., 2023).

Fifthly, Role clarity was emphasised as essential for decreasing role ambiguity and improving job satisfaction. This was accomplished through clear role definitions, expectations and duty guidelines (Chen et al., 2023; Garcia-Carbonell et al., 2023), aligning with Herzberg's hygiene factors associated with motivation.

Sixthly, the importance of recognition and motivation was highlighted, stressing the need for awareness of performance evaluation, appreciation of contribution and fair distribution of recognition to promote employee performance and loyalty (Garcia-Carbonell et al., 2023; George et al., 2023; Li & Bamberger, 2022).

Seventhly, Job satisfaction was identified as the fundamental outcome of sustainable HRM, with employees satisfaction with their roles and responsibilities, personal fulfilment and the enjoyment of their work environment serving as a crucial factors influencing the emotional wellbeing and engagement (Pereira et al., 2023; Su & Lee, 2023; Stahl et al., 2012).

The findings highlighted that job commitment is driven by employees professional growth connected to the organisations success, fostering dedication beyond usual responsibilities and loyalty to the organisations (Ehnert et al., 2016; Siddiqui et al., 2023).

Ninethly, Teamwork and cooperation were acknowledged as vital components with institution advocating for effective collaboration, collective efforts and mutual

support to enhance team oriented organisation culture (George et al., 2023; Kumari & Mishra, 2023).

Ultimately, Trust or confidence in leadership regarded as a basic component of sustainable HRM. It incorporates confidence in leadership, transparency, and protecting employees interest, which when combined with demonstrated integrity, cultivate a resilient and committed working community (Albrecht et al., 2023; Han & Kim, 2023; Martins et al., 2022).The subthemes collectively establish the basis for comprehending how sustainable HRM Practices underpin enduring employee wellbeing and organisational achievement.

Drawing on the previous conceptual analysis, two major streams emerges that underpin a sustainable HRM Eco system, the psychosocial Workplace milieu and Employee Synergizing Dynamic.

The first stream, Psycho-social Workplace Milieu, encompasses the structural and emotional conditions necessary for employee flourishing. It involves creating a supportive organisational climate, where leadership support and collegial emotional support improves psychological safety and professional development (Ehnert, 2009; George et al., 2023; Iqbal & Ahmad, 2023). Organisational justice, inclusiveness, and equity reinforce this milieu by ensuring that fair treatment, diversity, and equality practices are connected into everyday organisational functioning (Bui, 2023; Martins et al., 2022; Ng & Feldman, 2023). The ROC model of sustainable HRM (De Prins et al., 2014) underlines the duty of respect and continuity in fostering inclusive work environments. Additionally, job autonomy and empowerment characterized by trust in employee decisions and the freedom to innovate, are essential for intrinsic motivation and proactive behaviour (Alshaikh et al., 2023; Mariappanadar, 2012; Van der Vaart et al., 2022). The democratic and transformational leadership style, which inspires and includes employees in decision making and fosters progressive changes and reinforces the sense of belonging and purpose of employees (Sharma & Dhar, 2023; Stahl et al., 2012; Wang et al., 2023). Role clarity, achieved through well defined responsibilities and explicit performance expectations, minimises role ambiguity and enhances work engagement (Chen et al., 2023; Garcia-Carbonell et al., 2023).

Finally, recognition and motivation, through fair recognition of contributions and transparent performance evaluations, reinforce employee effort and long term organisational loyalty (George et al., 2023; Li & Bamberger, 2022). These psycho social constructs mould the internal working environment and influence Organisational Citizenship Behaviour and other behavioural results.

The second branch of this stream is the Employee Synergizing Dynamics, which examines the ways in which sustainable HRM practices lead employees' emotions, attitudes, and behaviors to converge with the organisational objectives. Job satisfaction, as a result of personal fulfillment, the enjoyment of the nature of work, and positive work experiences, is a key outcome of successful HRM practices (Pereira et al., 2023; Su & Lee, 2023; Stahl et al., 2012). At the same time, job commitment, where employees connect their personal development with the institution's achievement and express loyalty beyond their official obligations, is a key indicator of sustainable employee engagement in the workplace (Ehnert et al., 2016; Siddiqui et al., 2023). Finally, teamwork and cooperation among employees, as a result of the cultivation of collaboration, supportiveness, and cooperative behaviors among them, is a key factor in building organisational sustainability through teamwork and cooperative successes in the workplace (George et al., 2023; Kumari & Mishra, 2023). Underpinning all these synergizing dynamics is the employees' trust in management; the employees' assurance of the transparency, honesty, and dedication of the management towards their interests is the foundation of the relational bonds that strengthen their organisational attachment (Albrecht et al., 2023; Han & Kim, 2023; Martins et al., 2022).

Thus, sustainable HRM practices that develops an enabling psychosocial workplace milieu and catalyse employee synergizing dynamics are crucial to achieving organisational resilience, leadership based on ethical grounds, and long-term human capital sustainability. Together, both streams operationalize how the Sustainable HRM ecosystem drives employee behaviour and institutional outcomes.

1.3 Organisational Citizenship Behaviour

Organisational Citizenship Behaviour (OCB) is foundational in organisational behaviour and human resource management literature. At first this concept is introduced by Organ (1988), OCB refers to voluntary Character performed by employees that go beyond formal role expectations to support the organisation's social and psychological environment. These behavior patterns are essential for enhancing organisational effectiveness, even though they are not explicitly acknowledged by formal reward systems (Organ, 1988; Organ et al., 2006). Over the years, OCB has developed into various dimensions such as altruism, conscientiousness, civic virtue, courtesy, and sportsmanship, each playing a distinct role in shaping organisational outcomes (Podsakoff et al., 2000). Recent studies indicates that organisational citizenship behaviour is influenced by leadership styles, organisational justice, job satisfaction, and sustainable HRM practices (Chiaburu & Harrison, 2008; Jena & Pradhan, 2018; Rai & Maheshwari, 2022). In sustainable HRM environments, OCB incorporate the result of effective psychosocial climates and employee synergy, which lead to better collaboration, trust, and organisational resilience.

1.3.1 Definitions

- Organ, D. W. (1988) describes Organizational Citizenship Behaviour as "voluntary actions not formally acknowledged by the reward system but that collectively support the organization's effective operation."
- According to Podsakoff et al. (2000), "Behaviours that support the social and psychological environment in which task performance takes place."
- OCB is described as "a contribution to maintaining and improving the social and psychological environment that helps task performance within an organization." Organ et al. (2006).
- "OCB includes voluntary actions that enhance organizational effectiveness but are not officially required as part of one's job". Chiaburu and Harrison (2008).

- In the Indian context, Jena and Pradhan (2018) describe OCB as "the informal behaviours employees engage in to maintain organizational functioning, often emerging from affective commitment and trust in leadership."
- OCB is defined as "employees' discretionary commitment towards organizational goals, demonstrated through altruism, conscientiousness, and civic virtue, independent of formal role requirements." Rai and Maheshwari (2022).

1.3.2 Dimensions of OCB

Organisational Citizenship Behaviour (OCB) was first proposed in the year 1988 by Organ as a concept of employees behaving in a manner that is beyond their official job description but is indirectly beneficial to the organization. However, it was later understood that OCB is not a homogeneous concept and can be classified depending on the target of the behaviour. Williams and Anderson in their work published in the year 1991 were among the first scholars who proposed a two-dimensional framework of OCB as behaviour directed towards individuals (OCB-I) and behaviour directed towards the organization (OCB-O). This is in line with social exchange theory proposed by Blau in the year 1964, which suggests that employees return support from the organization or fellow employees with prosocial or OCB directed towards individuals or the organization.

OCB-I encompasses behaviours aimed at helping individual members within the organization, thereby facilitating smooth interpersonal relations. Two primary dimensions associated with OCB-I are Altruism and Courtesy.

Altruism is defined as discretionary behaviours guided toward helping specific others with work-related problems or tasks (Organ, 1988; Podsakoff et al., 2000). Altruistic behaviours, such as voluntarily assisting a colleague with tasks, stem from norms of reciprocity and mutual aid embedded within social exchange processes (Chiaburu & Harrison, 2008).

Politness includes actions aimed at avoiding work-related conflicts by being mindful of how one's behaviour affects others and by communicating in advance.

(Organ et al., 2006).Courtesy demonstrate an anticipatory attitude in social interactions, aimed at maintaining harmony and reducing relational tension. (Han & Kim, 2023).

Conversely, OCB -O pertains to actions that benefit the organisation's overall rather than individual members. These behavious are believed to improve the organisational climate and support systematic stability. The main dimensions of OCB-O include Civic Virtue, Sportsmanship and Consciousness.

Civic Virtue involves engaging responsibly in the organisation's governance and activities, such as attending meetings and staying up to date on organisational issues (Podsakoff et al., 2000). Civic virtue is understood to represent employee's dedication to organisational citizenship in a wider political context which aligns with their loyalty to the organisation (Buil et al., 2019).

Sportsmanship includes maintaining a positive attitude even in difficult situations, which means individual should refrain from complaining about minor problems (Organ, 1988). Theoretically, the lessens psychological stress on organisations, thereby boosting morale as explained by the conservation resource theory (Hobfoll, 1989).

Conscientiousness involves employees voluntary obedience with organisational rules, regulations, and performance standards, which go beyond the bare minimum (Organ et al., 2006). Theoretically, conscientiousness entails a sense of personal responsibility, that improve overall organisational efficiency (Li & Bamberger, 2022).

Moving to Indian perspective, OCB-I encompasses behavious that support fellow employees, fostering cooperation, mutual respect and a positive working climate. Key dimensions include Altruism, defined as a voluntary assistance offered to the colleagues in completing tasks or solving problems, and courtesy, which involve respectful, considerate interactions that prevent potential conflicts and maintain harmonious relationships (Organ, 1997). In Indian organisational environment, where collectivist values emphasise relational harmony and group cohesion, OCB-I is

important for improving trust, collaboration and team productivity (Chhabra & Sharma, 2014; Pillai et al., 2018) Research in Indian companies indicates that supportive HR initatives, including recognition, participative decision making and empowering employees, boost altruistic and courteous behaviour among staff (Gosh et al., 2018; Singh & Kaur, 2019).

OCB-O in contrast, includes behaviours that enhance an organisational overall performance, thereby boosting its reputation and excellence. Mainly it include three dimensions: Civic virtue which involves responsible involvement in governance and policy activities, Sportsmanship as the tolerance for minor inconveniences and refraining from complaints and Consciousness means maintaining high standards of diligence, rule following and reliability beyond expectations. According to Podsacoff et al. (2000) and Organ (1997). In India, employees displaying OCB-O behaviours contribute to strengthening resilience, fostering innovation, and upholding ethics, which are crucial for organisations focused on sustainability and knowledge based performance, as noted by Pillai et al. (2018) and Gupta and Kumar (2022). Research indicates that aligning practices with Sustainable HRM Eco system principles enhances employees civic virtue, Consciousness and sportsmanship there by improving overall organisational performance and excellance as documented by Chhbra and Sharma (2014) and Reddy and Rao (2021).

Thus OCB-I and OCB-O operate as complementary mechanisms ie Individual oriented citizenship fosters social capital and cooperative relationships, while Organisational oriented citizenship enhances institutional functioning, sustainability and competitive advantage. Both dimensions are particularly salient in Indian organisations due to cultural emphasis on relational interdependence, social harmony and longterm commitment, making them integral to achieving organisational excellence (Gosh et al., 2018; Singh & Kaur, 2019).

The empirical literature further validates that branching. Chiaburu and Harrison (2008) showed that OCB-I is strongly associated with coworker satisfaction and team effectiveness. OCB-O is more closely linked with organisational loyalty, productivity and broader systematic outcomes. Similarly Jena and Pradhan (2018)

empirically demonstrated that trust and affective commitment predict OCB-I behaviours like altruism and courtesy. Conversely, organisational identification forecasts OCB-O behaviours like civic virtue and consciousness. There for OCB acts as a behavioural link connecting HRM practices with institutional outcomes.

1.4 Institutional Excellence

Institutional excellence has gained considerable importance in the context of organisational development, public administration and education, especially in the context of global competitiveness, stakeholder responsibility and sustainability. It is based on quality management and performance approaches, and it has been defined as the ability of an institution to produce high standards of outcomes in academic, administrative, operational and social areas of institution (EFQM, 2012; Tarawneh et al., 2022). It can be described as a multidimensional concept, which includes effective leadership, process efficiency, innovation, engagement with stakeholders and continuous improvement. Excellence as a concept, does not only focus on high performance in specific domain but also attempts to create an environment where such high performance can be maintained and where the challenges and needs of external environment can also be taken care of. Excellence as a concept, has gained considerable importance in the context of public sector organisations and education, where success can be measured in terms of financial efficiency, reputation, innovation and sustainability.

1.4.1 Definitions

- Institutional excellence is "achieving outstanding results that meet or exceed the expectations of all stakeholders through effective strategy, people, partnerships, and processes." European Foundation for Quality Management (EFQM). (2012).
- Al-Hosani, A. A., & Sofian, S. (2015) define "Institutional excellence is the systematic pursuit of superior organizational performance, innovation, and customer satisfaction based on defined excellence frameworks and performance criteria."

- "Institutional excellence is the strategic integration of quality assurance mechanisms, innovation, and value creation to achieve competitive advantage and institutional reputation," defines Sarma, M., and Nayak, S. (2020).
- In the words of Prasad, V., and Tata, S. V. (2021), "Institutional excellence involves delivering academic, administrative, and research quality aligned with national and global benchmarks through transparency, accountability, and stakeholder involvement."
- Al-Tarawneh et al. (2022) define Institutional excellence as "the achievement of sustainable high performance across financial, social, and operational dimensions through innovation, employee involvement, and continuous learning."
- Institutional excellence is "an ongoing commitment to transformative leadership, innovation, and responsiveness to stakeholder expectations that results in sustainable and measurable outcomes." Srivastava and Bedi (2023).
- "Institutional excellence is defined by the extent to which organizations institutionalize a culture of innovation, employee empowerment, ethical leadership, and digital transformation to meet evolving stakeholder needs," according to by Al-Ghazali and Agha (2024).

Institutional excellence is a multidimensional concept, and it is generally agreed upon that it is the ability of an organization to sustain superior performance, adapt to change, and satisfy the constantly evolving expectations of the organization's stakeholders. It is not only about the organization's operational efficiency and academic performance but also involves the integration of strategic leadership, satisfaction of stakeholders, innovation, and continuous improvement in all functional domains. In the context of quality management, excellence is the ability to align the goals and objectives of the organization with the expectations of the customers, including the learners and stakeholders, using the help of performance measurements and feedback mechanisms, and benchmarking to achieve the desired

improvements in the systems and processes. In the context of higher education, it is also the ability to inculcate values such as transparency, academic integrity, responsiveness, and social responsibility, and it is a philosophy and a performance outcome. The most popular and widely used excellence model is the European Foundation for Quality Management Model, which considers leadership, people, processes, and partnerships as the drivers of sustainable excellence in institutions. Other such popular models include the Balanced Scorecard and the Total Quality Management Model, which help institutions achieve excellence in operational performance. However, recent perspectives has also related institutional excellence to innovation, digital transformation and sustainability and it is now seen as a dynamic concept in the context of globalisation and digital revolution. Therefore, it is not static concept but a continuous journey, and it is marked by the ability to adapt, innovative and sustain a strategic focus and quality culture.

An organisation's sustained ability to deliver superior outcomes and adapt to change, and meet the evolving expectations of its stakeholders. It encompasses more than operational efficiency or academic performance which integrates strategic leadership, stakeholders satisfaction, innovation and continuous improvement across all functional domains (EFQM, 2012; Spendlove, 2007) From a quality management perspective, excellence involve aligning institutional goals with customer(learner and stakeholder)expectations, using performance metrics, feedback loops and benchmarking to foster systematic improvement (Al-Hosani & Sofian, 2015; Oakland, 2003). In higher education, institutional excellence also incorporates values such as transparency, academic integrity, responsiveness and social responsibility making it both a performance outcome and a guiding philosophy (Prasad & Tata, 2021). The European Foundation for Quality Management model, a widely adopted excellence framework, emphasizes leadership, people, processes, and partnerships as drivers of sustainable excellence (EFQM, 2012). Likewise, frameworks such as the Balanced Scorecard and Total Quality Management provide operational tools for achieving excellence through data-driven planning and stakeholder-centered approaches (Sarma & Nayak, 2020). Recent perspectives also link institutional excellence with innovation, digital transformation, and sustainability, reflecting its evolving nature

amid globalization and technological disruption (Al-Tarawneh et al., 2022; Al-Ghazali & Agha, 2024). Thus, institutional excellence is not a fixed state but a continuous journey marked by adaptability, strategic focus, and a culture of quality and accountability.

In the Indian context, institutional excellence is especially relevant for organisations operating in a fast changing and competitive environments, such as higher education, public sector organisations, and knowledge-driven industries, where societal expectations, regulatory frameworks, and stakeholder pressures are increasingly complex (Prasad & Tata, 2021; Rani & Saini, 2020).

The concept of institutional excellence encompasses multiple dimensions, including academic service orientation, which give importance to quality, relevance, and accessibility of services to stakeholders, and pedagogical innovation, which means to continuous improvement in teaching, learning, and knowledge sharing processes (Choudhury & Dey, 2020; Sharma & Singh, 2018). Attaining excellence requires strategic leadership, participative decision making, sustainable human resource practices, and a performance driven culture that aligns institutional goals with stakeholder needs (Al-Tarawneh et al., 2022).

In India, studies have displays that institutions having effective governance, transparent processes, and employee engagement, particularly through Organisational Citizenship Behaviour (OCB) and Sustainable HRM Ecosystems, are better able to attain institutional excellence (Gupta & Kumar, 2022; Reddy & Rao, 2021). Moreover, models such as EFQM and TBL (Triple Bottom Line) have been effectively implemented in Indian institutions to guide performance evaluation, quality assurance, and sustainable development, focusing on accountability, continuous improvement, and stakeholder value creation (Prasad & Tata, 2021; Al-Tarawneh et al., 2022).

Thus, Institutional excellence in India represents not only operational and academic superiority but also a culturally and socially embedded process that balances performance, ethics and sustainability. it reflects the ability of institutions

to innovate, adapt and maintain stakeholders trust in a rapidly evolving socio economic and regulatory landscape.

In higher education institutions, especially in India and Kerala academic landscape, institutional excellence can be meaningfully conceptualised through two interrelated categories as Academic Service orientation and Pedagogical Innovation. This reflect the delivery of quality academic outcomes and transformation of teaching and learning process to meet contemporary educational demands.

Academic Service Orientation refers to the institution's commitment to quality assurance in teaching, learning, research and administrative services aligned with national and global bench marks. This perspective emphasis stakeholder satisfaction, institutional accountability and performance measurement systems. Definitions such as those proposed by Prasad and Tata (2021), who describe institutional excellence as delivering "academic, administrative and research quality aligned with national and global benchmarks" underscore this category. Similarly, Al-Hosani and Sofian (2015) frame excellence through balanced scorecard and quality metrics, focusing on sustained high performance and responsiveness to stakeholders expectations in educational setting. These approached align with Total Quality Management (TQM) and EFQM frameworks which stress student satisfaction, accreditation readiness, transparency and value added services in academia (EFQM, 2012; Sarma & Nayak, 2020). In Kerala's context, the NAAC accreditation framework, Institutional ranking systems and emphasis on public accountability reinforce this academic service dimension of excellence.

On the other hand, Pedagogical Innovation reflects the ability of the institution to revise, redesign and rethink teaching methodologies, to integrate the technology, to promote learner autonomy and encourage faculty innovation. This aligns with the definitions of institutional excellence that emphasis innovation and learning capabilities. For instance, Al-Tarawneh et al. (2022) define excellence as "sustainable high performance through innovation, employee involvement and continuous learning", while Al-Ghazali and Agha (2024) emphasis a culture of digital transformation, ethical leadership and innovation as pillars of institutional

success. These excellence is not static but continuously evolving in response to pedagogical and technological shifts (Srivastava & Redi, 2023). In the Kerala context, pedagogical innovation is evident in the growing adoption of blended learning, MOOCs, digital learning management systems (LMS) and Outcome based education (OBE) reforms in affiliated universities and autonomous colleges. Together, Academic service orientation ensures that the institution delivers on its core mission of educational service excellence. In contrast, pedagogical innovation ensures that it remains adaptive, future ready and responsive to changing learner and societal needs. Both are essential for achieving institutional excellence in higher education institutions, particularly in a region like Kerala, striving for global competitiveness while retaining its strong public education values.

1.5 Theoretical Support/Underpinning Theories

This study relies on a multi theoretical foundation to explore how Sustainable HRM Ecosystem impacts Organisational Citizenship Behaviour (OCB-I and OCB-O), thereby advancing Institutional Excellence in government-supported higher education institutions in Kerala. Given its focus on multiple levels, such as individual (faculty attitudes and behaviours), organisational (HRM practices, climate, leadership), and institutional (excellence, service orientation, pedagogical innovation), no single theory can fully explain its complexity. Instead, it employs an integrated framework that incorporates Stakeholder Theory, Sustainable Work Systems Theory, Resource Based View (RBV), Social Exchange Theory, Norm of Reciprocity, Organisational Justice Theory, Triple Bottom Line (TBL), Dynamic Capabilities Theory, Total Quality Management (TQM), and the EFQM Excellence Model.

These theories collectively offer complementary insights. Stakeholder Theory, Tripple Bottom Line, and Sustainable Work Systems Theory emphasize sustainability, employee well being, and multi stakeholder value in HRM; Resource Based View and Dynamic Capabilities highlight how human capital, Organisational Citizenship Behaviour, and innovation serve as strategic resources for competitive advantage. Social Exchange Theory, Norm of Reciprocity, and Organisational Justice states how fair, supportive HR practices foster OCB-I and OCB-O .Total Quality Management

along with EFQM Excellence Model provide clear frameworks **in** linking people, processes, and culture to measurable Institutional Excellence. Together, these foundations underpin the proposed moderated mediation model that connects the Sustainable HRM Ecosystem, OCB-I & OCB-O, Institutional Quality Orientation, and Institutional Excellence within higher education.

1.5.1 Freeman's Stakeholder theory (1984)

Stakeholder Theory was first proposed by R. Edward Freeman in 1984 through his seminal work "Strategic Management: A Stakeholder Approach." The theory redefines the organisation's purpose from solely profit driven to one that creates value for all stakeholders who can affect or are affected by the organisation's objectives. The prime concept of Stakeholder Theory is that organisations should be managed to consider the interests of stakeholders which includes employees, customers, suppliers, investors, communities, and even the environment, rather than focusing exclusively on shareholders (Freeman, 1984). The theory emphasises ethical business practices, corporate responsibility, and long-term sustainability. It integrates normative, descriptive, and instrumental perspectives to explain why and how organisations should address stakeholder concerns and needs (Donaldson & Preston, 1995). In modern applications, the theory has evolved to include dynamic stakeholder relationships, stakeholder salience (Mitchell et al., 1997), and stakeholder engagement frameworks, which are especially relevant in public institutions and nonprofits.

In a Sustainable HRM ecosystem, Stakeholder theory believes that HR practices that are cantered around the well being, diversity, equity, and inclusion of employees, which recognises them as important stakeholders. Such an approach enables the integration of ethical and sustainable principles into HR strategies, which are in line with the interests of employees. Research suggests that a stakeholder centric HRM strategy enhances trust, psychological safety, and respect among employees, which are critical drivers of Organisational Citizenship Behaviour (OCB) (Kramar, 2014; Ehnert et al., 2016). Moreover, embracing a stakeholder centric HRM strategy improves the legitimacy of an organisation, which results in

Institutional Excellence, particularly in higher learning institutions where various stakeholder groups are involved, including students, faculty, external bodies, and society at large. The emphasis of accreditation criteria and sustainability rankings, which highlights stakeholder engagement as a performance criterion, is also in line with this perspective.

1.5.2 Sustainable Work Systems Theory (2002)

Sustainable Work Systems (SWS) theory emerged from the work of Docherty, Forslin and Shani (2002) and was later applied to human resource management by Ehnert(2009). This theory explains how organisations can maintain both business effectiveness and human sustainability over the long term by developing work systems that balance economic performance with employee health and development.

SWS theory promotes the creation of workplaces that avoid the overuse of human resources while fostering resilience, learning, well being and long term employability. It tests conventional HRM practices that prioritise short term efficiency over employee welfare. Instead, SWS promotes sustainable performance by creating environments that support work life balance, psychological safety, equitable job design and participative management (Docherty et al., 2002; Ehnert, 2009). These practices create the foundation for strategic and ethical HRM systems that can adapt to environmental and social pressures without degrading human potential.

Within a sustainable HRM Ecosystem, SWS theory serves as a base for designing employee oriented HR practices that are not only ethically sound but also enhancing the performance. By fostering human energy and supporting employee's growth and meaningful contributions, organisations promote Organisational Citizenship Behaviour (OCB) like Altruism, consciousness and civic virtue. These behaviours enhance institutional adaptability and innovation, which are essential components of institutional excellence. Studies including those by Ehnert et al. (2016), explain that HR systems aligned with sustainability principles improve employee outcomes and institutional resilience across sectors such as education, health care and manufacturing.

1.5.3 Resource-Based View (RBV) theory (1991)

The Resource Based View (RBV) is introduced by Jay Barney in 1991 in his article "Firm resources and sustained competitive advantage. This article suggests that an organisations internal resources , both tangiable and intangiable are crucial for gaining and maintaining a competitive edge, provided they are valuable ,rare, inimitable and non substitutable (VRIN). RBV shift the importance from external market factors to internal capabilities and resource utilisations. It emphasises the importance of identifying and developing the core competencies, such as human capital, organisational culture, intellectual property and employee relationships, that can generate ongoing value. When effectively managed and nurtured, human resource become a strategic asset that can greatly enhance organisational performance (Wright et al., 2001). Ultimately sustained success depends not only on having these resources but also on organising then effectively.

In Sustainable HRM Eco system, RBV theory supports investing in strategic HR practices such as employee training, performance management, empowerment and retention. Developing employees in to skilled, motivated and committed team members leads to higher Organisational Citizenship Behaviour (OCB)especially in the areas such as consciousness, civic virtue and helping hebaviour. These behaviours helps to foster institutional excellence by creating a productive, innovative and reputation enhancing organisational climate. Studies (Iqbal & Ahmad, 2023; Ling & Jaw, 2011) shows that strategic human capital development enhance innovation , adaptability and sustainable performance in organisational level. Therefore RBV highlights that human resource systems are more than just administrative tasks, they are crucial for sustaining continuous institutional competitiveness, especially in knowledge driven sectors such as higher education.

1.5.4 Social Exchange Theory (SET) (1964)

Social Exchange Theory (SET), is developed by famous sociologist George C Homans in 1958 and later explained by Peter Blau in 1964. This theory offers a core framework for understanding interpersonal and organisational relationships through the reciprocal exchange of tangible resources. SET suggests that individual form

relationships where perceived benefits outweigh costs, emphasising reciprocity and mutual trust. In workplaces when employees receive support, recognition, fairness or developmental opportunities, they often feel a moral and psychological obligation to reciprocate with positive behaviours, such as Organisational Citizenship behaviours (OCB), which go beyond formal duties. This theory highlights that long term employee engagement with organisation is influenced by relational, not just transactional exchanges (Cropanzano & Mitchell, 2005).SET is particularly relevant to both OCB-I and OCB-O. Employees who realise organisational care through sustainable HRM practices are more likely to exhibit helpful, cooperative and loyal behaviours there by showing high level of OCB. This discretionary efforts contribute to Institutional excellence by fostering a positive high performing organisational culture. Williams and Anderson (1991) demonstrated that perceived organisational support predicts OCB-I and OCB-O. Recent research (Han et al., 2023; Yadav & Rangnekar, 2015) confirms that social exchange process significantly influence employee engagement and citizenship behaviours, particularly knowledge intensive institutions such as universities.

1.5.5 Norm of Reciprocity (1960)

The Norm of Reciprocity, first proposed by Gouldner in 1960, is a key sociological idea suggesting that people feel morally obliged to return favours or kind treatment they receive. This concept is important for understanding how relationships work both in personal life and within organisation. In the workplace, when the employees get support, recognition and fair treatment from their organisation, they are more likely to reciprocate with positive actions like Organisational Citizenship Behaviour (OCB). The norm of reciprocity emphasis OCB-I, which includes voluntary actions such as helping others and showing courtesy to prevent issues. When employees notices that their organisation as supportive and appreciative, they often go beyond their formal duties and to help coworkers and improve team cohesion. For example, an employee who is acknowledged or supported might respond by assisting colleagues, offering guidance or proactively solving work problems. Studies support the link between supportive environment and OCB-I. For instance Chiaburu and Harrison (2008) found that fairness, respect

and peer support foster helping behaviour that benefit colleagues. Similarly Li and Bamberger (2022) showed that recognised employees are more likely to engage in voluntary helping as a form of reciprocation. These researches emphasises the importance of reciprocity in fostering OCB-I, there by creating a collaborative, high performing organisational culture. Incorporating fairness, support and recognition in to Sustainable HRM practices can boost behaviours, leading to better organisational performance and overall excellence.

1.5.6 Organizational Justice Theory (1987)

The Organisational Justice Theory, proposed by Greenberg in 1987, it emphasises how the employee's perception of fairness influence their attitudes, engagement and behaviours. It outlines three core elements of organisational justice as distributive justice (fairness in distribution of outcome), procedural justice (fairness in decision making process) and interactional justice (fairness in interpersonal treatment). When the employees felt the fairness of these aspects, they will be more likely to exhibit Organisational Citizenship Behaviour directed at the organisation (OCB-O), including Civic virtue, Conscientiousness and sportsmanship, all of which support organisational excellence. Adopting fair Human Resource Practices (HRM) such as transparent performance appraisals, equitable resource distribution and respectful communication is crucial as these actions boost employee commitment and reflects the principles of organisational justice. Researches shows that perceived fairness strongly predicts citizenship behaviours, highlighting the important role of justice in creating a positive organisational climate.

1.5.7 Triple Bottom Line (TBL) Theory (1997)

Triple Bottom Line (TBL) theory, introduced by Elkington in 1997, broadens traditional performance metrics to include economic, social and environmental factors alongside financial results. It encourages organisations to focus on long term sustainability, ethical governance and social responsibility, ensuring success which benefits shareholders, employees, communities and the environment. In higher education, TBL aligns with Institutional Excellence and a Sustainable HRM Eco system, highlighting inclusive growth, fair treatment of staff, ethical leadership and

socially responsible practices. Applying TBL helps to create Organisational Citizenship Behaviour (OCB) as employees are more likely to act voluntarily when they see their institution as socially responsible and ethically sound. Studies such as Al Tarawneh et al. (2022), shows that TBL adoption boosts institutional innovation, stakeholders engagement and overall performance. This TBL provdes a valuable framework for understanding how sustainable and ethical practices support human resource development, encourage discretionary employee actions and promote institutional excellence.

1.5.8 Dynamic Capabilities Theory (1997)

In a Sustainable HRM environment, Stakeholder Theory suggests that HRM practices should focus on the well-being, diversity, and inclusion of employees, which recognizes them as important stakeholders. This is because this approach allows for the integration of ethical and sustainable principles within HRM strategies, which is consistent with the interests of employees. Research suggests that a stakeholder-centric HRM strategy increases trust, psychological safety, and respect, which are essential for Organisational Citizenship Behaviour (OCB) (Ehnert et al., 2016; Kramar, 2014). Furthermore, adopting a stakeholder-centric HRM strategy increases the legitimacy of the organization, which results in Institutional Excellence, especially in higher learning institutions where various stakeholder groups are involved, including students, faculty, external bodies, and society at large. The emphasis of accreditation criteria and sustainability rankings, which recognizes stakeholder engagement as a performance criterion, is consistent with this perspective.

1.5.9 Total Quality Management (TQM)

Total Quality Management (TQM) is a broad management philosophy, developed by pioneers like W. Edwards Deming, Joseph Juran, and Kaoru Ishikawa. It combines continuous improvement, employee involvement, stakeholder focus, and systematic problem-solving in organisational processes (Deming, 1986; Oakland, 2003). In higher education, TQM principles are applied to curricula, teaching, administration, and student services, fostering academic excellence, transparency, and accountability (Sarma & Nayak, 2020). In theory, TQM fits within a Sustainable

HRM Ecosystem by facilitating participative decision-making, leadership involvement, staff development, and feedback and thereby fostering Organisational Citizenship Behaviours (OCB-I and OCB-O) including altruism, civic virtue, and conscientiousness. Such discretionary acts support institutional performance, and thus support better Institutional Excellence. Research demonstrates that universities which implement TQM have higher academic legitimacy, more trust from stakeholders, and greater operational productivity. It brings out the necessity not only of integrating quality-focused HR practices into a strategic process improvement model for long-term success but also systematic process improvements as part of this plan (Oakland, 2003; Sarma & Nayak, 2020). Ultimately, TQM provides a conceptual and practical base to interlink sustainable HR practices, faculty engagement through OCB, and organisational strength. This approach is particularly suitable for higher education institutions in Kerala.

1.5.10 EFQM Excellence Model (1991)

EFQM Excellence Model Established by the European Foundation for Quality Management in 1991 is an internationally acknowledged quality management framework that of the EFQM Excellence Model. This model comprises nine ‘enablers’ and ‘results’ which the model uses as criteria. The 'enablers' are Leadership, Strategy, People, Partners & Resources and Processes. The 'results' are Customer Results, People Results, Society Results and Business Results. EFQM approach is oriented towards innovation, flexibility, value to the stakeholders and sustainability. Transformational leadership and a learning culture lie at the heart of the EFQM approach. Its framework is transferable across many domains, including higher education. This framework can be applied to benchmarking, strategic planning, decision making, quality assurance, etc.

The EFQM method will help in increasing the effectiveness of the institution in higher education. This method aligns with the Sustainable HRM Ecosystem, it cultivates leadership, employee engagement, a positive culture and participative decision making. These are important for enhancing OCB-I and OCB-O, altruism, civic virtue, and conscientiousness. And these are crucial for Institutional Excellence.

Numerous studies in Indian HEIs demonstrate the EFQM approach to be effective. Such an approach is relevant and applicable for better accreditation outcomes, stakeholder satisfaction, innovation, and sustainability outcomes. This is an important step towards achieving excellence at HEIs. This is useful for diagnosing and building forward thinking excellence. The EFQM approach is a holistic theory for connecting sustainable HR practices with employee engagement, OCB, and performance metrics, from the various aspects of a HEI's culture. The approach can be especially pertinent for government-funded HEIs in Kerala.

1.6 Construct Operationalisation

Construct operationalisation is a process in which the theoretical framework of a study is implemented into tangible empirical variables. As such, this research investigates the sustainable HRM Eco system, Psychosocial Workplace Milieu, Employee synergizing Dynamics, OCB-I, OCB-O, Academic Service Orientation and Pedagogical Innovation as a multidimensional one. More over, the constructs themselves will need to be defined in terms of evaluation of each of these constructs under the Govt. aided higher educations in Kerala. By doing so, these constructs help with clarity of concept, consistency among measurements and in integrating the theory with practice. It provides a breakdown of the dimensions, behavioural indicators and theoretical basis of the constructs along with the framework for systematic testing of hypothesised relations in the research model. This is also illustrates a moderated mediation framework created in the present study, examining the association between sustainable HRM with OCB, Institutional Quality Orientation and Institutional Excellence

1.6.1 Psycho-social Workplace Milieu

In government-aided higher education institutions (HEIs) in Kerala, the Psycho-social Workplace Milieu (PWM) is defined in terms of faculty-perceived psychosocial environment that is influencing their engagement, discretionary behaviours and institutional outcomes. Furthermore, the Psychosocial Workplace Milieu can be expanded on to reflect different dimensions: supportive organisational climate, fostering collegiality, open communication and psychological safety (Allen

& Meyer, 2017; Chiaburu & Harrison, 2008); organisational justice (distributive, procedural and interactional fairness), increasing trust, commitment and extra role behaviours (Colquitt et al., 2013; Greenberg, 1987; Li & Bamberger, 2022) job autonomy and empowerment, intrinsic motivation, proactive engagement, and new ideas (Deci & Ryan, 2000; Spreitzer, 1995; Iqbal & Ahmad, 2023; Lee et al., 2019); democratic and transformational leadership, allowing participatory decision making, individual support and knowledge sharing (Podsakoff et al., 1990; Srivastava & Bedi, 2023; Wang et al., 2018); role clarity that reduces ambiguity, enhances performance and harmonizes expectations (Grant & Parker, 2009; Podsakoff et al., 2000) and recognition and motivation that promotes commitment, effort and voluntary contributions (Alfes et al., 2013; Chughtai & Buckley, 2011; Deci & Ryan, 2000). These are empirically proven that positive perceptions lead to the development of Organisational Citizenship Behaviour (OCB-I and OCB-O) and also drive Institutional Excellence through collaboration, innovation and sustained performance. (Al-Tarawneh et al., 2022; Iqbal & Ahmad, 2023; Li & Bamberger, 2022 Srivastava & Bedi, 2023). In this way, PWM operationalizes the psychosocial processes that regulate the effect of Sustainable HRM practices on faculty behaviours with respect to the performance of institutions at large.

1.6.2 Employee Synergizing Dynamics

Employee Synergizing Dynamics are the interconnected psychological and behavioral processes through which employees collectively enhance organisational effectiveness. In the context of the HE sector, these dynamics involve job satisfaction, the positive emotional state generated from work experiences (Judge et al., 2017; Spector, 2019), job commitment, the psychological linkage to the organisational goals and values (Meyer & Allen, 1991; Afshan et al., 2020), teamwork, the joint engagement towards common academic goals (Chiaburu et al., 2013; Salas et al., 2015), and trust in management, the confidence in the integrity, transparency, and competence of the HEI's top management team (Dirks & Ferrin, 2002; Li & Bamberger, 2022). Studies have found these dynamics to be mutually reinforcing, mediating the relationships between HRM, OCB, and organisational excellence,

especially in the context of faculty engagement and organisational performance sustainability (Chughtai & Buckley, 2011; Iqbal & Ahmad, 2023).

1.6.3 Organizational Citizenship Behaviour – Individual (OCB-I)

OCB-I, for its part, describes voluntary and discretionary employee's behaviours intended to benefit colleagues and the immediate work environment, but not necessarily prompted by official incentives (Organ, 1988; Podsakoff et al., 2000). OCB-I at schools occurs as altruism, so that teachers are willing to help each other with teaching or research-based work, and as courtesy, so that teachers are proactive in mediating conflicts and promoting good social relations (Podsakoff et al., 2009; Williams & Anderson, 1991). Previous studies found that OCB-I is associated with a favourable organisational climate, perceived justice/fairness, and transformational leadership, and cooperative, mentoring, and collective academic productivity (Chiaburu & Harrison, 2008; Iqbal & Ahmad, 2023; Li & Bamberger, 2022).

1.6.4 Organizational Citizenship Behaviour – Organization (OCB-O)

OCB-O comprises discretionary behaviours that pertain to the organization as a whole and which support the effectiveness, culture as well as sustainability of the organization (Podsakoff et al., 2000; Williams & Anderson, 1991). In higher education, OCB-O involves civic virtue, active participation in institutional governance, sportsmanship, tolerance of inconveniences without complaint, and conscientiousness that extends beyond the basic role requirements (Organ, 1997; Podsakoff et al., 2009). Studies have found that OCB-O is closely associated with views about perceived organizational justice, empowerment and inclusive leadership and results in institutional innovations; improvement of teaching and learning; and sustainable performance (Al-Tarawneh et al., 2022; Chughtai & Buckley, 2011; Srivastava & Bedi, 2023).

1.6.5 Academic Service Orientation

Academic Service Orientation is a dimension of institutional excellence that reflects the extent to which the institution makes an effort to provide high-quality educational services, such as student-centred learning, curriculum relevance,

mentoring, and support services (Elkington, 1997; TBL; Srivastava & Bedi, 2023). Responsiveness to student needs, faculty engagement in teaching excellence, and alignment of academic programs with evolving societal and professional demands are fundamental aspects. Institutions with an academic service orientation have higher accreditation scores, enhanced student satisfaction, and improved faculty performance (Al-Tarawneh et al., 2022; Prasad & Tata, 2021).

1.6.6 Pedagogical Innovation

Pedagogical Innovation refers to the work of implementation of new pedagogy and technical means, using new teaching and learning technology with the objectives of stimulating learning (Teece et al., 1997; Srivastava & Bedi, 2023). Innovative activities contribute to Institutional Excellence that also leads to stronger academic quality, innovation by faculty and to adaptability by the organisations to change situations very quickly (Prasad & Tata, 2021; Sarma & Nayak, 2020). There is empirical evidence that faculty engagement in innovative practices is associated with improved organizational citizenship behaviour (OCB), including organisational citizenship, job satisfaction, and academic collaboration (Li & Bamberger, 2022; Iqbal & Ahmad, 2023). This chapter outlines the theoretical insights that support the Sustainable HRM Ecosystem, Organisational Citizenship Behaviour (OCB-I and OCB-O), as well as Institutional Excellence for higher education. It implies that sustainable HRM is a system that is interconnected with workplace psychosocial contexts, psychosocial conditions, and employee processes that influence faculty attitudes, motivation and behaviour towards faculty by applying non reward action. This makes it evident that these HRM settings are critical in driving OCB-I and OCB-O, who are the crucial behavioural nexus of HR practices and performance in an institution. The notions of institutional excellence in terms of academic service and pedagogical innovation are conceived of as the summation of the outcomes, but also as an ongoing process of organisational behaviours.

1.6.7 Capital Synergy

In this study, Capital Synergy refers to the collective institutional strength generated when a supportive HRM environment enables teacher's human

capabilities and citizenship behaviours to work together towards common academic and institutional goals. This synergy ultimately contributes to academic service orientation, pedagogical innovation, and institutional excellence.

1.7 Conclusion

This chapter adds a rich theoretical background to the study about the effect of a Sustainable HRM Ecosystem on faculty conduct and institutional outcomes in post secondary institutions. It builds the concepts, theories and empirical perspectives into context to portray Sustainable HRM as a multi faceted ecosystem of supportive organizational climates, justice and inclusiveness, job autonomy, transformational leadership, role clarity, recognition and employee well being. These psychosocial and synergic components promote personal and organizational Organisational Citizenship Behaviour (OCB), where OCB-I is driven by altruism and courtesy, and OCB-O by civic virtue, conscientiousness and sportsmanship, which highlights their crucial importance for the development of a cooperative, ethical, high performing academic context. Institutional Excellence is viewed as a comprehensive idea comprised of both academic service orientation and pedagogical innovation, and is indicative of institutional progress, stakeholder responsiveness, and long term value creation. This chapter further situates these ideas within strong theoretical foundations underpinning these concepts as Stakeholder Theory, Sustainable Work Systems, the Resource Based View, Social Exchange Theory, Reciprocity Norms, Organizational Justice Theory, the Triple Bottom Line, Dynamic Capabilities Theory, TQM and the EFQM Excellence Model, and reveals how sustainable HRM practice encourages discretionary behaviours and enables building of institutional capacity. Overall this chapter presents a comprehensive theoretical perspective on sustainable HRM, OCB and its impact on institutional excellence in higher education.

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Chapter 2

REVIEW OF LITERATURE

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Chapter 2

REVIEW OF LITERATURE

2.1 Introduction

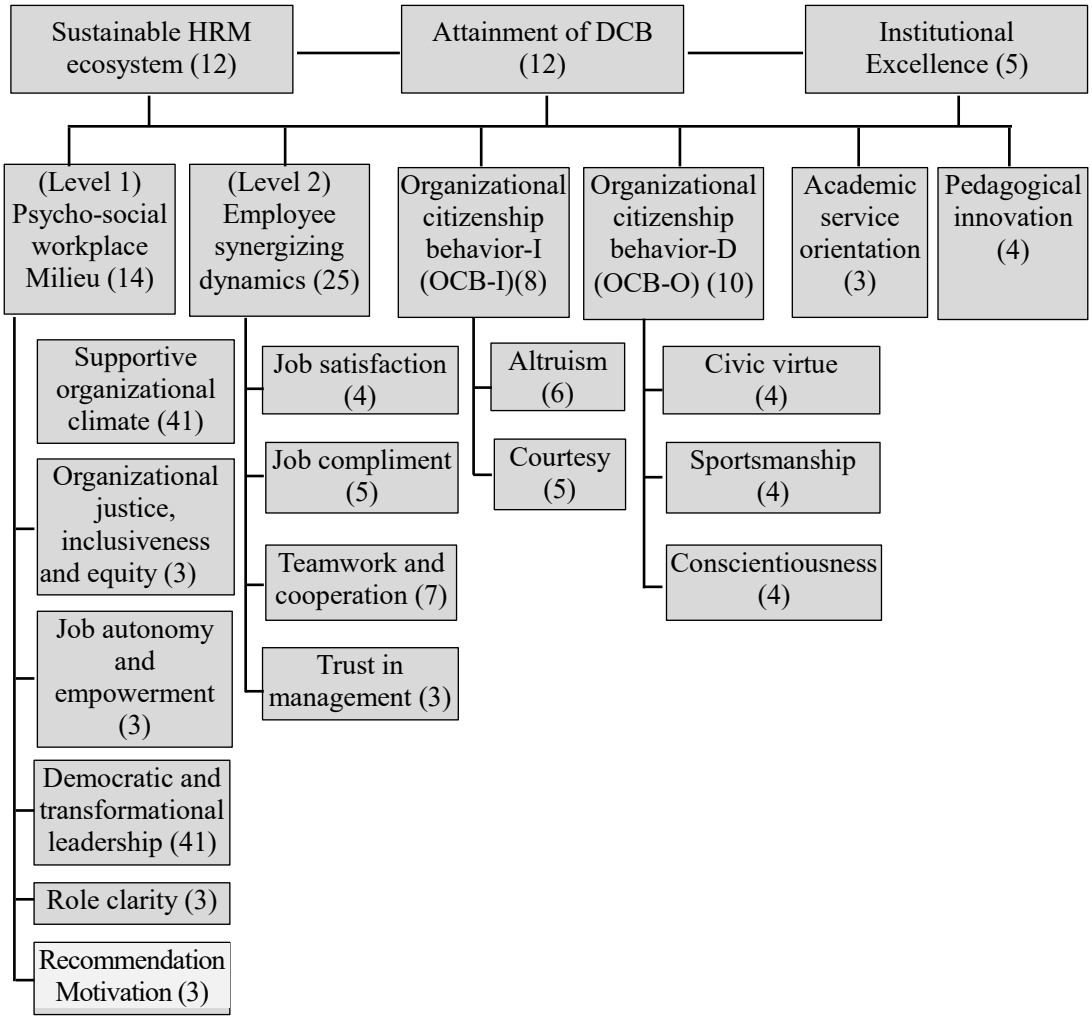
To attain organizational sustainability and excellence in contemporary organizations, it is essential to develop a comprehensive knowledge of various integrated domains. These domains include sustainable human resource management, psychosocial workplace environment, cooperation among employees, organisational citizenship behaviour (OCB), organisational excellence, academic service, and pedagogical innovation. In recent times, research findings on organisational success over the last ten years reveal that success depends not only on organisational changes and technology adoption but also on developing conducive HR practices and behaviours to ensure organisational success. Recent findings on organisational success reveal that sustainable human resource management models like Green HR Management, Environmental, Social & Governance (ESG) models, and HR models are essential to develop a culture of environmentally friendly behaviours. In parallel to these findings, research on psychosocial workplace environments highlights the significance of social support in maintaining a healthy and productive workforce.

On the other hand, the concept of employee synergy demonstrates the significance of teamwork, cooperation, trust, and coordination between different generations to ensure organisational success, especially when faced with technological changes or working remotely. These fundamental concepts of HRM have been supported by numerous research works on organizational citizenship behaviour (OCB) or OCB-I and OCB-O, which emphasize the significance of positive organisational behaviour to organizational success, absenteeism reduction, and service quality enhancement. More research works have also shown the significance of OCB to institutional excellence, especially in the academic setting where institutional excellence is considered paramount to organisational success.

Moreover, academic service orientation is considered fundamental to student satisfaction and institutional reputation as well. In the context of global competitiveness, pedagogical innovation via digital transformation, interactive teaching methods, the flipped classroom model, and inquiry based learning are widely accepted as fundamental for achieving learning outcomes, institutional adaptability, and global competitiveness. These concepts encompasses a holistic perspective that describes the fundamental concepts of HRM that pertain to organisational success or excellence. This integrated review seeks to lay the groundwork for the discussion on how sustainable HR ecosystems, positive employee behaviour, and pedagogical excellence can lead to success in higher education.

Figure 1.1

Sequence of Review of Literature



2.2 Studies Related to Sustainable HR Systems

2.2.1 Studies Related to Sustainable HR system

Christina (2025). This systematic review and meta-analysis examined the effects of sustainable HRM practices on corporate sustainability performance. It identified key constructs such as Green HRM practices, environmental training, sustainable performance management, employee engagement, pro-environmental behaviour, organizational culture, and leadership. The results showed that Green HRM practices—such as green recruitment, environmental training, and sustainable performance management—positively impact corporate sustainability outcomes. Additionally, the study highlighted the roles of organizational culture and leadership as moderators and enhancers of the effectiveness of sustainable HRM practices.

Gao et al. (2025). The objective of this study was to examine the association of Green Human Resource Management (GHRM) practices, leadership styles, and organizational culture with employee's pro environmental behaviours in Chinese manufacturing and service firms. It specified key components which included GHRM practices, green organisational culture, leadership approaches, and employee's pro environmental actions. The study revealed that practices such as green performance management, employee empowerment, green recruitment, and green transformational leadership led to an increase in green company culture, inducing employees to act in environmentally friendly ways. It was concluded at overall level that HRM practices are essential to fostering an environmentally responsible organisational culture.

Papademetriou et al. (2025). The research focused on the influence of Human Resource Management (HRM) as a driver of sustainability in organizational operations. The research established the main constructs of the study, including HRM as a driver of sustainability, as well as sustainable HRM approaches. The results of the research established that sustainability HRM approaches enhance organizational sustainability as well as employee commitment to sustainability. The research provided a framework that allows organizations to enhance employee engagement, sustainability, and competitiveness through sustainability-focused HRM approaches.

Sakib (2025). A bibliometric analysis was conducted to explore research trends, key journals, leading authors, and contributing countries in sustainable HRM. The study identified core constructs such as sustainable HRM practices, financial goals, social responsibility, environmental care, and HR regeneration. Results showed that sustainable HRM seeks to balance financial performance with social and environmental responsibilities and HR renewal. This research deepened understanding of sustainability-focused HR practices and clarified the diverse goals organizations aim to achieve.

Soekotjo et al. (2025). The model integrates ecological sustainability with social inclusivity as part of sustainable Human Resource Management (HRM) practices. It highlights key elements such as ecological sustainability, social inclusivity, Green HRM, Diversity, Equity, and Inclusion (DEI), employee engagement, organisational resilience, and sustainability performance. The results underscore the need to blend Green HRM strategies with DEI principles to create a sustainable HRM framework that promotes both environmental responsibility and social fairness.

Wiyono et al. (2025). The research focused on the influence of Environmental, Social, and Governance (ESG) practices on employee performance and well-being in private higher learning institutions in Bandung, West Java. The research established the main constructs of the study, including environmental, social, and governance practices, as well as employee performance and well-being. The results of the study established that environmental and social practices influence employee performance and well-being, while governance practices act as a mediator of the two.

Yousaf et al. (2025). The research analysed factors affecting organizational environmental performance, with a focus on environmental culture and Green HRM practices. It identified key constructs such as organizational environmental culture, Green HRM practices, and performance. Results indicated that a robust environmental culture, reinforced by Green HRM practices, enhances organizational environmental performance. The study highlighted the significance of developing an environmental culture to attain better sustainability results.

The research presented by **Cooke, (2023)** has been conducted to formulate a sustainable HRM research ecosystem based on contemporary HRM research trends. This paper provided research findings of HRM research trends, sustainability, interdisciplinary collaboration, and global alignment key constructs. In this regard, they found that promoting interdisciplinary research, research sustainability, and global alignment contribute to a sustainable HRM research environment. It recommended a holistic approach for HRM research; the environmental, social, and economic dimensions combine.

Al-Swidi et al. (2021). The research focused on exploring the influence of Green HRM practices, leadership styles, and organizational culture on employees' green behaviour and organizational environmental performance. Major constructs were identified in the research such as Green HRM practices, leadership styles, organisational culture, employees' green behaviour, and environmental performance.

Saeed et al. (2018). This research investigated the effect of Green HRM practices in influencing pro-environmental behaviour of the employees. It found major constructs like Green HRM, pro environmental behaviour, employee engagement, and organizational commitment. Among the measures in its reports which significantly enhanced pro environmental actions for workers it found that green training, empowerment, and recognition effectively enhanced employees' commitment to environmental goals. The study pointed to the vital role of HRM in fostering a culture of environmental responsibility.

Longoni et al. (2016). In this article, examined the association between Green HRM practices and Green Supply Chain Management (GSCM) practices. It identified the major constructs that are Green HRM, GSCM practices, environmental performance, and organisational integration. The findings suggested that Green HRM activities such as green recruitment, training, and performance management positively affected GSCM practices which, in turn, impacted environmental performance. As stressed by the study, cross functional integration is key to organizational sustainability.

Renwick et al. (2012) conducted a comprehensive review of the Green HRM literature and laid the basis for future research. Key constructs identified included

Green HRM practices, environmental performance, organizational culture, and employee behaviour. The findings indicated gaps in previous studies empirical foundation between Green HRM practices and environmental performance, as well as the importance of mediating roles of both organizational culture and employee behaviour. The research has also encouraged further empirical research to reveal the impact of Green HRM practices on environmental performance.

2.2.2 Studies related to Psychological Workplace Milieu

Choong et al. (2025). This highlights the importance of organizational justice and trust in leaders for creating a positive psychosocial work environment. When employees, especially teachers, perceive fair treatment and trust their leaders, they are more likely to exhibit Organizational Citizenship Behaviours (OCB), such as collaborating and volunteering. The study underscores that inclusive decision making and fair treatment improve job satisfaction, motivation, and trust within the organisation. On the other hand, perceived unfairness or inequality can harm employee engagement and their willingness to go beyond their formal duties. Overall, this research shows that a fair, supportive, and inclusive environment is vital for fostering a healthy psychosocial climate, which encourages positive workplace behaviours and institutional success.

According to the study by **Haines et al. (2025)**, the study sought to explore the impact of psychosocial hazards like discrimination, emotional abuse, and unfair treatment on the well-being of the employee. The study highlighted the significance of the fact that if important organizational values like justice and respect are compromised, it will lead to a poor psychosocial work environment, which may cause employee disengagement and burnout. The study proposed that if positive ethical values like fairness are promoted, it may help mitigate the hazards and lead to positive psychological experiences in the work environment.

Jeong et al. (2025) explored the role of environmental, social, and governance (ESG) management activities, including fairness- and ethics-based corporate governance, in impacting internal performance within large manufacturing organizations. It found that ESG-related engagement increases trust and commitment among organisations

and thus performance as a whole. Governance processes in particular were positively associated with employees' perception of fair treatment and an ethical climate which indicated that transparent and fair management processes can form trust and commitment over time. These results emphasize justice centered governance processes as essential drivers of sustainable HRM, being key to employee welfare as well as an important driver of organizational success.

Jang and Kim (2025). This study explores the dynamic interplay between job autonomy, work engagement, and innovative behaviour, with a focus on how performance pressure moderates these relationships. It finds that job autonomy boosts both work engagement and innovative behaviour, which are essential for sustainable performance. However, the authors highlight that performance pressure can limit these positive effects, indicating that while autonomy encourages motivation and creativity, its advantages may decline under high pressure. The findings emphasize the need to balance autonomy with performance expectations to achieve optimal employee outcomes. Overall, this research offers valuable insights into sustainable HRM by showing that well-managed autonomy can foster innovation and engagement, provided it is considered within the broader work environment.

Yılmaz et al. (2025). This study sought to explore the impact of perceived social support on the work-related quality of life of teachers. The study used psychological distress as a mediator. The study found that perceived social support reduces psychological distress and enhances job satisfaction. The study emphasized the significance of the fact that perceived social support does not only have a direct impact on psychological well-being but also mediates the relationship between work-related stress and life satisfaction.

Dong et al. (2024). The overall review highlighted the importance of psychological safety and psychosocial safety climate (PSC) as key elements of working surroundings. The survey revealed that organizations with high PSCs, on average, show better communication, increased trust, greater employee engagement, and reduced stress. The authors characterized psychosocial safety climate as a macro organisational resource that affects general employee well being and productivity.

Liu (2024). This study explored how inclusive leadership characterised by fairness, participation, and appreciation of diverse perspectives shapes employees' psychological experiences at work. Results showed that such leadership boosts workplace well-being by increasing vigour, a psychological resource representing energy and enthusiasm. This demonstrates that inclusive and equity-focused leadership behaviours help create a supportive psychosocial work environment by fulfilling employee's basic psychological needs of autonomy, competence, and relatedness. This, in turn, promotes positive emotional states and overall well being. Consequently, inclusive leadership encourages psychological safety, fairness, and a supportive social climate key components of a healthy psychosocial workplace.

Sripada et al. (2024). The research looked at the effects of social support on user engagement in task-shared psychological treatments delivered in primary care (PRIME India). It concluded that higher perceived social support is associated with higher attendance and improved mental health outcomes. It is the only study to suggest that social support makes a difference in adherence and effectiveness of psychosocial interventions in Indian mental health settings outside of standard employment settings, highlighting more general psychosocial factors than formal work.

Varanasi et al. (2024) reported on the design and introduction of the Sahara Line a social support group intervention provided on WhatsApp to teachers in low income schools in India. This was a three month pilot study, which enrolled 28 teachers and linked them with domain experts in the emotional, pedagogical and technological fields through a structured helpline system. The assessment showed participants had improved access to professional and emotional support, reduced feelings of isolation, and felt better equipped to manage job related challenges. This study thus offers a concrete example for how social support infrastructure can be built in Indian educational work milieus to promote teachers' psychosocial well being.

Zhang et al. (2024). The study examined the influence of the psychosocial work environment on nurse's health outcomes, emphasizing the mediating role of personal resources and job crafting. According to the Job Demands Resources (JD-R)

framework, a supportive psychosocial environment (autonomy, positive social interactions, manageable workloads) contributes to the resilience and overall well being of employees. Results indicated that organizations promoting a healthy psychosocial environment are more capable of managing occupational stress and maintaining consistent performance levels.

Bernuzzi et al. (2023) describes how role clarity, especially when combined with supervisor support, is an important resource for employee resilience and coping during organisational change. Clear expectations and the realization of changing responsibilities support employees in coping with stress and uncertainty associated with restructuring or transitions. Such clarity enhances their feeling of psychological control and security, reducing stress, and they contribute to the proactive taking of the necessary action on change related work. Furthermore, clarity of role and supportive supervision is found to enhance cooperation and adaptive behaviours that are crucial in a dynamic organizational environment for teamwork to operate properly. These results are congruent with previous studies demonstrating that role clarity facilitates job satisfaction, performance maintenance, and adaptive behaviours necessary for the effectiveness of the workplace in times of turbulence.

Deng et al. (2023) conducted a meta-analysis examining how transformational leadership influences different outcomes like follower performance, creativity, and job satisfaction. They found that transformational leaders consistently enhance employee performance and satisfaction by strengthening trust and collaboration among team members. This study also found that this leadership style remains effective even when compared with other styles, such as authentic and ethical leadership. In addition, the transformational style promotes team learning and collective success, making it one of the most effective leadership approaches within organizations today. This analysis highlights the lasting positive impact of transformational leadership on both individuals and teams.

Gavade et al. (2023) carried out qualitative interviews with teachers in low-income Indian schools about their experience of coping with stress and how teachers had adapted support practices when hybrid teaching was brought in during the time of

COVID-19. They found that many teachers established informal social networks (peer groups, WhatsApp groups) to exchange pedagogical and emotional support when there were no structured support systems in place. They also pointed out some limitations in emotion-focused support, indicating that technical/ informational support was more often accessible. This study illustrates how the psychosocial milieu in constrained work contexts depends heavily on emergent social support practices.

Jyothsna et al. (2023) conducted a study in urban Bengaluru focusing on women who had experienced domestic violence. It looked at psychological distress, perceived social support, and coping strategies. Participants reported high distress, but perceptions of social support from family and friends varied: women with greater support reported lower distress. Though not grounded in the workplace, the study demonstrates how social support in a psychosocial environment acts as a buffer in high stress Indian settings, and so can contribute to a better interpretation of models of occupational stress in India.

Kurtuluş et al. (2023). The current study investigates psychological well being mediating the link between social support and work-life balance. It showed that staff who receive good-quality social support generally have a better work-life balance and experience less stress and emotional exhaustion. These findings illustrate the notable (indirect) impact of social support on psychological health and a positive organisational culture.

Stanley and Sebastine (2023). In a psychosocial perspective, the research delved into social support, burnout, and work-life balance. According to the research, social workers who said they were supported had less burnout and maintained healthy work life balance. The authors highlighted the critical role of social support as a psychosocial resource in addressing occupational burnout.

The study reported by **Yang and Jiang (2023)** explored the role of employee recognition as a psychosocial factor that can impact the work environment, not only for the employees being recognized but also for those employees who witness the recognition. Research found that employee recognition, which is a significant

psychosocial factor, produces positive emotions, trust, and morale among employees. According to the research, workers who observe a colleague being recognized feel a boost in their own feelings.

China et al. (2022) reported on the effective influence of a supportive work environment on employees' turnover intention in Chinese organizational contexts. According to organizational support theory, it shows that employees have lower turnover intentions when they perceive the work climate as supportive, which includes managerial support, fair policies and inclusive practices. This may reflect high retention and psychological commitment, respectively. Further, it discovers and clarifies mechanisms by which job embeddedness mediates this relationship, showing that a supportive climate nurtures positive job attachment and supports organisational stability. These findings echo broader literature demonstrating how supportive workplace environments are associated with increased employee job satisfaction, commitment and well being, as well as reduced levels of stress and negative outcomes, rendering this study a useful contemporary alternative to your study on supportive climates as well as attitudes of employees.

Kirkman and Rosen (2022) The present analysis examines the impact of team empowerment on the psychosocial workplace, specifically team leadership and social support. Increased efficacy, job satisfaction, and well-being were positively related to increased levels of empowerment in teams. The findings illustrate that workplace empowerment leads to trust, collaboration, and resilience, and a positive psychosocial environment. Important factors included transformational leadership and social support systems, which were identified as critical in creating a setting that was supportive and motivating. These features are necessary for both employees' mental health and organizational cohesion, which are paramount for institutional success. The study findings will go a long way in helping to illuminate the link between psychologically supportive workplace culture, as supported by empowerment and good leadership, and their influence on work outcomes and well-being.

Rathi and Lee (2022) examined the relationship between emotional labour and work stress and found a mediating role of team support and job resources in mitigating the effects of work stress in a sample of nurses. It suggested that a supportive atmosphere and especially a high level of support in a team contributes significantly to reducing workplace stress in nurses. Applying team cohesion and resources for this study, the study contended that these psychosocial factors tend to mitigate some of the adverse impacts of emotional labour, fostering a healthy work setting and improving well being. We think it aligns with the understanding that supportive relationships and sufficient resources are crucial elements in managing stress and enhancing employee engagement in the psychosocial workplace environment.

Jolly et al. (2021). This integrative review consolidates different conceptualizations of workplace social support. Drawing on Conservation of Resources (COR) and JD-R theories, it explains how emotional, informational, and instrumental support assist employees in managing challenges. The review highlights social support as a vital job resource that promotes engagement, reduces burnout, and improves employee retention, thereby strengthening the psychosocial environment.

Las Heras et al. (2021). This study examines how a family-supportive organizational culture affects employees' satisfaction with their work–family balance, which, in turn, influences key outcomes, including job satisfaction and intentions to leave. The cross-national research finds that when employees see their organization as supportive of family and work integration through practices like flexible schedules, empathetic leadership, and respectful norms, they tend to be more satisfied with their work ,family balance and less likely to consider quitting. These results support broader research showing that supportive workplace environments serve as resources that enhance employees' psychological well-being, reduce stress from conflicting demands, and foster positive attitudes toward the organization.

Kundu et al. (2020) explore role clarity influence on innovative work behaviour (IWB) in organisational context. They find that job role clarity drives employees to become much more creative and be open to innovatively thinking out of the box, like ideating and exploring different ways of doing things. Job clarity creates a

psychologically safe atmosphere, where employees are free to take risks and do their best work without fear of failure. Role clarity, the paper points out, can help to ensure that there is a common ground in role definitions, which will have an impact on the innovations of the individual; and cross-functional colleagues collaborate by aligning their roles and reducing conflicts. Since role ambiguity decreases creativity and initiative, the research paper mentions that organizations should focus on having clearly defined roles in terms of role expectations in order for organizational behaviors to grow in their development and application; these will improve employee innovativeness, motivation and performance.

Gómez et al. (2019) studied the impacts of organizational and psychosocial working conditions on perceived mental health. Results show that employees who experience unfavourable psychosocial environments like heavy workload, inadequate control, and lack of supervisor support had worse mental health and report more absenteeism. Balanced psychosocial milieu including control, support and balanced load distribution is significant for psychological welfare and work environment harmony, as stressed by the authors.

Lee et al. (2018) investigated empowerment, employee performance, and emotional engagement. They concluded that the empowerment of the employees increases psychological meaningfulness and fosters positive emotional states at work. Autonomy was the best predictor of empowerment-driven performance. The researchers found that empowerment decreases emotional exhaustion through greater job control. Empowering employees was associated with greater resilience and adaptability to change. Similarly, empowerment encouraged OCBs and teamwork. Their research reaffirmed the significance of empowerment as a current leadership and HRM necessity.

Peters et al. (2018) studied the effects of social support at the workplace on mental health and work ability. The study showed that workers who receive more support from supervisors and coworkers have better mental health and higher competence at work.

Tariq et al. (2018). The study examines the effects of positive organizational culture on academic success and innovation in universities. The study stresses the importance of universities promoting a culture of openness, participatory leadership, and shared values, as it helps create a collaborative culture among staff members. This culture helps staff share knowledge, collaborate, and address problems as a team. The study also shows that a positive culture helps enhance the morale of staff, improves the quality of teaching, and boosts research participation. Further, the study shows that a positive culture helps promote accountability, reduces interpersonal conflicts, and encourages innovation and flexibility – all of which are important in universities operating in a highly regulated environment or one that is experiencing high levels of competition. Thus, the study shows the importance of organizational culture in enhancing the effectiveness of universities and achieving success.

Mor Barak et al. (2016) The study explored how Inclusiveness & Equity influence employee well-being and organizational citizenship. Results showed that inclusive practices lessen feelings of marginalization and boost OCB. Better opportunities and respect for diversity enhanced psychological empowerment. Employees in inclusive settings experienced greater job satisfaction and motivation. Overall, the research confirmed the positive connection between inclusion and beneficial behavioural outcomes.

Alfes et al. (2013) investigated how Supportive HRM Climate influences employee engagement, commitment, and discretionary behaviour. Their study focused on employees' subjective perceptions of whether HR practices were genuinely supportive, developmental, and fair. They found that employees who perceive HRM systems as supportive demonstrate substantially higher levels of emotional and cognitive engagement. According to this research, supportive HR climates, characterized by clear communication, recognition, training opportunities, and participative decision making, strengthen employee's connection to the organization. Their results also revealed that supportive HR climates significantly enhance affective commitment, which is a strong predictor of long term retention and extra role efforts. The authors demonstrated that employees in supportive HR environments are

more willing to contribute beyond their formal responsibilities, including engaging in citizenship behaviours and collaborative work. Furthermore, supportive HR climates reduce burnout by promoting trust in managerial intentions.

Carmeli et al. (2011) investigated how inclusive leadership, characterised by participative decision-making, openness to input, and supportive interactions, contribute to the work-related psychosocial atmosphere. It discovered that these leaders foster a culture of psychological safety, trust and engagement that lead employees to reach out to support others in such ways that they engage in volunteer lending, sharing of ideas and going above and beyond in service of others, on the other hand. When individuals feel valued and they are listened to, interpersonal confidence is greater, stress is lower, and a more encouraging social environment is present. Overall, these data indicate that a positive psychosocial workplace, teamwork, motivation, and organizational citizenship behaviours, are also influenced by leadership practices which are inclusive and collaboration-focused.

Henagan (2010) explored the role of workplace recognition as a psychosocial trigger with possible impact on day-to-day relational climate via upward social comparison. Recognition is usually meant to inspire, the study says, but the recognition can sometimes feel uncomfortable for the recognised employee, creating interpersonal tension because recognition alters how coworkers evaluate one another. Psychosocially, recognition serves as a climate-shaping event: recognition that is socially risky or comparison inducing can undermine relational ease, increase vigilance, and disturb psychological comfort in the workplace, thus shaping the climate of the psychosocial workplace.

Mukherjee and Malhotra (2006). This study aims to examine the effect of role clarity on organizational commitment, job satisfaction, and service quality in the context of call centers. The research results indicate that when employees have a clear idea of their roles and responsibilities, they tend to be more committed to the organization, experience greater job satisfaction, and perceive higher service quality. Moreover, having clear roles reduces confusion and ambiguity, which enables employees to perform their duties better and leads to healthier relationships with supervisors as conflicts decrease.

Furthermore, the study results highlight the significance of having clear roles as they lead to greater employee engagement and a sense of alignment with organizational goals, thus resulting in positive outcomes for individuals as well as the organization.

Piccolo et al. (2006). The present study examines transformational leadership on workers' work attitudes as regards job satisfaction, trust, and commitment. Research is consistent that transformational leaders influence followers positively in the way they view work, reducing role ambiguity in employees, enhancing their psychological contract, mediating a higher sense of efficacy, and creating higher job satisfaction and loyalty towards the organization. Transformational leaders who use transformational leadership models, which enable their followers to form psychological bonds with the organization encourage the employees to put into practice organizational citizenship behaviours (OCB). Transformational leaders help employees' attitudes and their work habits become more likely to become healthy by creating an atmosphere of support and inspiration. In turn, this increases the likelihood that they will produce good results on the job and positive leader–follower relationships.

Kirkman and Rosen (1999) The study on Empowerment in Self-Managed Teams indicated that teams with empowerment tend to exhibit higher productivity and a greater sense of ownership. Autonomy was also identified as a significant factor as employees can manage their tasks independently. The study results indicated that empowerment is positively correlated with higher team morale, shared sense of responsibility, and better communication skills. Moreover, having control over their jobs enables individuals to be more dedicated to their responsibilities. Furthermore, the study results indicated that empowerment leads to greater flexibility in fast-changing environments. Overall, the study results identified empowerment as a significant predictor of team as well as individual success.

Viswesvaran et al. (1999) conducted a meta analysis to evaluate how social support buffers work related stress. The results showed that emotional and instrumental support from colleagues and supervisors decreases job strain and boosts satisfaction. This study established social support as a key resource in the psychosocial environment, vital for handling occupational pressures.

2.2.3 Studies Related to Employee Synergizing Dynamics

Bakya et al. (2025). This study investigated whether Human Resource Management (HRM) practices influence the success of team building in India's insurance sector. It was intended to measure the effect of HRM practices on team cohesion, motivation and overall performance. The main constructs were HRM practices, team building effectiveness, team cohesion, motivation, and performance. Findings indicate that recruitment and selection, training and development, performance appraisals and compensation are the core practices that contribute to enhancing team building. According to the conclusion, in the insurance industry, aligning HRM practices with team development strategy leads to improved team performance and organizational success.

Stewardson's (2025) research investigated how weaver ants prove highly efficient teamwork where the collective effort of a group exceeds the personal contribution. It emphasizes key concepts like collective effort, teamwork, force generation, and coordination. Findings show that weaver ants can work in large cooperative groups with loads so heavy that no individual ant alone could bear them, showcasing super-efficient teamwork.

Subramaniam and Sharmika (2025). An empirical study on group processes in HRM at AMPO Valves India Private Limited, it assessed interactions in both formal and informal groups. They wished to illustrate the nuance of how the group works in HRM as it attempts to reflect in their analysis: interactions between individuals, team structures, communication styles, individual behaviours. The constructs were group processes, performance, conflict resolution, team management practices, leadership styles, decision-making behaviours, power relations, and organisational culture. Findings emphasized the centrality of HRM in the development of optimal group dynamics and performance, addressing dysfunctional behaviours. Findings of this study deliver valuable information which HR practitioners and organisational managers could apply in order to change group behaviour and performance. In their research on perceived organizational support.

Turek (2025). This study examined whether sustainable HRM practices improve job commitment, satisfaction, teamwork, and trust in management in various cultures using the GLOBE framework. This shows that by taking cultural context based HR practices into consideration, the trust in management increases and job satisfaction is ensured, along with job commitment and teamwork. HR strategy to resonate with the cultural values enhances employee commitment in the organisations according to the research.

Vasumathi (2025) examined the influence of organizational culture on employee performance. This study provides insight into how much aligning the organizational culture with how employees perceive support can be correlated, resulting in a better performance outcome. The major concepts recognized include the impact of organizational culture, perceived organizational support, and employee performance. Results suggested that supportive culture positively impacted perceived support. This indicates a need for a supportive working culture to encourage employee engagement and productivity.

Chawla and Guda (2024a). Explored the association between psychological health and job commitment in corporate organizations. The findings showed that employees with good psychological health had better affective and normative connections to the job. Emotionally supportive, valued, and mentally safe employees were more likely to feel more committed and worked. Well being increases loyalty, lowers turnover intention, enhances role engagement, and improves performance all leading to commitment, as the new study found. The authors said positive mental health forms the necessary underpinnings for maintaining sustained high levels of job commitment.

Gaur and Gupta (2024) conducted a systematic review to examine how quality of work life balance and corporate culture influence employee engagement. The review is a summary of the body of literature outlining the literature and determining a link between the constructs outlined above. Patterns of common themes found were quality of work–life balance, corporate culture, employee engagement, and perceived organizational support. The paper concluded that an effective work life balance and well supported corporate culture markedly boost employee engagement

through perceived organizational support, seen as a crucial mediator. The study demonstrates that organizations need to have positive cultures supporting employee well being to raise the level of engagement.

Gaur and Gupta (2024). In this systematic review, the role of work-life balance quality, corporate culture, and employee engagement was investigated. The purpose of the present study was to examine how these constructs are interdependent with the impact on employee engagement and organizational performance. Three constructs were found in the research: work-life balance quality, corporate culture, and employee engagement. Results from this study showed that work-life balance quality and corporate culture are positively related to employee engagement. The three constructs that were studied were work-life balance quality, corporate culture, and employee engagement. Work-life balance quality and corporate culture affect employee engagement positively, as shown in the results.

Nassani et al. (2024). This research investigated what elements of participatory leadership and organizational culture contribute to increasing job satisfaction of employees. This study aimed to explore the relationship between leadership style and organizational culture and its impact on job satisfaction. The findings revealed participatory leadership, supportive culture, and job satisfaction — three constructs. Participatory leadership and supportive culture positively affected respondents' job satisfaction.

Pereira et al. (2024). The current study explored the influence of meaningfulness at work on job satisfaction of digital and hybrid workforce. Participants were happier with their jobs when employees felt like they had meaning. This sense of purpose increased intrinsic motivation and reduced emotional exhaustion. Job satisfaction was also increased if people felt that their individual values were aligned with the organization’s mission, the study found. A flexible option for work also enhanced satisfaction when combined with open communication and recognition. In general, however, job satisfaction has been deemed an essential element in overseeing employees in our working world today.

Venkatesh et al. (2024). This is a detailed research study in assessing team dynamic effect of remote work, organization work impact from remote working in recent firms. The focus is on how their dynamics evolve over time, as they are learned with respect to team interactions, especially in relation to styles of leading, communication, geographic spread, and geographic dispersion, etc. for examples that impact team dynamics based on leadership and communication, etc. This research also showed that goal specificity and style of leadership are critical to the result of communication, the leader role and team composition, the role of the leader role and team composition in teamwork, team structure, and norms of communication are all crucial to outcomes, communication, trust, trustworthiness, and leadership skills are crucial for team performance remote from the outcome of the communication to the role played by the result of team performances. This research offers practical recommendations to organizations and staff to improve virtual collaboration in addition to improve employee productivity during the transition to remote work.

Weddle et al. (2024). Strategies aimed at quickly changing the organizational culture for better inclusivity and performance were discussed. The study endeavoured to provide practical recommendations aimed at those leaders seeking effective cultural change. The main constructs were organizational culture change, inclusivity, leadership methods, and employee engagement. Findings suggested the effectiveness of leaders in expediting cultural change could be hastened by encouraging common understanding and commitment, reinforcing change via formal systems, building relevant skills and capabilities, and role modelling desired behaviours. These strategies are crucial for developing inclusive cultures that enhance organizational performance and productivity.

Bai and Vahedian (2023). A study analysed the relationship between organizational commitment and digital workplace stress as determined by ethical factors and investigated the mediating factor ethical environment to relate the relationship. Of the main constructs such as organizational commitment, ethical environment, digital workplace stress, and employee well- being. Findings indicated that high organizational commitment and supportive ethical environment can reduce digital workplace stress

and, accordingly, we could create and establish such cultures to help to maintain employee mental health in digital jobs.

Han and Kim (2023) had studied trust in management on the employee voice behaviour in academic and corporate institutions. Results revealed that trust led employees to make constructive suggestions and raise issues. Higher levels of trust fostered psychological safety, participation in decision making, citizenship behaviours and collaboration. They also discovered that transparent leadership communicative practices were critical for trust building and established trust as another key to an organization's open and ethical culture.

Meyers (2023) examined how using shared strengths within organizations impacts work teams at work for overall performance at an individual and team level. The constructs that we identified were also collective strengths, team performance, individual performance, trust, and team unity. When team members were confident in one another's strengths and tapped into their strengths effectively, the outcomes improved on both an individual and team level, the results showed. Knowing or utilizing diverse skill strengths helped promote improved team effectiveness, it said.

Reeves (2023) investigated the influence of organizational culture on employee behaviour on engagement, innovation, and communication. Specified constructs were organizational culture, employee behaviour, engagement, innovation, and communication. It was discovered that positive organizational cultures lead to high engagement and high productivity and negative climates to high turnover and low morale. The study noted the importance of mentoring programmes in fostering healthy and positive work cultures by sharing knowledge and building working relationships in the workplace.

Singh (2023). It sought to explore the impact of organizational culture on employee creativity and innovation in Indian startups. Main constructs covered organizational culture, creativity, innovation and financial outcomes. The research suggested that cultures that embrace learning, autonomy, open communication and a clear mission increase creativity and innovation for the benefit of the organization. As a result, such

behaviours were found to correlate positively with financial outcomes, illustrating the strategic significance of facilitating organisational cultures for startups.

Su and Lee (2023) investigated how an inclusive culture of an organization affects job satisfaction in educational contexts. The findings presented by the study showed that three factors inclusiveness, fairness, and respect for diverse viewpoints led to significant job satisfaction. Inclusive environments decreased stress in the workplace and increased collaboration. Open communication and equitable HR practices also added to it. This further increased job satisfaction. The paper described inclusiveness as being a critical element for motivation, psychological safety, and sustainable HRM in academia.

Wengel (2023) examined trust building among groups of skilled individuals working autonomously under time pressure. described as swift starting action teams (STATs). The constructs found out in this study are trust development, STATs, team performance, and leadership. Implications of the research results revealed that trust in STATs is established due to transparent communication, empathy, consistency, inclusiveness, accountability, and integrity and that each are contingent on trust to accomplish harmonious cooperation and good performance under high stress contexts

Educational research indicates that there are significant gains in employee commitment with professional growth opportunities especially in educational settings. **Muleya et al. (2022).** Studies reveal that affective commitment is significantly raised by training and career development, with career advancement as the strongest influence. Employees supported by a well informed profession are more emotionally attached to their organizations. This highlights the importance of implementing successful training programs and mentoring programmes aimed at improving employee commitment, engaging them, and developing their focus on the long term organizational strategy and results in higher job satisfaction and success of the organisation.

Reimann and Guzy (2020) examined the extent to which trust in management can influence employee readiness for organization-wide change. They found that more trust facilitated acceptance of new policies, restructuring efforts, and technological

updates. Those with more trust in management were less resistant to change, more adaptable to changes, and felt more supported by the organization. Additionally, trust was needed to reduce ambiguity and create a sense of stability amidst the change and suggests that trust was the bedrock of change management.

In online-based team gaming communities **Zeng (2018)** assessed social ties as predictors of team performance. Factors examined were social ties, team performance, individual performance, activity level, and communication. The results showed that higher activity level with friends led to better performance for low-skill players. For high skill player's engagement, however, the act of being with friends at times had a negative effect on player's performance, highlighting the intricate, contextual nature of social bonds in team dynamics.

Klug (2016) has studied the impact of group dynamics on team success. The constructs included group dynamics, team success, focus, diversity, and task complexity in the study. Results showed that the most successful teams were more focused than their similar counterparts while having members with experience in a variety of tasks. The increased coordination and communication were also found to contribute significantly to superior team performance.

Lykourentzou (2015) explored the impact of personality compatibility on crowdsourced team effectiveness. These constructs were personality compatibility, team performance, interaction quality, and emotional experiences. The results also showed a significant effect of personality compatibility on team outcomes, interaction processes, and emotional experiences, underscoring the necessity to evaluate personality traits when forming teams.

Hertel (2008) examined process gains from synergy in teams and integrated relevant psychological findings into team management. The new constructs showed: process gains, synergy, social support, perceived indispensability, expert development, multiple perspectives, team learning, and social identification. The results suggested that these contributors produced synergetic effects that enabled teams to operate above their individual team members' potential.

In a more focused study, **Forsyth (2006)** has closely investigated group dynamics, focusing on the performance effects of group processes, especially on both individual and collective performance. The constructs that we derived were group processes, individual performance, collective performance, and coordination. The consequences indicate that improved individual and group performance necessitates effective group work sharing (i.e., clear information, communication, role clarity and coordination) in order to enhance individual and group performance.

2.3 Studies Related to Organisational Citizenship Behaviour

2.3.1 Organisational Citizenship and its Dimensions

Han and Fan (2025). The research looks at negative psychological experiences particularly relative deprivation and the links to organizational citizenship behaviour (OCB) by tourism workers, and to research mechanisms that underpin this link. An analysis of survey data from 305 tourism workers found that relative deprivation significantly reduced OCB. Organizational identification was a partial mediator: employees feeling relatively deprived identified less with their organization and thus engaged less in citizenship behaviours. Also, attribution of responsibility moderated both the direct and indirect effects, with the negative effect on OCB being stronger if employees attributed responsibility to the organization for their deprivation.

Rahman et al. (2024). A mixed methods study of Organ's five dimensions of OCB and their relationship to perceived performance was carried out in a private hospital in Indonesia. Qualitative interviews and data from 32 hospital employees yielded satisfactory levels of altruism, conscientiousness, sportsmanship, courtesy, and civic virtue, with courtesy rated highest and altruism lowest. Findings suggested that higher levels of these OCB dimensions were associated with more favorable performance evaluations. Qualitative considerations indicated that clear job descriptions, a strong sense of belonging, and participation in training programs contributed to civic virtue and conscientiousness. The analysis concludes that the OCB dimension model developed by Organ is still valid in complex settings like hospitals.

Robinson, et al. (2023). This study examined whether work-related emotional intelligence (W-EI) can predict OCB independently of personality traits. With three different groups, part-time student employees, postdoctoral researchers, and full-time employees (total N = 462), W-EI was found to consistently and significantly correlate with higher OCB levels, especially in interpersonal behaviours like helping and courtesy, even when accounting for Big Five personality traits. The third study also showed that the link between W-EI and OCB was partly mediated by increased interpersonal job satisfaction and decreased burnout.

Yaakobi and Weisberg (2020) explored how OCB translated into performance outcomes and examined the psychological resources shaping this relationship. In Study 1, occupational efficacy predicted engagement in OCB, which in turn predicted self-rated performance. Study 2 employed multi-source data from employees and managers and demonstrated that OCB positively predicted performance even after controlling for demographic factors. Collective efficacy was found to strengthen the positive effect of OCB on performance, particularly in efficiency and creativity.

Whitman et al. (2020) examined coworker social support as significantly impactful on interpersonal OCB, with specific attention to altruism and courtesy. Utilizing survey responses from employees and supervisors that spanned several organizations, it was found that employees who perceived they had more support from their coworkers behaved with a greater degree of altruism and politeness. Peer support was found to be associated with elevated mindfulness and decreased conflict. The results also emphasized support from coworkers as a significant relational resource, where colleagues offer trust, psychological safety, and mutual responsibility as contributors to the potential for enhancement of OCB-I.

Barsade (2020) investigated the influence of emotional contagion on interpersonal OCB in a team. Positive emotional contagion greatly boosted altruistic helping behaviours (e.g., when employees are in positive emotional states, they were more inclined to help and work alongside others). On the other hand, negative emotional contagion affected altruism and courtesy by increasing withdrawal and irritability.

The study looked at the effects of emotional contagion as it relates to the team climate and moment-to-moment citizenship behaviours.

Bakker et al. (2019) looked at the everyday dynamics of teachers' OCB in a diary study. The research reported that on days when teachers were having more positive social interaction and experienced more positive emotions, they performed OCB with help and extra-role initiative (ie they took a positive role). Yet, persistent high levels of OCB also were correlated with emotional exhaustion over the following days, indicating a possible dark side of citizenship behaviour when over-the-top or imposed by an external stimulus.

Nielsen et al. (2009) conducted a meta-analysis to examine the degree of association between OCB and group performance. Based on data from 38 individual samples (N = 3,097), a positive relationship ($\rho = .29$) was found between OCB at the group level and group performance outcomes. The analysis also identified moderators such as task interdependence and type of performance indicator, emphasizing the importance of OCB to collective performance.

A meta-analysis by **Dalal (2005)** explored the relationship between OCB and counterproductive work behaviour. Results revealed a modest but consistent negative correlation ($\rho \approx -0.32$) in this regard, meaning that employees for whom OCB is a frequent activity tend to report CWB less often, but they are not necessarily opposites. This relationship was not significantly impacted by whether the focus was on the individual or the organization (target matching). Moreover, OCB and CWB also had distinct antecedents. The results suggest that in general, both these behaviours are more of an adaptive response to work environment and not oppositional.

The content and characterisation of OCB, as well as the structure, were the focus of a review and meta-analysis done by **LePine et al. (2002).** Using correlations across studies, they noted that Organ's five OCB dimensions were interdependent and had similar associations with key predictors, such as job satisfaction, commitment, perceived fairness, conscientiousness, and leader support. The findings

suggest that the dimensions of OCB are better regarded as representations of a broader prosocial construct rather than as independent behaviors. This is consistent with modelling OCB as one, aggregate construct unless there is a strong theoretical rationale to characterize the different dimensions separately.

Podsakoff et al. (2000) in their detailed academic review of existing theoretical and empirical research on OCB suggested future research directions. It demonstrated that job attitudes, perceptions of fairness, transformational leadership, and leader support are significant predictors of OCB. Moreover, OCB was positively related to supervisor-assessed performance, reward distribution, and unit efficiency. The authors noted that there was considerable conceptual overlap among various citizenship-related constructs and discussed the need for more explicit definitions, better measurement, and a clearer separation of individual from organizational behaviours.

2.3.2 Studies Related to OCB -I and OCB-O

Chawla and Guda (2024b) analysed how psychological safety affected civic virtue in hybrid workplaces. These findings showed that employees who felt safe expressing opinions without fearing reprisal were more civic. The rise in civic virtue could be explained by managers encouraging open communication and ethical dialogue. Workers who feel psychologically supported were more likely to attend voluntary meetings, share ideas, or raise concerns about change within the institution, thus highlighting the essential role of supportive leadership and trust in sustaining civic virtue.

Tremblay (2024) investigated a reciprocal, longitudinal relationship between team-level interpersonal citizenship behaviour (OCB-I), especially helping, and absenteeism in a large public organisation. Based on four waves of data from more than 5,000 employees across 168 teams, the work also found that rising levels of helping behaviour over time resulted in decreasing levels of team absenteeism, evidence that OCB-I related to altruism resulted in increased attendance and engagement. There was also a reciprocal relationship, with higher absenteeism in one period predicting lower levels of OCB-I later, showing that absence from the team decreased its members' abilities to help. Taken together, the study showed that OCB-I constituted

a team resource that stabilized functioning, but still had a tendency to reflect strain in absenteeism.

George and Agrawal (2023) studied the influence of work engagement on sportsmanship of service workers. The findings showed that engaged employees had higher tolerance for work related adversity and performed better with each other. Those employees who engaged in their work had a higher likelihood of maintaining sportsmanship, and engaged employees hardly ever grumbled or expressed negativity. A study of sportsmanship as an emotional determinant of a healthy workplace, this study placed sportsmanship as a behavioural proxy for emotionally healthy workplaces.

Han and Kim (2023) investigated the influence of ethical leadership on conscientiousness in educational institutions. Results indicated that ethical leaders who behaved openly and acted consistently led faculty to behave conscientiously. Conscientiousness was enhanced in a manner where employees saw leaders as moral role models, and highly conscientious employees exhibited better adherence to institutional policies and professional responsibilities. The study found that conscientiousness is significantly influenced by ethical work climates.

Martínez-Corts et al. (2023) explored the link between conscientiousness and meaningful work in academia and service workers. It found that when employees felt they were more fulfilled at work, they were far more likely to cooperate with regulations in a very strict way and more attentive on a voluntary basis. Conscientiousness increased when employees felt engaged in what they were doing in accordance with that organization's mission. A more meaningful work also associated with less absenteeism, and more procedural responsibility, which implies conscientiousness is one of the significant behavioural results of purposeful spaces.

Robinson et al. (2023) studied whether work-related emotional intelligence (W-EI) predicts organizational citizenship behaviours (OCB) and whether its relationship is stronger with organization-focused rather than individual focused OCB. Among workers and researchers, the research reveals a powerful W-EI is the main predictor for all measured forms of OCB. Most of the effects are in the moderate range. When

the study examines OCB-I (helping, courtesy) and OCB-O (civic virtue, loyalty, conscientiousness), respectively, using the Williams and Anderson scales, W-EI underlies both of these variables although the influence is usually stronger for OCB-O. Notably, W-EI continues to be a prominent predictor after controlling for Big Five personality traits, autonomy, and tenure. Mediation analysis revealed that higher W-EI leads to more satisfaction with jobs and less burnout than low levels, resulting in a positive relationship between both OCB-I and OCB-O.

Colquitt and Zipay (2022) reviewed the interpersonal effect of the fairness of the daily experiences on OCB, specifically altruism and courtesy and conducted a daily diary using episodic justice theory. The findings showed that an employee who experienced respectful communication, dignity, and interpersonal fairness day by day was more altruistic in lending a hand on the same day. Episodes of fair treatment also resulted in enhancement of courtesy, through proactive coordination, information-sharing and avoidance of conflict. Moreover, the study reported that employee experiences of fairness accumulate over time, promoting employees' consistent willingness to engage and adopt OCB-I.

Li and Bamberger (2022). The study assessed the effect of fairness on conscientiousness as an organizational citizenship behaviour, focusing on rule adherence and exceeding basic requirements. According to the results, employees that perceived interactional and procedural justice as higher than others were more conscientious in that they demonstrated dependability, punctuality, and desire of volunteering additional work. Research suggested that recognition and trust enhanced conscientious behaviours, with a finding that conscientiousness emerges in work environments with respect and transparency.

Rai and Maheshwari (2022) investigated the manner in which organizational identification enhanced civic virtue among Indian service staff. Employees who were psychologically connected to their organization actively participated in governance activities, policy discussions, and strategic initiatives, according to the study. Civic virtue was also fostered by transparent communication and administrative trust, and in this respect, employees with a high level of civic virtue were more able to adapt

to change. The researchers concluded that civic virtue facilitated institutions' resilience and proactive participation.

Subramanian et al. (2022) examined perceptions of distributive justice and relationships to OCB-O and tested whether gratitude mediated this relationship. Using time-lagged, multi-source data from 185 employees and their work-site supervisors at an Indian manufacturing firm, the study found that distributive justice positively predicted employees' gratitude toward the organization and that gratitude, in turn, predicted supervisors' ratings of employees' OCB-O. Results of mediation indicated that gratitude mediated the influence of distributive justice on OCB-O significantly, reflecting that just reward allocation inspired a moral sense of obligation and reciprocal discretionary behaviours.

Dutton and Heaphy (2021) examined how high quality connections (HQCs), defined through mutual positive regard, vitality, and relational trust, contributed to interpersonal OCB (e.g., altruism and courtesy). Utilising longitudinal survey data from collaborative industries, the study found that HQCs energised employees and developed relational resources to promote voluntary helping. As such, staff embedded in HQCs exhibited more altruism (e.g. emotional support, sharing of workload, and unprompted support). HQCs also improved courtesy, through increased sensitivity to coworkers' needs and less avoidable disruptions. The study found that HQCs were a relational mechanism involved in continued interpersonal citizenship.

Koopman et al. (2021) examined the impact of daily changes in positive affect and job autonomy on helping behaviour (OCB-I), and whether help produced emotional gains. Daily positive affect and job autonomy were both strong predictors of increased altruistic helping in the study. Helping also produced same-day positive emotional benefits for helpers, implying that OCB-I resulted in immediate affective rewards. But high levels of helping over days was linked to resource depletion, and this would seem to suggest benefits and costs in OCB-I.

Methot et al. (2021). This research looked at the role of workplace friendship networks on interpersonal OCB, and specifically altruistic helping and emotional support. Through the use of social network analysis across several organizations, it

was observed that employees with larger friendship ties displayed greater altruistic OCB and higher willingness to provide assistance and emotional support. However, excessive friendships resulted in relational overload and emotional exhaustion, leading to lesser courtesy behaviours. In general, the findings imply that workplace friendships can promote OCB-I, however an overemphasis on relational demands may diminish employees' capacity to maintain courtesy consistently.

Ng and Feldman (2021) evaluated how psychological resilience influenced sportsmanship among employees in demanding service jobs. Using longitudinal data, it is found that resilience reduced negative reactions to stressors and was associated with greater open-mindedness and positivity, reflected in reduced complaining and blame. Resilient employees displayed stronger perseverance and emotional stability, which supported sportsmanship and contributed to more positive organizational climates.

Walumbwa et al. (2021) analysed the role of transformational leadership in predicting citizenship behaviours directed toward the organization, especially on civic virtue. Based on data collected from multinational companies, the research concluded that transformational leaders increased employees' willingness to engage in participating in organizational governance by way of activities such as attendance at optional meetings, staying informed, and voicing constructive suggestions. Transformational leadership reinforced psychological safety and organizational identification, which made employees more inclined toward civic virtue across cultural contexts.

Watkins and Dirani (2021) investigated the effect of a strong learning culture in supporting OCB-O through an environment favourable to development, collaboration, and organizational enhancement. The results indicated that learning-based organizations were associated with higher levels of conscientiousness and civic virtue among employees, which manifested as the initiative of shared knowledge, learning as well as the way employees took an active role with learning and organizational problem-solving and strategic activities.

Avey et al. (2020) investigated how psychological ownership influenced organization-directed citizenship behaviours, particularly conscientiousness and civic virtue. Using structural equation modelling with multi-industry survey data, the study found

that psychological ownership increased discretionary behaviours such as rule adherence, voluntary extra effort, and active participation in organizational improvement. Psychological ownership fostered stewardship and accountability, leading employees to treat organizational success as a personal priority.

Deng et al. (2020). This study explored how emotional labour strategies affect interpersonal OCB, with a focus on altruism and courtesy. Findings showed that deep acting positively correlates with these behaviours, as genuine emotion regulation encourages authentic connections and responsiveness to coworkers. In contrast, surface acting has a negative impact on OCB-I, since emotional dissonance and exhaustion diminish the resources available for helping and courteous acts. The research highlights the significance of authentic emotional regulation in sustaining interpersonal citizenship, especially in emotionally challenging roles.

Li et al. (2020). The study explored how proactive personality influences organization-directed citizenship behaviours. Results showed that proactive employees tend to exhibit civic virtue by participating in decision-making and providing constructive feedback. Additionally, a proactive personality was linked to conscientiousness, with proactive workers voluntarily taking responsibility to uphold organizational effectiveness.

Newman et al. (2020) discussed the effect of psychological safety on interpersonal OCB and tested its mediating role between leadership and citizenship behaviours. Drawing on healthcare and service organisation data, the study found that psychological safety promotes altruistic helping and courtesy through a healthy willingness to take interpersonal risks, voice concerns, and coordinate proactively. Ethical leadership increased psychological safety, which in turn augmented OCB-I, confirming psychological safety as a mediator between leadership behaviour and interpersonal citizenship.

Rockstuhl et al. (2020). The study has tested if quality leader–member exchange (LMX) predicts interpersonal OCB across different cultures. Based on data from employees across 20 countries, the significant effect of high-quality LMX, measured for trust, respect, open communication, and mutual obligation, on helping, courtesy,

and interpersonal facilitation remained constant. Although the effect sizes differed slightly depending on the national context, the relation between LMX and OCB-I was significant, indicating that supportive leader–follower relationships are a universally relevant factor for the development of interpersonal citizenship.

Salas-Vallina et al. (2020) examined how healthy leadership behaviours influenced sportsmanship. The findings showed that leaders who demonstrated empathy, fairness, and supportive communication increased sportsmanship among employees. Sportsmanship was associated with reduced negativity and improved collective well-being, and trust in leadership increased employees' tolerance for workplace inconveniences. The study concluded that sportsmanship contributed to positive organizational functioning.

Buil et al. (2019) studied how transformational leadership increased civic virtue. The study revealed that employees of transformational leaders exhibited stronger participation in organizational life, including attending meetings, staying informed, and voicing constructive opinions. Civic virtue was high in high empowerment and fairness, and civic participation promoted organizational learning and adaptability. The research also correlated civic virtue to greater organizational identification.

McNeely and Meglino (2019) explored how affective and cognitive empathy predicted interpersonal OCB, particularly when they focused on altruism and courtesy. Emotional resonance increased spontaneous helping, and the results revealed that affective empathy predicted altruism the same way. More robustly predicting courtesy than affective empathy was cognitive empathy, as perspective-taking in turn allowed employees to anticipate coworkers' needs and prevent conflict. The study showed that distinct emotional and cognitive mechanisms supported different aspects of OCB-I.

Podsakoff et al. (2017) studied sportsmanship as an OCB dimension involving positive attitudes and abstaining from complaints about minor inconveniences. The findings indicated that sportsmanship contributed to a more cooperative work environment by reducing interpersonal stress and improving team morale. Job

satisfaction and role clarity emerged as strong prognosticators of sportsmanship, and employees with greater emotional stability demonstrated higher sportsmanship.

Lee and Allen (2002) explored how positive job affect, and job cognitions differentially predict organizational citizenship behaviours (OCB) toward individuals (OCB-I), toward the organization (OCB-O), and workplace deviance. Analysing data from 149 nurses and their coworkers, the results showed that positive job affect was more strongly associated with OCB-I, whereas job cognitions were more strongly linked to OCB-O. Both types of OCB were negatively correlated with workplace deviance, supporting the idea that OCB-I and OCB-O are distinct and suggesting that emotional and cognitive factors influence each form differently.

Williams and Anderson (1991). The study explored the different antecedents of OCB-I and OCB-O and compared these with in-role performance predictors. Using ratings from both self-assessments and supervisors, it was found that job satisfaction is more strongly associated with OCB-I, whereas organizational commitment is more closely linked to OCB-O. Additionally, both job satisfaction and commitment predicted extra-role behaviours beyond regular job duties, supporting the idea that citizenship behaviours directed at individuals are distinct from those aimed at the organization.

2.4 Studies Related to Institutional Excellence

Ngema et al. (2025). This study sought to explore the impact of HRM practices on faculty performance in Kenyan private universities and emphasized the crucial role of HRM in enhancing institutional excellence. Staff outcomes are positively related: better outcomes such as employee participation, talent development, effective HR information systems and HR management in the systems had strong associations with better faculty experience as measured by increased research output, teaching quality and retention as well as research productivity. Findings from our study also suggest that HR is essential in supporting institutional success: how good HR systems can support teachers, improve their skills and work for the broader goals of the organisation that underlays all faculty through development practices, in support of them and with their faculty to succeed. Overall, the study finds sustainable

performance and effectiveness of educational settings is rooted in systems based HR practices that contribute to people, talent, and commitment through talent development.

Serrano and Smith (2025). It investigated quality assurance systems and related institutional practices and their impact on higher education performance and their links to teaching quality, research output and service effectiveness. Using multiple institutions of higher education's university survey data an analysis of quality assurance found that it leads to institutional capacity for appropriate levels of quality teaching, productive research facilities and linking of service work to organization's demands of overall institutional excellence.

Abbas and Abdulhussien (2022). This study examines how human resource management (HRM) practices such as recruitment, training, performance assessments, compensation and other processes affect the achievement of organizational excellence concerning a public institution. It has been found that the right supportive work environment and meaningful HR activities can help the employees perform at their best and help the monitoring of performance, ensuring an improved service delivery thereby forming institutional excellence. The work revealed that well embedded and applied HRM practices are required to support the high performance and elevation of the association's name.

Sang and Kim (2022). The inquiry aimed to examine the impact of organizational citizenship behaviour (OCB) on academic and administrative performance of higher educational institutions, which are related to the quality assurance of management systems. Results identified that certain aspects of OCB (conscientiousness, civic virtue) were associated with team cooperation among staff, reduction of internal slowdowns and higher student responsiveness. Moreover, the construction of quality assurance systems was also associated with fostering the relationship between OCB and institutional performance, in addition to offering structured processes, defined degrees of performance and enhanced quality improvement. Organisational citizenship is important to the institution, and it needs the existence of both formal guidelines, as well as voluntary activities of the workforce for greater success in higher education.

In the field of higher education, the transformative nature of higher education leadership supports innovation, faculty engagement, and performance improvement, which further contributes to the quality of education by ensuring effective processes. The leadership characteristics of inspirational motivation and intellectual stimulation by leaders positively support knowledge sharing and creativity among university faculty and are essential for quality education and organizational success **(AlHusseini et al., 2021)**. Studies have shown that faculty dedication, institutional contributions, and a culture of continuous improvement are better when leaders empower faculty as well as promote collective learning and creativity, showcasing institutional excellence. This would mean that transformational leadership can bring in and motivate diverse leaders who are involved not only in the mission of the institution but also in developing faculty, students, and learners and thus, the leadership style must take on a more impactful role.

Ali and Musah (2020) examined the effect of organizational citizenship behaviour (OCB) and quality assurance practices on institutional excellence in higher education. Drawing on research data obtained from academic and administrative personnel working in Malaysian universities, the authors found that when OCB, namely conscientiousness and civic virtue, are deployed, the result is a more efficient institutional performance, a better work ethic, cooperation, improved internal response and an effort towards meeting students' needs. It is well documented that quality assurance systems linked well together using systematic procedures and results-oriented standards that promote ongoing development and self-improvement. It is concluded in this study that institutional excellence results from the formal implementation of institutional policy and, through those employees, from voluntary behavior, which is why OCB plays an important role in enabling the sustainable performance of an institution.

2.4.1 Studies Related to Academic Service Orientation

Research exploring institutional excellence across higher education indicates that service quality and academic engagement are key to institutional reputation and performance outcomes. **Hossain et al. (2025)** observed that attributes such as faculty

profiles, curriculum strength, and research activities have a positive influence on student satisfaction and institutional image, with institutional image acting as a mediator for the service quality–satisfaction relationship. These results indicate academic service-oriented activities of academic personnel and university leadership as major determinants of reputation and performance of universities.

Pevida et al. (2023) examined service quality's association with student satisfaction within the higher education context. Results highlight the importance of responsiveness, reliability, assurance, empathy, and academic support as facets shaping students' perceptions of the institution in terms of performance and overall satisfaction. High standards of service quality enhance the student experience, foster loyalty, and improve the institution's image, supporting institutional excellence and providing a competitive edge in the higher education market.

Gruber et al. (2020). Academic service orientation, which encompassed faculty responsiveness, approachability, mentoring support, and dedication to student well-being, was examined. Its results, conducted within European universities, showed that a service-oriented faculty greatly increase student satisfaction, learning experiences, and perceptions of institutional quality. Faculty, who can empathize with their students, deliver timely feedback, and demonstrate engagement in community-focused behaviours, contribute to the institution's success and foster student loyalty.

2.4.2 Studies Related to Pedagogical Innovation

Eltahir and Alsalhi (2025). This research looked into the impact of flipped classroom teaching on educational achievement: it discovered higher student performance, higher motivation and better results in student engagement. The paper maintains that interactive techniques activated by digital resources encourage the students' behavior. The shift in classroom dynamics produces a deeper understanding and greater pupil involvement. In innovative teaching strategies, learning environments that inspire and engage participants enhance teaching quality and institutional excellence as shown by these results. Therefore, pedagogical innovation is essential to the academic achievement and competitive advantage of educational organizations in the dynamic educational environment of today.

Zhang and Wu (2025) examined the impact of digital teaching skills and the use of technology on university education quality. It has found that teaching effectiveness is significantly influenced by faculty digital proficiency in terms of interactive and flexible learning. Digital tools and virtual classrooms help students to engage more and to adapt more, especially in the wake of the pandemic. Moreover, these new trends allow universities to remain competitive by updating their pedagogical styles to the latest technological standards, while also benefiting the greater success of any institution. So it is necessary to embed digital teaching methods through and into the longer-range strategic plan in order to enable education to grow and attain excellence.

According to **Shalgimbekova et al. (2024)** the implementation of innovative teaching technologies has a significant efficiency in enhancing the effectiveness of teaching, students' knowledge and active involvement in education, and learning outcomes. They evidence that when the faculty adopt new pedagogical practices and quality teaching and the level-of-fit to match the needs and demands of students, these benefits to academic excellence also become strong, therefore supportive of competition. The evidence also supports the principal role of faculty innovation talent as a critical aspect of quality education in academic institutions and in university performance.

2.5 Discussion of Literature Review and Identification of Research Gap

Sustainable human resource management (sustainable HRM) has evolved from being the focus of the studies on green practices till now to being seen of HRM as an ecosystem which caters toward the improvement of human, social and organisational capital. The experts say sustainability of HRM is not just the case for small programs like recruitment or training but rather a psychosocial work culture with supportive culture, openness, equity in decision making, autonomy, empowerment, ethical and transformational leadership and clearly defined roles alongside well recognized rewards and motivation. Sustainable HRM solution is to support the organisational targets and the integrity and future development of employees. Other studies in

various sectors indicate that employees who take into account the feelings of being supported, fair and heard experience higher levels of psychological safety and lower stress levels in addition to higher levels of staff engagement. However, the bulk of research is in corporate and manufacturing and private service industries, but less is used at tier one higher education institutions. In particular, in government aided colleges functioning under complex public and private modes control systems with many sets of regulations and other departmental requirements.

Psychosocial workplace environment, which addresses people's everyday experiences on the job, is very closely related to sustainable HRM. The literature surrounding organizational climate, perceived support, justice and leadership consistently demonstrates that these psychosocial factors are immediately the conduits via which HRM policies manifest and their effects. For example, studies indicate that supportive supervision and staff solidarity create psychological safety; clear roles reduce stress and conflict and perceived fairness (distributive, procedural and interactional) builds trust in management, motivating employees to go out of their way to do so. In the educational context, this is central because academic work is inter-related, reputation-based and intellectually rigorous. However, in educational research empirical research in higher education tends to focus on some elements like leadership style, workload stress or perception of justice rather than the psychosocial field that is treated as a fusion of a series of broader HR policies, corporate governance principles and mundane encounters between the faculty and administrators. Research on interpersonal employee behaviours including job satisfaction, collaboration, commitment and trust with managers also demonstrated the significance of the human resource system and organizational climate in the determination of positive behaviour. Job satisfaction is associated with diminished job turnover, burnout and greater work performance. In particular, affective commitment has a positive relation to persistence, loyalty and discretionary effort. Additionally, team working and cooperation-based environment is also very high in encouraging of knowledge sharing, cooperative teaching, collaborative teaching and research outputs in the academic sector. Confidence of the management is relevant for voice, acceptance, and participation in the institutional activities. These ideas are

increasingly framed as “sustainable working systems” or “healthy organizations” not just because of short-term productivity but also because of long-term commitment, motivation and flexibility. Yet, many empirical orientations treat those attitudinal and relational variables as HRM outputs, or as an independent driver of performance, without regard in a general, sustainable HRM program.

The field of Organizational Citizenship Behaviour (OCB) research has seen substantial advances, but it still lacks a focus. OCB is the aggregate of voluntary actions of which there are voluntary actions that contribute to a work environment with regard to social and psychological quality of life beyond what formal duties demand hence, they are usually regarded by most scholars as the primary concern. A central paradigm shift has been the discrepancy as to the extent of OCB for the individual (OCB-I — in particular, altruism and courteous behaviour) and OCB for the organisation (OCB-O — in particular civic virtue, conscientiousness, sportsmanship). According to the literature across fields, individuals (OCB) are impacted by perceived and felt organizational support, justice, transformational leadership, trust, and job satisfaction. New studies also focus on empathy, friends at work, acknowledgment, and psychological safety as antecedents of helping and cooperation, and participation. Interestingly, in-depth investigation shows that OCB-I is more a function of team solidarity and member satisfaction than OCB-O, and its correlates have been organizational stability, flexibility, and performance overall. Yet, academia researches (especially in India and Kerala context) rarely differentiate between OCB and one of two OCB, so that faculty citizenship behaviour is treated as only one factor and unrelated to other facets.

In higher education, there are parallel studies on academic service orientation and teaching innovation but vary on their elements. The notion of academic service orientation involves the faculty supporting students and stakeholders, in a mentoring, advising, problem-solving or resource provision kind of way and academically serving, serving by providing them with quality assistance. These behaviours enhance student satisfaction, perceived service quality, and institution's reputation. On the other hand, pedagogical innovation is associated with the application of

different styles of teaching (such as active learning, blended and online courses, curriculum redesign, and outcome-based education) and it leads to improved learning results and increased competitiveness in the education system. Recent studies have shown that institutional support, leadership, technology and professional development have significant effect on shaping pedagogical innovation. But they are almost never referred to as "citizenship actions" or categorization as psychological attributes (academic enthusiasm or scientific temper). The literature surrounding institutional excellence is diverse with a wide range of frameworks and measurements from quality models (e.g., TQM, EFQM) to accreditation indicators (NAAC, rankings, audits) through to bigger concepts of excellence (e.g., leadership, governance, innovation, stakeholder satisfaction, sustainability). Many scholars insist that the excellence of higher education is not only about what graduates do with this world like publications or placements or ranks or rankings it is always about the resilient systems of systems, about a culture of ethics and a trust of stakeholders in the entire organization. Integrated models emphasize leadership and strategy as key "enablers," and individuals, processes, and relationships as the way to success. However, within such a paradigm, HR practices and faculty practices are seen as a complement to, rather than a precursor of, excellence. The micro-elements, the psychological and behavioural properties of faculty such as commitment, enthusiasm, scientific temper, citizenship are also known narratively but have seldom been studied in terms of institutional design and in relation to its ecosystems.

The literature comprises multiple, inter-related but separated areas of knowledge: sustainable HRM, psychosocial climate, employee attitudes, OCB (which includes the OCB-I and OCB-O), academic service orientation and pedagogical innovation and institutional excellence. Each of these areas has its own significance sustainable HRM shows that there are systems that protect and nurture human capital, OCB shows how discretionary behaviors support organizational functioning, and work on excellence shows how leadership, governance, and quality processes underpin organisational performance. Yet missing is also a holistic and ecosystem-level perspective on how sustainable HRM, psychosocial environment, employee collaboration, OCB, and faculty academic behaviours are interdependent machinery

in the higher education setting. This is particularly significant in Government-Aided HEIs in Kerala, where governance complexity, resource deficits and quality issues combine. Nevertheless, the literature on sustainable HRM, psychosocial workplace milieu, employee synergy dynamics, OCB-I/OCB-O, academic service orientation and pedagogical innovation, inclusive of Government-Aided HEIs, within Kerala, suffer from various shortcomings. Separate lines of research Green HRM, psychological safety, academic service behaviour, teaching innovation and OCB have been widely studied worldwide yet very little work has been done integrate the strands into a consolidated institutional ecosystem. More importantly, although OCB is well-studied at corporate and organizational levels, its adjunctive dimensions (OCB-I and OCB-O) are not well studied at the educational level, including individual factors involving psychological characteristics like personality, ego state, and work–life balance. Such a literary is biased toward corporate HRM practices, though empirical little has been said on the sustainable HRM ecosystems present in aided higher education (HEs), which depend on unique corporate governance structures and dual authority (government + management). Empirical research has not fully addressed the question of how college teachers undergo sustainable HRM in such institutions, or how these engagements appear as organisational citizenship behaviour and institutional outcomes. In much the same way, institutional excellence literature pays attention towards leadership, quality of teaching or research results but seldom thinks about the psychological issues of faculty, an HR milieu inside the system of education, and organizational dynamics, as a whole when describing an educational organisation's picture. While many studies have proven the effects of OCB on organizational effectiveness, OCB-I and OCB-O were not identified as mediator for HR-related impacts for institutional success. Furthermore, the moderating impact of Institutional Quality Orientation (IQO), which denotes the institution's adherence to quality standards, accreditation culture, and quality governance, was not explicitly studied in relation to the relationship of HRM practices with academic performance. Such a disparity is significant, given that HEIs differ significantly in their quality culture, and such variation probably exacerbates or attenuates the effect of HR practices and OCB on institutional performance. Academic zeal and scientific temper

of teachers, as well as institutional characteristics, are also missing from the picture in ensuring academic greatness. While there is evidence that pedagogical innovation and service orientation are independently related to student achievement and institutional reputation, their combined impact is not yet explored in Kerala higher education especially if moderated by quality norms at the institutions in question.

2.6 Conclusion

The review of literature in this chapter indicates that the institutional success of organizations is based on an integrated ecosystem of sustainable HRM approaches, supportive psychosocial environment, employee synergy dynamics, and practice of OCB-I (Organizational Citizenship Behaviour) and OCB-O (Organizational Citizenship Behaviour). In all of the studies, sustainable HR systems (Green HRM, ESG practices, justice perceptions, empowerment, and supportive leadership) are found to be important factors for employee well being and pro-environmental, prosocial behaviours. A review of literature on psychosocial conditions and synergy among employees also underscores the critical role that social support, collaboration, trust, and work life balance have in facilitating collaborative dynamics and enhancing employee productivity. OCB evidence shows that altruism, courtesy, civic virtue, conscientiousness, and sportsmanship all greatly enhance organisational effectiveness, particularly in educational and service-oriented settings. To these academic service orientation and pedagogical innovation, continuous quality improvement is also required to ensure academic excellence that positively influences student outcomes, research productivity, and institutional reputation. Combined, these literatures show that people, processes, culture, and innovation converge promoting sustainable development and long-term excellence in higher education.

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PART II

METHODOLOGICAL FOUNDATION

Chapter 3: **Research Methodology**

Chapter 3

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Chapter 3

RESEARCH METHODOLOGY

3.1 Introduction

Drawing on the previous literature review, this chapter provided the theoretical foundation bridging Sustainable Human Resource Management (HRM) Ecosystem to Organizational Citizenship Behaviour (OCB-I and OCB-O), Institutional Quality Orientation, and Institutional Excellence in higher education institutions. It also highlighted an important research gap: the presence of no unified empirical model exploring psycho-social, behavioural and institutional determinants of performance in government-aided colleges in Keralam. Filling this gap, the chapter details the methodological approach to explore these intertwined constructs. It demonstrates which research choices were selected and why in terms of the theoretical background and research objective, setting up a problem statement, research questions and objectives, as well as the hypotheses in light of the moderated mediation concept published in the literature. More relevant to Indian higher education, the chapter also elaborates about the study, defines a research design and explains sample size, data collection, instrument preparation, validity and reliability testing, analytic approaches. This establishes a consistent, rigorous, and coherent route to empirically look into sustainable HRM practices and faculty behaviour on the one hand and institutional performance with regards to the proposed conceptual model in this chapter to promote methodological rigor and consistency.

3.2 Statement of the Problem and Research Questions

3.2.1 Statement of the Problem

While Sustainable Human Resource Management (SHRM) has received scholarly attention internationally as a framework of thinking for the integration of economic, social and environmental sustainability with human resource practices (Ehnert, 2009; Kramar, 2014; Stahl et al., 2020), the research on how these systems are experienced by faculty working in government-aided institutions of higher

education has been particularly sparse in Keralam. Sustainable HRM practices supportive leadership, justice, empowerment, recognition, ethical governance are some of the others, and these have important effects on employee'swell-being, engagement and extra-role behaviours (Al-Tarawneh et al., 2022; De Prins et al., 2014; Guerci & Carollo, 2016). However, there is a great absence on how such systems are being used and informed in government-aided colleges in Keralam having different socio cultural norms and dual administrative structures. There has been a research vacuum because faculty well being, job satisfaction, and psycho social climate are closely tied to academic performance, service delivery, and identity of institutions (Chhabra & Sharma, 2014; Ghosh et al., 2018), resulting in a study gap.

Moreover, while Organizational Citizenship Behaviour (OCB) is regarded as a barometer of positive organizational climates and effective HRM practices (Jena & Pradhan, 2018; Organ, 1988; Podsakoff et al., 2000), studies conducted on the higher education system in Keralam have yet to separate OCB-I (helping and courtesy towards individuals) from OCB-O (civic virtue, sportsmanship, and conscientiousness intended to serve the institution). There is overwhelming body of theoretical and empirical evidence to indicate that both OCB-I and OCB-O are indeed outcome of distinct antecedents in personality characteristics, emotions, trust of the other partner with other people, and demographics (Chiaburu & Harrison 2008; Li & Bamberger 2022; Rai & Maheshwari 2022), but a paucity of findings persists. The absence of empirical findings on the influence of faculty's psychological dispositions and family conditions on OCB of these two forms of OCB in college teachers in Keralam is a significant void in the behavioural/HRM literature. Furthermore, despite evidence that long run sustainable HRM climates foster citizenship behavioural change, innovation and organisational learning (George et al., 2023; Iqbal & Ahmad, 2023) fewer studies have explored how particular components of the Sustainable HRM Ecosystem including job autonomy, fairness, transformational leadership, recognition and organizational climate affect between OCB-I and OCB-O among faculty at government-aided colleges. This difference is notable as these discretionary acts are documented to influence collegial activities, pedagogical innovation and overall institutional functioning (Chughtai

& Buckley, 2011, Srivastava & Bedi, 2023). Thus the absence of the component-level investigation linking sustainable HRM with double-dimensional OCB creates a significant empirical and conceptual gap. Additionally, there is limited data on how faculty characteristics i.e. academic vigour, scientific disposition, professional dedication, and organizational ability impact the higher end of institution excellence.

Although EFQM (2012), TQM (2016), etc., focus on the role of human capital (learning culture, innovation and service oriented) (EFQM, 2012; Sarma & Nayak, 2020), empirical research in Keralam on how faculty attitudes affect institutional systems that foster academic service, pedagogical innovation (for example, OCB's aim is to help improve stakeholder satisfaction) and stakeholders is limited. It appears from existing literature that factors such as faculty involvement, discretionary engagement, academic motivational nature and organizational culture could influence the institutions success (Al-Hosani & Sofian, 2015; Prasad & Tata, 2021), while not sufficient empirical systematic studies have been gathered in the situation of Keralam's aided colleges.

Second, big gaps stand where there is still no comprehensive, cohesive methodology and it simultaneously evaluates (a) elements of sustainable HRM ecosystem, (b) psychosocial workplace environment, (c) synergy dynamics of an employee, (d) dimensions of OCB-I and OCB-O and (e) outcomes for institutional excellence. There are no ongoing studies that explore synergistic mediations of OCB-I and OCB-O and the relationship between sustainable HRM practices and institutional success and whether the relations between them is modulated by the degree of IQO. Social Exchange Theory (Blau, 1964), Norm of Reciprocity (Gouldner, 1960) and Organizational Justice Theory (Greenberg, 1987) provide theoretical and empirical support for such multi-layer interactions, but the presence of a moderated mediation model in Keralam's government-supported higher education sector is missing and hence is an important theoretical, empirical and practical research vacuum that must be explored extensively.

3.2.2 Research Questions

The research questions are rooted in the conceptual foundations, theoretical insights, and gaps identified in the literature review. They guide the empirical study

by examining the interactions among sustainable HRM, faculty attributes, and organizational behaviours, and how these factors influence institutional excellence in Keralam's higher education sector.

1) To what extent do the core components of the Sustainable HRM ecosystem exist in Government Aided higher educational institutions in Keralam?
2) How does the factors of Psychosocial Workplace Milieu vary across institutional variables such as NAAC accreditation grade, type of management (minority and non-minority), autonomous status, and institutional gender composition?
3) How does the elements of Employee Synergising Dynamics vary based on a combination of faculty-level variables (gender, age, teaching experience and monthly income) and institutional characteristics (NAAC grade, stream of study and type of management)?
4) How is organisational citizenship behaviour at the individual and organisational levels associated with personality traits, work–life balance, scientific temper, academic enthusiasm, and organisational characteristics among faculty of government aided higher educational institutions in Keralam?
5) How does institutional excellence vary among government aided colleges in Keralam when assessed through multidimensional indicators such as academic service orientation and pedagogical innovation?
6) How does the sustainable human resource management ecosystem influence institutional excellence in government aided higher educational institutions in Keralam through the mediating role of organisational citizenship behaviour at the individual and organisational levels, and how is this indirect relationship moderated by faculty academic enthusiasm?

3.3 Objectives of the Study

The following objectives are designed to systematically fill the conceptual and empirical gaps identified in the literature on Sustainable HRM, OCB, and Institutional Excellence in Keralam's government-aided higher education institutions. They offer a

structured framework for exploring faculty experiences, behavioural dynamics, institutional characteristics, and the mechanisms that support the proposed moderated mediation model.

1) To examine the sustainable Human Resource Management ecosystem within Government Aided higher educational institutions in Keralam, as experienced by college teachers.
2) To investigate the Organizational Citizenship Behaviour – Individual and Organization (OCB-I and O), and its influence by personality traits, scientific temper, academic enthusiasm and organizational characteristics of college teachers in Keralam.
3) To examine the performance excellence among government aided colleges in Keralam using multidimensional indicators.
4) To develop a comprehensive research model for Govt. Aided HEIs in Keralam by exploring the mediating role of OCB-I and O and moderating effect of academic enthusiasm of faculties in the relationship between sustainable HRM ecosystem and intuitional excellence using moderated mediation approach.

3.4 Hypotheses of the Study

The hypotheses outlined below are founded on the conceptual model and literature review from previous chapters. They are intended to examine the structural relationships among Sustainable HRM, OCB-I, OCB-O, faculty characteristics, and Institutional Excellence. Together, they facilitate empirical testing of the moderated mediation model.

H_{01}: There is no significant difference between factors of sustainable HRM ecosystem and faculty-level and institutional variables in Govt. aided higher educational institutions in Keralam.

H_{02}: There is no significant difference between Organizational Citizenship Behaviour – Individual and Organization (OCB-I and O), and personality traits, scientific temper, academic enthusiasm and organizational characteristics of college teachers in Keralam.

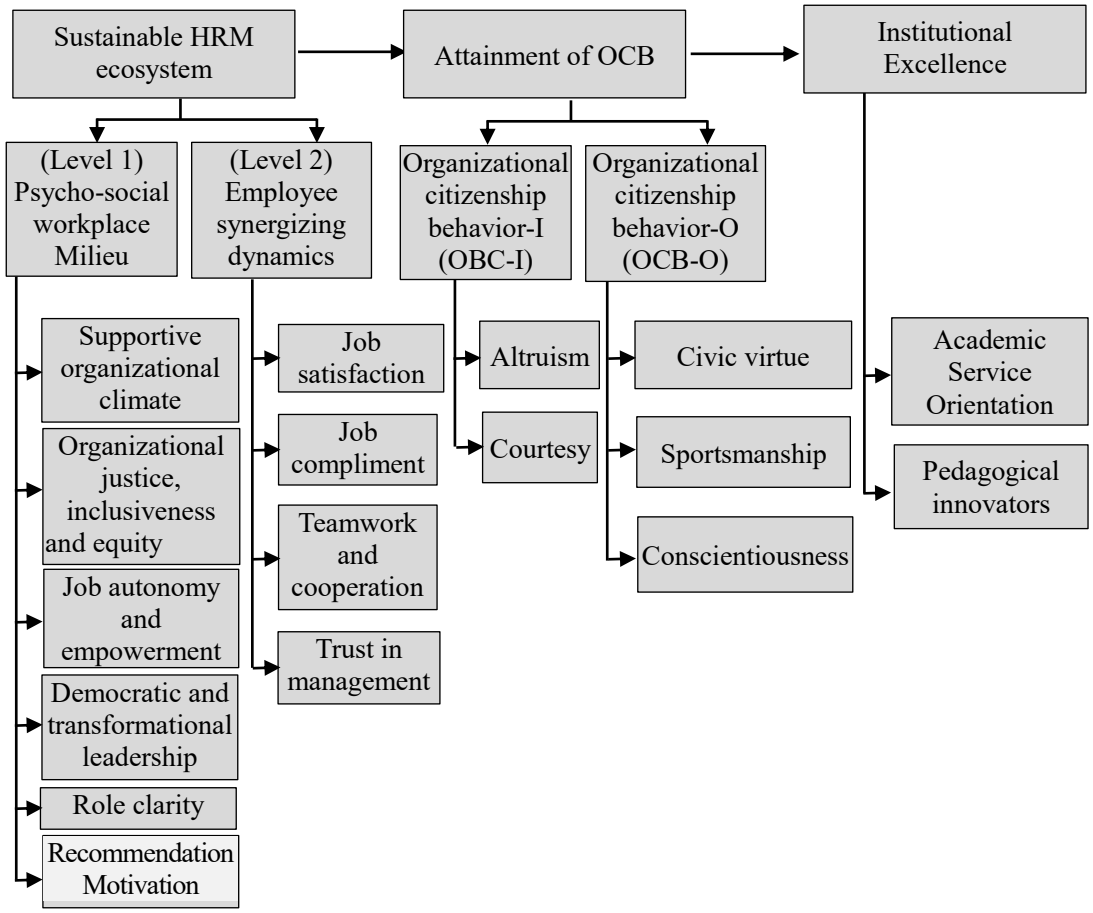
H_{03}: There is no significant difference between factors of institutional excellence and multidimensional demographics and intuitional properties of college teachers in Keralam.

H_{04}: The sustainable human resource management ecosystem has a significant positive indirect effect on institutional excellence in government aided higher educational institutions in Keralam through organisational citizenship behaviour at the individual and organisational levels, and this mediated relationship is significantly moderated by faculty academic enthusiasm such that the indirect effect becomes stronger at higher levels of academic enthusiasm.

3.5 Hypothesised Conceptual Model

Figure 3.1

Hyposthesised Conceptual Model



3.6 Significance of the Study

By providing empirical insights into the Sustainable HRM ecosystem, this study fills an important gap in both national and regional literature. Under their governance, these institutions are both regulated by state law and run by private management. Aided colleges' role in Keralam education system is strategic oriented, yet academic attention on their sustainability appears to be lacking. This gap is filled by examining systematically how HRM factors, which are supportive organizational climate, organizational justice, inclusiveness, empowerment, leadership, role clarity, and recognition, collectively, serve the purpose of creating a sustainable HR ecosystem, while enhancing academic staff well-being, engagement, and overall institutional development. Also, the study contributes to the evidence base by studying the behavioural levers of OCB as personality variables and demographic variables that influence teacher willingness to take voluntary (non-contractual) actions (both positive for individuals as in OCB-I and positive for the institution, OCB-O). Such behavioural implications are especially critical in higher education where faculty-led discretionary practices such as mentoring, collaboration in the classroom, participatory governance, and student encouragement contribute much to supporting the success of the institution but are often underappreciated in structured workload assessments. By linking psychological traits with OCB, this study provides insight into how teachers are naturally inclined towards their extra-role behaviours. This research highlights the fundamental elements of a Sustainable HRM ecosystem that encourage OCB. By empirically examining the impact of different HR practices and workplace conditions on OCB-I and OCB-O, it enables institutions to identify which HRM variables (fairness, autonomy, inclusivity, transformational leadership, recognition, etc.) most effectively predict positive faculty behaviours. This is all the more important for Keralam's aided colleges, where resource constraints and organizational hurdles compel a deliberate prioritization of HR initiatives. It has serious implications for institutional excellence, a specific objective at the point of any institution that endeavours to improve accreditation, reputation, stakeholder satisfaction, quality academic service (e.g., from a pedagogical innovation perspective). Studying the impact of faculty qualities and OCB behaviours on institutional

excellence, the research highlights the fundamental need for human resources to drive academic quality above policies or infrastructure. These insights help institutional leaders formulate initiatives for enhancing faculty engagement, encouraging a stronger organizational culture, and driving performance metrics assessed by accrediting organizations, such as NAAC.

Building on the above, the study's importance is further amplified by developing a holistic and integrated model connecting Sustainable HRM systems, OCB, and institutional excellence. There are theoretical and practical benefits to this framework: it brings together literature on sustainability oriented HRM in both behavioural organisational theory and institutional performance models; in the practical sense, it provides a diagnostic and strategic resource for administrators and policymakers to improve HR systems, enhance faculty motivation, and engender academic excellence. Situated within Keralam's aided college space the research provides sector-specific considerations with instant applicability while also laying new avenues for HRM research in India and beyond.

3.7 Scope of the Study

This research systematically investigates Sustainable Human Resource Management (HRM) systems in the government-aided higher education institutions of Keralam with attention paid to the faculty community which serves as a crucial part of these institutions' intellectual and operational core. Acknowledging that aided colleges operate in a special administrative environment characterised by governance on a dual level, with the state and management, the study seeks to grasp how sustainable HRM approaches are developed, implemented and understood within this special institutional context. Organizational Citizenship Behaviour (OCB) of college teachers was explored, paying particular attention to OCB-Individual (OCB-I) which is about helping and supporting one's colleagues, and OCB-Organizational (OCB-O) which supports the functioning and the institution's reputation.

It also investigates the influence of teachers' personality traits and demographic factors on these two OCB types with a view to providing broad insight into the

personal and ecological variables that shape extra role behaviours in educational establishments. In the Sustainable HRM context, the research presents a thorough analysis and evaluation on the central elements of the Sustainable HRM ecosystem: supportive organisational climate, justice and fairness, inclusion and equity, job autonomy, empowerment techniques, democratic and transformational leadership, role clarity, recognition and motivation.

The research also investigate the influence of each of the HRM areas in generating OCB-I and OCB-O by staff members. This reduces the analytical scope of the study to HRM factors that are actionable, meaningful, measurable, and closely related to, on some level, HR policy-making in higher education, making the study more analytical. Additionally, its scope expands to studying the effect of faculty characteristics and dispositions (e.g. academic enthusiasm, scientific thinking, professional attitude) on institutional excellence, as well as their implications. "Institutional excellence" is broad, encompassing academic service orientation, pedagogical innovation, internal quality culture, governance responsiveness, and stakeholder satisfaction.

The research examines in this manner to view individual-level behaviour (OCB), organisational systems (Sustainable HRM) and institutional outcomes (excellence) as interconnected areas in the greater ecosystem framework.

From a methodological perspective, the study aims to establish and justify an established conceptual base explaining how OCB mediates the impact of Sustainable HRM practices on institutional excellence. It also captures the moderation of institutional quality orientation. Having two sides to it this allows the study to move beyond purely correlational to also provide explanatory. Thus, it contributes to a better theoretical framework as well as useful practice recommendations for improving institutional development. Geographically, the study focuses on aided colleges in Keralam, though it is anticipated that this research will provide a conceptual generalisation for other similar educational systems in India and developing countries. The demographic sample of respondents is confined to full-time faculty to guarantee reliability in capturing findings of long-term HRM

experiences and organisational behaviour. In totality the scope of the study is systematically wide-ranging but cautiously focused, which permits an in-depth examination of the interaction of sustainable HRM structures with behavioural and institutional variables which affect the overall effectiveness and quality of the aided college system at Keralam.

3.8 Research Methodology

The research titled "OCB-Driven Human Capital Synergy Model for Higher Education Institutions in Kerala" applies a descriptive and explanatory research methodology. It started with a research literature study to determine the research gap, then developed goals and hypotheses. Sample size determination was based on the purpose of the study and on the planned statistical analyses. It used techniques according to the research issue, data availability, type of data required and cost limitation. The research instrument was designed, the pilot sample was selected, and a pilot study was conducted. For reliability and validity, items on the instrument used previously validated scales. The final questionnaire was forwarded to teachers at aided colleges in five Deputy Directorates of Collegiate Education in Kerala. Data were analysed for normality, outliers and missing data. The input matrices were selected, model estimates were evaluated, and goodness-of-fit indices were examined to check if the model was fitting. Results were presented and reported as intended according to the objectives of the study.

3.8.1 Research Design

a) Descriptive Research Design

- The study adopts a descriptive research orientation to examine the existing conditions within Government-Aided Higher Educational Institutions in Keralam.
- This phase focuses on documenting the prevailing sustainable Human Resource Management ecosystem, the levels of Organizational Citizenship Behaviour at both the individual (OCB-I) and organizational (OCB-O) levels, and the status of academic excellence.

- The descriptive approach captures the experiences, behavioural patterns, and institutional characteristics of college teachers in their natural work environment, without any manipulation or control of variables.

b) Explanatory Research Design

- The study further adopts an explanatory research orientation to explain the relationships among the key constructs identified in the descriptive phase.
- This component seeks to understand how and why the sustainable Human Resource Management ecosystem influences institutional excellence.
- The explanatory analysis examines the mediating roles of OCB-I and OCB-O and the moderating effect of academic enthusiasm among faculty members.
- A moderated serial mediation approach is employed to analyse the underlying mechanisms and conditional effects linking sustainable HRM practices and academic excellence.

By combining descriptive insights with explanatory analysis, the study justifies the use of an integrated descriptive–explanatory research design.

3.8.2 Sources of Data

The data for this study were collected from both primary and secondary sources to ensure thorough coverage of the research goals. Primary data were obtained through direct responses from aided college teachers in Kerala, while secondary data were gathered from relevant academic literature, institutional reports, and government publications to provide contextual and theoretical support for the study.

3.8.2.1 Primary Data

Primary data for this study were gathered from aided college teachers in Keralam through a structured questionnaire. The questionnaire aimed to collect firsthand information on Organizational Citizenship Behaviour and human capital synergy among teachers across the five Deputy Directorates of Collegiate Education in the State. It was administered to the chosen respondents after securing the

necessary permissions. Efforts were made to ensure voluntary participation, confidentiality of responses, and the accuracy of the collected data.

3.8.2.2 Secondary Data

Secondary data were gathered from both published and unpublished sources related to the study, such as academic journals, books, research reports, doctoral theses, conference proceedings, and official publications from government and educational authorities. These data mainly served to clarify the concepts and theories of Organizational Citizenship Behaviour and human capital synergy, identify research gaps, define the study's goals and hypotheses, and aid in interpreting and discussing the empirical results.

3.8.3 Questionnaire Construction

The present study uses a structured questionnaire to systematically capture faculty perceptions of workplace conditions, collaborative dynamics, Organizational Citizenship Behaviour, and institutional excellence in higher education institutions.

Section I: Psychological Workplace Milieu

- This section examines the psychological and environmental conditions experienced by faculty members in their workplace.
- It measures key aspects such as organizational climate, academic autonomy, leadership support, and recognition of faculty contributions.
- The section captures how a supportive and empowering work environment shapes positive attitudes and proactive academic behaviours.

Section II: Employee Synergizing Dynamics

- This section focuses on the collaborative and relational dynamics among faculty members within the institution.
- It assesses job satisfaction, organizational commitment, teamwork, and trust in management.
- The purpose is to understand how synergy among employees enhances cooperation, engagement, and collective academic performance.

Section III: Attainment of Organizational Citizenship Behaviour

- This section evaluates discretionary behaviours that go beyond formal role expectations.
- It covers both individual-level Organizational Citizenship Behaviour (OCB-I) and organizational-level Organizational Citizenship Behaviour (OCB-O).
- Key dimensions include altruism, civic virtue, conscientiousness, and voluntary participation in institutional activities.

Section IV: Institutional Excellence

- This section measures outcomes related to institutional quality and academic excellence.
- It focuses on academic service orientation and pedagogical innovation.
- The items reflect faculty perceptions of the institution's commitment to continuous improvement and excellence in teaching and learning.

Section V: Socio-demographic Profile

- This section collects essential background information about the respondents.
- It includes personal and professional details such as teaching experience and academic designation.
- Institutional characteristics, including accreditation status and availability of ICT-enabled classrooms, are also captured to provide contextual understanding.

Ethical Safeguards

- Participation in the study was voluntary and based on informed consent.
- Confidentiality and anonymity of responses were strictly ensured.
- The ethical guidelines were followed to protect respondents and maintain research integrity.

The following table shows the variables with their supportive citation

Table 3.1

Variables of the Study

Variable	Construct Description	Supportive Citation
Psychosocial workplace milieu		
Supportive Organisational Climate (SOC)	Measures the organizational environment supporting growth, communication, and job satisfaction.	Eisenberger et al. (2002), Perceived organizational support and employee diligence, commitment, and innovation.
Organisational Justice, Inclusiveness, and Equity (OJI)	Focuses on fairness, equality, and respect within the organization.	Colquitt et al. (2001), Justice at the millennium: A meta-analytic review.
Job Autonomy and Empowerment (JAE)	Reflects the freedom to make decisions and the trust the institution places in teachers' judgment.	Spreitzer (1995), Psychological empowerment in the workplace: Dimensions, measurement, and validation.
Democratic and Transformational Leadership (DTL)	Captures leadership style that encourages collaboration and inspires faculty through vision.	Bass (1999), Two decades of research and development in transformational leadership.
Role Clarity (RCL)	The clarity of job roles and performance expectations.	Kahn et al. (1964), Role ambiguity and role conflict in organizations.
Recognition and Motivation (RCM)	Measures the acknowledgment of good teaching performance and its impact on motivation.	Locke (1976), The nature and causes of job satisfaction.
Employee synergizing dynamics		
Job Satisfaction (JBS)	Reflects the satisfaction with the teaching position, role, and work environment.	Locke (1976), The nature and causes of job satisfaction.
Job Commitment (JBC)	Commitment to the institution and its goals, including emotional attachment.	Meyer and Allen (1991), A three-component conceptualization of organizational commitment.
Teamwork and Cooperation (TAC)	Collaboration with colleagues and valuing team efforts.	Tjosvold (2008), The conflict-positive organization: It depends upon us.
Trust in Management (TIM)	Confidence in the management team and transparency of decisions.	Dirks and Ferrin (2002), Trust in leadership: Meta-analytic findings and implications for research and practice.

Variable	Construct Description	Supportive Citation
Organisational Citizenship Behaviour - Individual		
Altruism (ALT)	Willingness to help others with their tasks and responsibilities beyond the formal role.	Organ (1988), Organizational Citizenship Behavior: The Good Soldier Syndrome.
Courtesy (CRT)	Ensuring actions do not inconvenience others and communicating proactively to avoid issues.	Organ (1988), Organizational Citizenship Behavior: The Good Soldier Syndrome.
Organisational Citizenship Behaviour - Organisational		
Civic Virtue (CVV)	Active participation in institutional events and staying informed about institutional matters.	Podsakoff et al. (2000), Organizational citizenship behaviors: A critical review of the theoretical and empirical literature.
Sportsmanship (SPM)	Maintaining a positive attitude even in difficult situations.	Podsakoff et al. (2000), Organizational citizenship behaviors: A critical review of the theoretical and empirical literature.
Conscientiousness (CON)	Going beyond expectations and adhering to institutional rules.	Podsakoff et al. (2000), Organizational citizenship behaviors: A critical review of the theoretical and empirical literature.
Institutional Excellence		
Academic Service Orientation (ASO)	Commitment to high-quality education and student support.	Hattie et al. (1996), The power of feedback.
Pedagogical Innovation (PDI)	Support for innovative and student-centered teaching methods.	Biggs (2003), Teaching for quality learning at university.
Scientific Temper		
Scientific Temper	Emphasis on rational thinking, critical evaluation, and openness to multiple perspectives.	Lifton (1986), The Broken Connection: On Death and the Continuity of Life.
Personality Traits		
Agreeableness	Maintaining harmonious relationships with students and colleagues.	Judge et al. (2002), Personality and leadership: A qualitative and quantitative review.
Emotional Stability	Handling classroom disruptions and challenges without excessive stress.	Judge et al. (2002), Personality and leadership: A qualitative and quantitative review.
Proactive Personality	Taking initiative in organizing academic and departmental events.	Judge et al. (2002), Personality and leadership: A qualitative and quantitative review.

Variable	Construct Description	Supportive Citation
Openness to Experience	Willingness to experiment with new teaching strategies and technologies.	Judge et al. (2002), Personality and leadership: A qualitative and quantitative review.
Humility	Acceptance of constructive feedback for improving teaching practices.	Judge et al. (2002), Personality and leadership: A qualitative and quantitative review.
Academic Enthusiasm		
Passion for Teaching	Enthusiasm and motivation for preparing and delivering academic content.	Hattie (2009), Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement.
Willingness to Engage	Active participation in seminars, workshops, or faculty development programs.	Tinto (1993), Leaving College: Rethinking the Causes and Cures of Student Attrition.
Research Involvement	Engagement in academic research and publishing work.	Hattie (2009), Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement.
Mentoring Attitude	Willingness to guide students beyond the classroom in academic activities.	Tinto (1993), Leaving College: Rethinking the Causes and Cures of Student Attrition.
Knowledge Sharing	Willingness to share academic resources and ideas with peers and students.	Tinto (1993), Leaving College: Rethinking the Causes and Cures of Student Attrition.

3.8.4 Pilot Study

To evaluate the reliability and validity of the research instrument and assess the study's feasibility, a pilot study was carried out. Data were gathered from sixty college teachers. The reliability of the data was verified using Cronbach's alpha test (Cronbach, 1955), a widely used measure of internal consistency reliability. It indicates how closely related a group of items is as a whole. This is mainly applicable for questionnaires with multiple Likert-scale questions. Cronbach's alpha values range from 0 to 1, with 0.7 to 0.8 generally considered acceptable. According to Nunnally (1967), a Cronbach's Alpha should be above 0.6 to be deemed reliable.

Table 3.2

Internal Consistency Analysis of the Seventeen Constructs by Cronbach's Alpha for Sample Size 60 Based on Pilot Study

SI No.	Constructs	Cronbach's Alpha	No. of Items	No. of Items deleted
	Psychosocial workplace Milieu			
1	Supportive Organisational Climate	0.766	4	Nil
2	Organisational Justice, Inclusiveness and Equity	0.812	4	Nil
3	Job Autonomy and Empowerment	0.798	4	Nil
4	Democratic and Transformational Leadership	0.839	4	Nil
5	Role Clarity	0.729	4	Nil
6	Recognition and Motivation	0.785	4	Nil
	Employee synergising dynamics			
7	Job Satisfaction	0.874	4	Nil
8	Job Commitment	0.739	4	Nil
9	Teamwork and Cooperation	0.891	4	Nil
10	Trust in Management	0.738	4	Nil
	OCB- Individual			
11	Altruism	0.747	4	Nil
12	Courtesy	0.797	4	Nil
	OCB- Organisational			
13	Civic virtue	0.854	4	Nil
14	Sportsmanship	0.925	4	Nil
15	Conscientiousness	0.914	4	Nil
	Institutional Excellence			
16	Academic service orientation	0.795	4	Nil
17	Pedagogical innovation	0.814	4	Nil

Cronbach's Alpha values of the pilot study exceed the threshold limit, hence it reveals that it is reliable for further data collection.

Testing of normality (Distributional assumption)

In order to determine whether the data follow a normal distribution, the Kolmogorov-Smirnov test was conducted (Sarstedt & Mooi, 2014).

Table 3.3

The Normality of Data by Kolmogorov-Smirnov test

SI. No.	Constructs	Kolmogorov-Smirnov test	
		Statistic	Sig.
	Psychosocial workplace Milieu		
1	Supportive Organisational Climate	0.028	0.200*
2	Organisational Justice, Inclusiveness and Equity	0.034	0.200*
3	Job Autonomy and Empowerment	0.039	0.200*
4	Democratic and Transformational Leadership	0.037	0.200*
5	Role Clarity	0.033	0.200*
6	Recognition and Motivation	0.028	0.200*
	Employee synergising dynamics		
7	Job Satisfaction	0.042	0.200*
8	Job Commitment	0.029	0.200*
9	Teamwork and Cooperation	0.041	0.200*
10	Trust in Management	0.031	0.200*
	OCB- Individual		
11	Altruism	0.028	0.200*
12	Courtesy	0.041	0.200*
	OCB- Organisational		
13	Civic virtue	0.038	0.200*
14	Sportsmanship	0.040	0.200*
15	Conscientiousness	0.037	0.200*
	Institutional Excellence		
16	Academic service orientation	0.032	0.200*
17	Pedagogical innovation	0.041	0.200*

** This is a lower bound of the true significance*

The results indicate that all constructs, including those in the Psycho-social Workplace Milieu, Employee Synergising Dynamics, Organizational Citizenship Behavior (OCB) at both the individual and organizational levels, and Institutional Excellence, show p-values of 0.200 or greater, suggesting that the data do not significantly deviate from a normal distribution. This is supported by the fact that the p-value of 0.200 is well above the commonly used threshold of 0.05, indicating that all variables pass the normality test (Kline, 2011; Tabachnick & Fidell, 2013).

Harman's Single Factor Test: Assessment of Common Method Bias

The researcher conducted Harman's Single Factor Test to examine the presence of common method bias (CMB) in the study. This method involves an exploratory factor analysis where all measurement items are loaded onto a single factor to assess the amount of variance explained.

Table 3.4

Harman's Single Factor Test: Assessment of Common Method Bias

Purpose of Test	Method Used	Result Obtained	Threshold Value	Inference
To assess common method bias (CMB)	Harman's single factor test	40.38%	≤ 50%	Common method bias does not pose a significant issue.

The result showed that the single factor accounted for 40.38% of the total variance, which is below the commonly accepted threshold of 50% (Podsakoff et al., 2003; Podsakoff & Organ, 1986). Therefore, it can be inferred that common method bias is not a significant concern in this study, ensuring the integrity of the measurement model.

3.8.5 Sampling Strategy

3.8.5.1 Sample

Individual teachers from aided colleges are the samples for the study.

3.8.5.2 Sampling Methods and Techniques

The detailed sampling process is outlined below:

Stage 1: Population and Data Collection

The target population for this study consists of 7,324 aided college teachers working across various Government-Aided Higher Educational Institutions in Keralam (data shown in the appendix). The data was collected from the Higher Education Council of Keralam, which maintains a comprehensive list of all faculty members across these institutions. The data was arranged by the five Deputy Directorates, ensuring thorough coverage of the entire population.

Table 3.5

Details of Aided College Teachers

Zone	Total No. of Colleges	Total No. of Teachers
Kollam	33	1639
Kottayam	37	1703
Ernakulam	30	1419
Thrissur	25	1097
Kozhikode	37	1466
Total	162	7324

Source: Collegiate Education Department, Directorate of Collegiate Education, as per G.O. (R.t) No. 155/2020/HEDN, dated 01.04.2022

Stage 2: Arrangement of Data

Once the list of 7,324 aided college teachers was obtained, the researcher proceeded to collect the teachers' personal information. The data were then arranged alphabetically by teacher name, ensuring a systematic, organized format for the subsequent random selection process.

Stage 3: Determining Sample Size

The sample size was calculated based on the standard deviation obtained from a pilot study involving 60 respondents. To ensure that the standard error remained within acceptable bounds, the calculation was performed at a 5% significance level. The formula used was: $n = (ZS/E)^2$ (Israel, 2009),where *Z* is the z-value for a 95% confidence level (1.96), *S* is the standard deviation from the pilot sample (0.571), and *E* is the permissible margin of error (0.05). Substituting the values, the estimated sample size was 564.48, and the researcher proceeded to collect 564 responses for the main study.

Stage 4: Selection of Sample

To ensure the randomness and unbiased nature of the sample, the random number method of Simple Random Sampling under probability sampling techniques was employed. Initially, a comprehensive sampling frame was prepared by compiling an alphabetically arranged list of college teachers working in Government-Aided Higher Educational Institutions in Keralam. Each teacher in the population was assigned a unique identification number to facilitate the random selection process.

Random numbers were then generated using the online random number generator available at www.random.org, a widely accepted and transparent tool for statistical randomization. The generated random numbers were matched with the corresponding identification numbers in the sampling frame to select respondents. This procedure ensured that every teacher in the population had an equal and independent probability of being included in the sample, thereby eliminating researcher discretion and minimizing selection bias.

A total of 564 random numbers were generated and used to identify the respondents for the study. The use of a computerized random number generation process strengthened the objectivity, representativeness, and methodological rigor of the sampling procedure, making it appropriate for inferential statistical analysis and enhancing the generalizability of the study findings.

Stage 5: Contacting the Respondents

After 564 respondents were identified through random number generation, the researcher personally contacted each individual to invite them to participate in the study. This step was essential for explaining the purpose of the research and securing their consent to participate.

Stage 6: Handling Non-Responses

During data collection, some respondents declined to participate in the study. To address this issue and maintain the required sample size, the researcher generated additional random numbers using www.random.org. This process ensured that a sufficient number of respondents were selected to meet the final sample size of 564. The newly generated random numbers were used to identify replacement respondents, and data were subsequently collected from those individuals who were willing to participate.

Stage 7: Final Data Collection

After addressing the issue of non-responses, the researcher successfully collected the necessary data from the final group of 564 respondents. This data was then analysed to explore the constructs and relationships outlined in the study.

Table 3.6

Summary of the Sampling Process Adopted for the Study

Stage	Sampling Component	Description
Stage 1	Population Identification	The target population comprised 7,324 aided college teachers working in Government-Aided Higher Educational Institutions across Keralam. The population data were obtained from the Higher Education Council of Keralam and organized zone-wise under five Deputy Directorates.
Stage 2	Data Organization	The complete list of teachers was systematically arranged in alphabetical order by name to create a clear and unbiased sampling frame for random selection.
Stage 3	Sample Size Determination	The required sample size was statistically determined based on population size and desired precision, resulting in a final sample size of 564 respondents to ensure representativeness and statistical adequacy.
Stage 4	Sample Selection Method	The random number method of Simple Random Sampling under probability sampling techniques was employed. Each teacher was assigned a unique identification number, and 564 random numbers were generated using www.random.org to select respondents.
Stage 5	Respondent Contact	Selected respondents were personally contacted by the researcher to explain the purpose of the study and to obtain informed consent for participation.
Stage 6	Management of Non-Responses	In cases of non-participation, additional random numbers were generated using the same randomization procedure to identify replacement respondents, ensuring maintenance of the required sample size.
Stage 7	Final Data Collection	Data were successfully collected from the final set of 564 respondents after addressing non-responses, forming the basis for subsequent analysis and interpretation.

3.8.5.3 Data Collection Technique

The researcher personally collected the data for this study using a pretested questionnaire through a survey. This method involved direct interaction with respondents, enabling clarification of any doubts and ensuring responses were accurate and complete. Prior to administering the questionnaire, all respondents gave informed consent. They were briefed on the study's purpose, their participation was voluntary, and

they could withdraw at any time without penalty. Respondents were also assured of the confidentiality of their responses and that no personal identifiers would be disclosed. This combination of a validated tool, personalized data collection, and ethical consent procedures helped ensure the data's reliability, validity, and ethical standards.

Table 3.7

Statistical Tools and Software Packages Used for Data Analysis

Category	Statistical Technique	Purpose of Use	Analytical Level	Software Used	Procedure / Interpretation Basis
Descriptive Analysis	Mean and Standard Deviation	Summarize responses and variability	Construct level	IBM SPSS 27	Average and dispersion computation
Benchmark Testing	One Sample t Test	Test mean against neutral value	Construct level	IBM SPSS 27	Mean vs test value comparison
Group Comparison	Independent Samples t Test	Compare two groups	Group level	IBM SPSS 27	Mean difference significance
Multi Group Testing	One Way ANOVA + Tukey Post Hoc	Compare more than two groups	Multi group level	IBM SPSS 27	Variance and pairwise comparison
Interaction Testing	Two Way ANOVA	Examine interaction effects	Factor interaction level	IBM SPSS 27	Factorial variance testing
Controlled Testing	ANCOVA	Compare groups controlling covariate	Adjusted group level	IBM SPSS 27	Covariate adjusted comparison
Multivariate Testing	MANOVA	Test multiple outcomes simultaneously	Multivariate level	IBM SPSS 27	Multivariate F tests
Multivariate Control	MANCOVA	Multivariate test with covariate	Adjusted multivariate	IBM SPSS 27	Adjusted multivariate testing
Classification	Quartile Percentage Analysis	Classify low moderate high levels	Distribution level	SPSS / Excel	Quartile cut off classification
Association Testing	Chi Square Test	Test association of categorical variables	Relationship level	IBM SPSS 27	Cross tabulation significance

Category	Statistical Technique	Purpose of Use	Analytical Level	Software Used	Procedure / Interpretation Basis
Pattern Exploration	Correspondence Analysis	Explore categorical relationships	Pattern level	IBM SPSS 27	Dimensional association mapping
Controlled Relation	Partial Correlation	Relationship controlling variables	Controlled level	IBM SPSS 27	Partial coefficient testing
Prediction Modeling	Hierarchical Regression	Test incremental variance explained	Model level	IBM SPSS 27	Stepwise regression comparison
Group Identification	Hierarchical Clustering	Identify number of clusters	Structure level	IBM SPSS 27	Agglomerative clustering
Group Formation	K Means Clustering	Form homogeneous clusters	Cluster level	IBM SPSS 27	Iterative partition clustering
Classification Model	Discriminant Analysis	Classify institutional profiles	Classification level	IBM SPSS 27	Discriminant function estimation
Precision Testing	Confidence Interval Estimation	Check mean precision vs benchmark	Precision level	IBM SPSS 27	Interval comparison
Assumption Checking	Statistical Assumption Tests	Verify statistical assumptions	Diagnostic level	IBM SPSS 27	Tests such as Levene Box M Normality
Structural Modeling	Path Analysis	Test structural relationships	Structural level	AMOS 21	Maximum likelihood estimation
Mediation Testing	Mediation Analysis	Test indirect effects	Indirect level	AMOS 21	Bootstrapping confidence intervals
Moderation Testing	Moderation Analysis	Test interaction effects	Model comparison level	AMOS 21	Chi square difference test
Conditional Testing	Moderated Mediation Analysis	Test conditional indirect effects	Conditional level	AMOS + Excel	Heterogeneity indirect effect testing
Cross Group Testing	Multi Group SEM	Compare structural paths across groups	Cross group level	AMOS 21	Critical ratio difference test

3.9 Chapter Scheme

PART I: CONCEPTUAL AND EMPIRICAL FOUNDATIONS

Chapter 1: Theoretical Framework and Conceptual Foundations

- Background of the Study
- Theoretical Foundations
- Operational Definitions of Key Constructs

Chapter 2: Review of Literature

- Introduction to the Review
- Review of Theoretical Literature
- Research Gaps Identified from Literature
- Summary of Literature Review

PART II: METHODOLOGICAL FOUNDATION

Chapter 3: Research Methodology

- Statement of the problem
- Research question
- Objectives of the study
- Hypotheses of the study
- Hypothesised conceptual model
- Significance of the study
- Scope of the study
- Research methodology
- Research design
- Sources of data collection
- Questionnaire construction
- Pilot study
- Sampling strategy
- Data collection techniques
- Statistical tools and techniques used
- Chapter scheme

PART III: ANALYTICAL FRAMEWORK AND INTERPRETATION

Chapter 4: Analysis of Objective 1

Chapter 5: Analysis of Objective 2

Chapter 6: Analysis of Objective 3

Chapter 7: Analysis of Objective 4

PART IV: SYNTHESIS, FINDINGS, AND STRATEGIC OUTCOMES

Chapter 8: Major Findings and Discussion

- Consolidated Findings Across Objectives

Chapter 9: Implications, Recommendations, and Limitations of the study

- Managerial / Policy / Institutional Recommendations
- Practical Implications
- Limitations of the Study

Chapter 10: Conclusion and Scope for Further Research

- Conclusions of the Study
- Scope for Further Research

*****

PART III

ANALYTICAL FRAMEWORK AND INTERPRETATION

Chapter 4: **Analysis of Objective 1**

Chapter 5: **Analysis of Objective 2**

Chapter 6: **Analysis of Objective 3**

Chapter 7: **Analysis of Objective 4**

Chapter 4

SUSTAINABLE HUMAN RESOURCE MANAGEMENT ECO SYSTEM HIGHER EDUCATIONAL INSTITUTIONS IN KERALA, AS EXPERIENCED BY COLLEGE TEACHERS

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Chapter 4

SUSTAINABLE HUMAN RESOURCE MANAGEMENT ECO SYSTEM HIGHER EDUCATIONAL INSTITUTIONS IN KERALA, AS EXPERIENCED BY COLLEGE TEACHERS

4.1 Introduction

Government-aided higher education institutions in Kerala hold a pivotal position in the academic and socio-cultural framework of state. They blend the stability of public funding with the flexibility of autonomous academic governance, assuring that quality education is accessible to diverse sections of society, including marginalized communities. These institutions are not only centers of teaching and learning but also play a crucial role in research, innovation, and community engagement. Within this framework, the human resource base, comprising college teachers, forms the core of institutional excellence. Contributions of teachers go beyond classroom instruction to include mentoring, curriculum development, administrative responsibilities, and community outreach, all of which influence the ability of institutions to meet global educational standards while addressing local developmental needs.

In recent years, the concept of a sustainable Human Resource Management (HRM) ecosystem has attained prominence as a means to ensure long-term institutional effectiveness and employee well-being. In higher education, sustainability in HRM encompasses policies, practices, and workplace cultures that promote faculty development, work-life balance, equitable career growth, and continuous professional engagement. For government-aided colleges in Kerala, such an ecosystem is shaped by a combination of statutory regulations, institutional policies, and socio-cultural expectations. Examining this ecosystem from the perspective of college teachers gives valuable insights into how sustainable HRM principles are implemented in practice, the challenges faced in maintaining them, and their impact on academic performance, job satisfaction, and institutional reputation.

4.2 Objective Covered in the Chapter

Objective 1: To examine sustainable Human Resource Management Ecosystem within Government -Aided higher education institutions in Kerala, as experienced by college teachers

4.3 Statistical Tools and Software Used

To assess the sustainable Human Resource Management ecosystem within government-aided higher education institutions in Kerala, as experienced by college teachers (Objective 1), both descriptive and inferential statistical methods were applied.

a) Descriptive Statistics

- **Mean** and **Standard Deviation** were assessed to summarize and describe responses of teachers on various dimensions of the sustainable human resource management ecosystem, providing an overall view of central tendencies and variability in perceptions.

b) Inferential Statistics

- **One Sample t-test** was used to examine whether the average perceptions of teachers significantly differed from a neutral benchmark value (3) on selected SHRMES dimensions.
- **Independent t-test** was applied to analyse differences in perceptions of SHRMES between two distinct teacher groups based on selected categorical variables.
- **One-way ANOVA with Post Hoc test (Tukey's HSD)** was employed to compare perceptions across more than two teacher groups, observing specific group-level differences related to sustainable SHRMES practices.

All analyses were conducted using IBM SPSS 27 software to ensure reliable computation and robust interpretation of the results in line with the research objective.

4.4 Constructs Studied

The below mentioned constructs are examined:

Sustainable Human Resource Management Ecosystem – A comprehensive HRM framework that assures faculty well-being, growth, and institutional effectiveness, and in this study, it has been divided into two parts: psycho-social workplace milieu and employee synergising dynamics.

- **Dimension – I: Psycho-social Workplace Milieu** – The social and psychological climate that impacts teachers' motivation, satisfaction, and sense of belonging.
- **Dimension – II: Employee Synergising Dynamics** – The collaborative processes and interactions that strengthen teamwork, knowledge sharing, and joint attainment of institutional goals.

Table 4.1

Level of Significance Notation

Symbol	Interpretation	Range of Significance Value
**	Significant at 1 per cent level	p value from 0.00 up to and including 0.01
*	Significant at 5 per cent level	p value greater than 0.01 and up to and including 0.05
NS	Not significant	p value greater than 0.05

SECTION I

SUSTAINABLE HUMAN RESOURCE MANAGEMENT ECOSYSTEM ANALYSIS

EXTENT OF SUSTAINABLE HUMAN RESOURCE MANAGEMENT ECOSYSTEM

It has divided in to two parts

Part I - Psycho-social workplace Milieu

Part II - Employee Synergising Dynamics

Part I

PSYCHO-SOCIAL WORKPLACE MILIEU

MENTFF

Factors of psycho-social workplace milieu:

1) Supportive Organizational Climate
2) Organizational Justice Inclusiveness and Equity
3) Job Autonomy and Empowerment
4) Democratic and Transformational Leadership
5) Role Clarity
6) Recognition and Motivation

i) Extent of Factors of Psycho-Social Workplace Milieu Within Government -Aided Higher Education Institutions in Kerala

H0.1: There is no significant difference between observed and assumed Factors of Psycho-social workplace Milieu within Government -Aided higher education institutions in Kerala

Table 4.2

One Sample T-Test for Measuring the Significant Difference between Observed and Assumed Factors of Psycho-social Workplace Milieu within Government -Aided Higher Education Institutions in Kerala

Factors of Psycho-social workplace Milieu	Mean	SD	Mean difference (Gap)	t-value	P value	Rank based on mean
Supportive Organizational Climate	3.88	1.12	0.88	18.78	<0.001**	III
Organizational Justice Inclusiveness and Equity	3.40	1.21	0.40	8.00	<0.001**	VI
Job Autonomy and Empowerment	4.03	1.09	1.03	22.34	<0.001**	II
Democratic and Transformational Leadership	3.64	1.06	0.64	14.41	<0.001**	IV
Role Clarity	4.16	0.96	1.16	28.74	<0.001**	I
Recognition and Motivation	3.60	1.16	0.60	12.35	<0.001**	V

**denotes significant at 1% level; Test value-3

The results from the one-sample t-test show significant differences between the observed and assumed sustainable human resource management ecosystem across various factors within government-aided higher education institutions in Kerala. The p-values for all the factors are less than 0.001, stipulating that the differences are statistically significant at the 1% level. The factors analysed include supportive organisational climate (mean = 3.88, SD = 1.12), organisational justice, inclusiveness, and equity (mean = 3.40, SD = 1.21), job autonomy and empowerment (mean = 4.03, SD = 1.09), democratic and transformational leadership (mean = 3.64, SD = 1.06), role clarity (mean = 4.16, SD = 0.96), and recognition and motivation (mean = 3.60, SD = 1.16). All the mean differences (gaps) are positive, recommending that the observed values are higher than the assumed sustainable HRM ecosystem values. The t-values are significantly high, further confirming that these differences are statistically robust. The ranking based on mean values demonstrates role clarity as the highest-ranked factor (mean = 4.16), followed by job autonomy and empowerment (mean = 4.03).

From a practical standpoint, the significant differences between observed and assumed HRM ecosystem values suggests that there is room for improvement in the sustainable HRM practices within these institutions. The role clarity (mean = 4.16) and job autonomy and empowerment (mean = 4.03) are the highest-ranked factors, which imply that the institutions are performing well in these areas but could still point on reinforcing these practices. On the other hand, organisational justice, inclusiveness, and equity (mean = 3.40) and recognition and motivation (mean = 3.60) appear to be the areas with the most significant gaps, emphasizing potential areas for intervention and development. The significant findings suggest that policies aimed at enhancing these specific aspects could improve the overall HRM ecosystem, ultimately leading to a more sustainable and equitable environment in government-aided higher education institutions in Kerala.

The null hypothesis asserts that there is no significant difference between the observed and assumed sustainable HRM ecosystem, is rejected based on the p-values and statistical significance. This stipulates that the sustainable HRM practices in these institutions differ significantly from the assumed values, proposing the need for corrective actions and improvements.

ii) Factors of Psycho-Social Workplace Milieu across Organisational Properties of the Institutions

The following organizational properties factors are used for cross comparison analysis.

a) Types of management

b) Grade in NAAC accreditation

c) Autonomous status

d) Gender composition

a) Sustainable Human Resource Management Ecosystem Across Types of Management

H.O.2.1 There is no significant difference between the minority and non-minority educational institutions in Kerala with regard to the Sustainable Human Resource Management Ecosystem

Table 4.3

Independent T Test for Significant Difference between Minority and Non-minority Educational Institutions in Kerala with Regard to the Sustainable Human Resource Management Ecosystem

Factors of Psycho-social workplace Milieu	Type of Management	Mean	SD	t-value	P value
Supportive Organizational Climate	Aided Minority	3.77	1.18	-4.29	<0.001**
	Aided Non-Minority	4.25	0.77		
Organizational Justice Inclusiveness and Equity	Aided Minority	3.38	1.22	-0.97	0.329^{NS}
	Aided Non-Minority	3.50	1.18		
Job Autonomy and Empowerment	Aided Minority	3.92	1.13	-4.30	<0.001**
	Aided Non-Minority	4.38	0.88		
Democratic and Transformational Leadership	Aided Minority	3.59	1.07	-2.16	0.031*
	Aided Non-Minority	3.81	0.98		
Role Clarity	Aided Minority	4.09	1.02	-3.36	0.001**
	Aided Non-Minority	4.40	0.68		
Recognition and Motivation	Aided Minority	3.52	1.22	-3.17	0.002**
	Aided Non-Minority	3.88	0.91		

**denotes significant at 1% level; *denotes significant at 5% level; ^{NS} denotes Not Significant

The results from the independent t-test show significant differences between minority and non-minority educational institutions in Kerala across various factors of the sustainable human resource management ecosystem. In supportive organizational climate, non-minority institutions scored significantly higher (mean = 4.25) compared to minority institutions (mean = 3.77), with a t-value of -4.29 and a p-value of <0.001. Job autonomy and empowerment also demonstrated a significant difference, with non-minority institutions (mean = 4.38) scoring higher than minority institutions (mean = 3.92), with a t-value of -4.30 and p-value of <0.001. Democratic and transformational leadership also expressed a significant difference, with non-minority institutions (mean = 3.81) having higher scores than minority institutions (mean = 3.59), with a t-value of -2.16 and p-value of 0.031. Yet, for organizational justice, inclusiveness, and equity, there was no significant difference (p = 0.329). Both role clarity and recognition and motivation exhibited significant differences, with non-minority institutions scoring higher than minority institutions in both aspects.

The results specify that non-minority educational institutions have superior HRM practices in areas such as supportive organizational climate, job autonomy and empowerment, and recognition and motivation compared to minority institutions. These differences indicate that non-minority institutions are likely to have more developed systems that foster a positive and empowering work environment. In contrast, minority institutions have lower scores in these areas, suggesting possible gaps in organizational climate, employee autonomy, and recognition practices. The lack of significant difference in organizational justice, inclusiveness, and equity suggests that both types of institutions have same practices in fairness and inclusivity, which is a positive finding shared by both categories.

The null hypothesis asserts that there is no significant difference between minority and non-minority educational institutions in Kerala regarding the sustainable human resource management ecosystem. Based on the results, the null hypothesis is rejected for most factors, including supportive organizational climate, job autonomy and empowerment, democratic and transformational leadership, role clarity, and recognition and motivation, as significant differences were found. This indicates that the type of institution influences HRM practices in these areas. However,

for organizational justice, inclusiveness, and equity, the null hypothesis cannot be rejected since no significant difference was observed. Thus, the findings suggest that minority and non-minority institutions differ in several HRM dimensions, with non-minority institutions generally performing better in these aspects.

b) Sustainable Human Resource Management Ecosystem Across NAAC Grades

H.O.2.1 There is no significant difference among various NAAC grades of the Aided educational institutions in Kerala with regard to the Sustainable Human Resource Management Ecosystem

Table 4.4

One Way ANOVA Test for Significant Difference among Various NAAC Grades of the Aided Educational Institutions in Kerala with Regard to the Sustainable Human Resource Management Ecosystem

Factors of Psycho-social workplace Milieu	NAAC Grade	Mean	SD	F value	P value
Supportive Organizational Climate	Not Accredited	4.28	0.91	14.68	<0.001**
	B Grade	3.72	1.26		
	B+ Grade	3.58	1.16		
	B++ Grade	4.20	0.75		
Organizational Justice Inclusiveness and Equity	Not Accredited	3.68	1.13	17.47	<0.001**
	B Grade	3.76	0.97		
	B+ Grade	2.93	1.32		
	B++ Grade	3.40	1.14		
Job Autonomy and Empowerment	Not Accredited	4.00	1.01	5.96	0.001**
	B Grade	3.96	1.09		
	B+ Grade	3.90	1.23		
	B++ Grade	4.46	0.76		
Democratic and Transformational Leadership	Not Accredited	3.82	0.99	2.82	0.038*
	B Grade	3.56	0.90		
	B+ Grade	3.52	1.18		
	B++ Grade	3.76	1.09		
Role Clarity	Not Accredited	4.26	0.71	9.78	<0.001**
	B Grade	4.28	1.02		
	B+ Grade	3.87	1.03		
	B++ Grade	4.43	0.88		
Recognition and Motivation	Not Accredited	4.06	0.93	13.69	<0.001**
	B Grade	3.64	1.20		
	B+ Grade	3.25	1.22		
	B++ Grade	3.60	1.05		

**denotes significant at 1% level; *denotes significant at 5% level

The one-way ANOVA results indicate significant differences in various factors of the sustainable human resource management ecosystem among different NAAC grades of aided educational institutions in Kerala. For supportive organizational climate, the F-value is 14.68 with a p-value of <0.001, showing a clear difference across NAAC grades. Similarly, organizational justice, inclusiveness, and equity have a significant F-value of 17.47 ($p < 0.001$), as do job autonomy and empowerment ($F = 5.96$, $p = 0.001$), role clarity ($F = 9.78$, $p < 0.001$), and recognition and motivation ($F = 13.69$, $p < 0.001$). Democratic and transformational leadership exhibits a smaller but still significant difference with an F-value of 2.82 and a p-value of 0.038, indicating moderate variation across grades.

These findings suggest that perceptions of HRM factors vary considerably among Not Accredited, B Grade, B+ Grade, and B++ Grade institutions. The largest differences are seen in supportive organizational climate, organizational justice, and recognition and motivation. Not Accredited institutions score higher in supportive organizational climate and recognition and motivation, while B Grade institutions record the highest mean for organizational justice. B++ Grade institutions show comparatively higher scores for job autonomy and empowerment and role clarity. These variations point up the importance of ongoing development and assessment of HRM systems across institutions belonging to different NAAC grades.

The null hypothesis asserts that there is no significant difference among the NAAC grades of aided educational institutions in Kerala regarding the sustainable human resource management ecosystem. The results lead to the rejection of this hypothesis for most factors, as the p-values for supportive organizational climate, organizational justice, job autonomy and empowerment, role clarity, and recognition and motivation are all below 0.05, with several well below 0.001. Although democratic and transformational leadership is significant at the 5% level ($p = 0.038$), the difference is less marked. Overall, the findings affirm that NAAC grade does influence perceptions of HRM practices in these institutions.

Table 4.5

Post Hoc Test for Measuring the Exact Significant Difference among Various NAAC Grades of the Aided Educational Institutions in Kerala with Regard to the Sustainable Human Resource Management Ecosystem

Factors of Psycho-social workplace Milieu	NAAC Grade (I)	NAAC Grade (J)	Mean difference (I-J)	Std. error	P value
Supportive Organizational Climate	Not Accredited (Mean = 4.28)	B Grade (Mean = 3.72)	0.568	0.128	<0.001**
		B+ Grade (Mean = 3.58)	0.701	0.122	<0.001**
		B++ Grade (Mean = 4.20)	0.088	0.147	0.931 NS
	B Grade (Mean = 3.72)	B+ Grade (Mean = 3.58)	0.132	0.118	0.678 NS
		B++ Grade (Mean = 4.20)	-0.480	0.144	0.005**
	B+ Grade (Mean = 3.58)	B++ Grade (Mean = 4.20)	-0.612	0.138	<0.001**
Organizational Justice Inclusiveness and Equity	Not Accredited (Mean = 3.68)	B Grade (Mean = 3.76)	-0.071	0.138	0.956 NS
		B+ Grade (Mean = 2.93)	0.752	0.131	<0.001**
		B++ Grade (Mean = 3.40)	0.288	0.158	0.265 NS
	B Grade (Mean = 3.76)	B+ Grade (Mean = 2.93)	0.823	0.127	<0.001**
		B++ Grade (Mean = 3.40)	0.360	0.155	0.096 NS
	B+ Grade (Mean = 2.93)	B++ Grade (Mean = 3.40)	-0.463	0.149	0.011*
Job Autonomy and Empowerment	Not Accredited (Mean = 4.00)	B Grade (Mean = 3.96)	0.040	0.128	0.990 NS
		B+ Grade (Mean = 3.90)	0.095	0.122	0.863 NS
		B++ Grade (Mean = 4.46)	-0.466	0.147	0.009**
	B Grade (Mean = 3.96)	B+ Grade (Mean = 3.90)	0.055	0.118	0.966 NS
		B++ Grade (Mean = 4.46)	-0.506	0.144	0.003**
	B+ Grade (Mean = 3.90)	B++ Grade (Mean = 4.46)	-0.561	0.138	<0.001**

Factors of Psycho-social workplace Milieu	NAAC Grade (I)	NAAC Grade (J)	Mean difference (I-J)	Std. error	P value
Democratic and Transformational Leadership	Not Accredited (Mean = 3.82)	B Grade (Mean = 3.56)	0.262	0.125	0.156 NS
		B+ Grade (Mean = 3.52)	0.298	0.118	0.060 NS
		B++ Grade (Mean = 3.76)	0.055	0.143	0.980 NS
	B Grade (Mean = 3.56)	B+ Grade (Mean = 3.52)	0.036	0.115	0.989 NS
		B++ Grade (Mean = 3.76)	-0.206	0.140	0.457 NS
	B+ Grade (Mean = 3.52)	B++ Grade (Mean = 3.76)	-0.242	0.135	0.276 NS
Role Clarity	Not Accredited (Mean = 4.26)	B Grade (Mean = 4.28)	-0.013	0.111	0.999 NS
		B+ Grade (Mean = 3.87)	0.393	0.106	0.001**
		B++ Grade (Mean = 4.43)	-0.166	0.128	0.562 NS
	B Grade (Mean = 4.28)	B+ Grade (Mean = 3.87)	0.406	0.102	<0.001**
		B++ Grade (Mean = 4.43)	-0.153	0.125	0.613 NS
	B+ Grade (Mean = 3.87)	B++ Grade (Mean = 4.43)	-0.560	0.120	<0.001**
Recognition and Motivation	Not Accredited (Mean = 4.06)	B Grade (Mean = 3.64)	0.426	0.133	0.008**
		B+ Grade (Mean = 3.25)	0.812	0.127	<0.001**
		B++ Grade (Mean = 3.60)	0.466	0.153	0.013*
	B Grade (Mean = 3.64)	B+ Grade (Mean = 3.25)	0.386	0.123	0.010**
		B++ Grade (Mean = 3.60)	0.040	0.150	0.993 NS
	B+ Grade (Mean = 3.25)	B++ Grade (Mean = 3.60)	-0.346	0.144	0.079NS

**denotes significant at 1% level; *denotes significant at 5% level; NS denotes Not Significant

The post hoc test results display several significant differences between the different NAAC grades across various aspects of the sustainable human resource management ecosystem. For supportive organizational climate, significant differences

were found between Not Accredited and B Grade (mean difference = 0.568, $p < 0.001$) and Not Accredited and B+ Grade (mean difference = 0.701, $p < 0.001$), but not between Not Accredited and B++ Grade ($p = 0.931$). In organizational justice, inclusiveness, and equity, there was a significant difference between B+ Grade and B++ Grade ($p = 0.011$) and between B Grade and B+ Grade ($p < 0.001$), but no significant difference for other pairings. For job autonomy and empowerment, significant differences were found between Not Accredited and B++ Grade ($p = 0.009$), B Grade and B++ Grade ($p = 0.003$), and B+ Grade and B++ Grade ($p < 0.001$), while other comparisons were not significant. In case of democratic and transformational leadership, none of the pairings were significant. In role clarity, significant differences were identified between B+ Grade and B++ Grade ($p < 0.001$) and B Grade and B+ Grade ($p < 0.001$), while others were not significant. Lastly, recognition and motivation showed significant differences for several comparisons, such as between Not Accredited and B+ Grade ($p < 0.001$) and B Grade and B+ Grade ($p = 0.010$), but no significant difference between B Grade and B++ Grade ($p = 0.993$).

In supportive organizational climate, Not Accredited institutions scored significantly greater than both B Grade and B+ Grade institutions, indicating a better perception of organizational climate in these institutions. Not Accredited institutions also showed a comparatively higher score than B++ Grade institutions, though the difference was not significant. For organizational justice, inclusiveness, and equity, the B+ Grade and B++ Grade institutions expressed a significant difference, with B+ Grade institutions perceiving a lower level of equity. Job autonomy and empowerment revealed that B++ Grade institutions scored significantly higher than Not Accredited, B Grade, and B+ Grade institutions, highlighting the stronger sense of autonomy and empowerment in these institutions. In role clarity, both B Grade and B+ Grade institutions showed differences in their comparisons, with B++ Grade institutions having a greater perception of role clarity than B+ Grade institutions. Finally, in recognition and motivation, Not Accredited institutions exhibited a significantly higher mean compared to B+ Grade, B Grade, and B++ Grade institutions, reflecting better recognition and motivational practices in these institutions.

From a practical standpoint, the findings suggest that sustainable HRM practices vary across NAAC grades, especially in areas like supportive organizational climate, recognition and motivation, and role clarity. Not Accredited institutions tend to show better perceptions in supportive organizational climate and recognition and motivation, while B++ Grade institutions show better job autonomy and empowerment and role clarity. On the other hand, B+ Grade institutions record comparatively lower scores in several HRM factors. These findings emphasize the need for institutions across different NAAC grades to focus on enhancing their organizational climate, motivation systems, autonomy, and role clarity according to the specific areas where relatively lower perceptions are observed.

The null hypothesis states that there is no significant difference among various NAAC grades with regard to the sustainable human resource management ecosystem. Based on the results of the post hoc test, the null hypothesis is rejected for several factors, including supportive organizational climate, organizational justice, job autonomy and empowerment, role clarity, and recognition and motivation, where significant differences were identified between the NAAC grades. However, for democratic and transformational leadership, no significant differences were found, meaning the hypothesis cannot be rejected in this case. Overall, the findings suggest that NAAC grade does influence the perception of HRM practices in educational institutions, especially in the areas of organizational climate and motivation systems.

Based on the results and the observations made, it can be inferred that sustainable human resource management practices differ across Not Accredited, B Grade, B+ Grade, and B++ Grade institutions due to variations in their infrastructure, support systems, administrative requirements, and institutional practices. Not Accredited institutions show relatively better perceptions in supportive organizational climate and recognition and motivation. These institutions may provide conditions and support mechanisms that enable teachers to manage their responsibilities effectively. Such institutional conditions can reduce the administrative burden on faculty members, allowing them to focus more on their core teaching responsibilities. As a result, teachers in these institutions may experience a better organizational climate and improved recognition and motivation, leading to higher ratings in these HRM dimensions.

On the other hand, B++ Grade institutions show comparatively stronger perceptions particularly in job autonomy and empowerment and role clarity. Teachers in these institutions may experience relatively greater freedom and flexibility in performing their roles and clearer understanding of their responsibilities. Such institutional conditions may reduce unnecessary bureaucratic interference and provide employees with greater control over their work. Accordingly, these teachers may enjoy more autonomy and clarity in their roles, leading to higher perceptions of HRM practices within the institution.

The institutions belonging to B Grade and B+ Grade categories show varying patterns across the sustainable HRM dimensions. Particularly, B+ Grade institutions record comparatively lower scores in factors such as supportive organizational climate, organizational justice, recognition and motivation, and role clarity. These institutions may face the challenge of balancing administrative workload with the support and facilities required to manage these tasks efficiently. The lack of appropriate HRM systems and support mechanisms may cause additional strain on teachers. This strain results in lower scores in certain HRM factors, as teachers may feel overwhelmed by administrative and clerical duties, leading to a decrease in organizational cohesion and an increase in stress.

To conclude, the different NAAC grade categories demonstrate varying strengths in sustainable human resource management practices. Not Accredited institutions show comparatively better perceptions in supportive organizational climate and recognition and motivation, whereas B++ Grade institutions demonstrate stronger job autonomy and empowerment and role clarity. B Grade and B+ Grade institutions exhibit varying patterns, with B+ Grade institutions recording comparatively lower perceptions in several dimensions. Thus, the results indicate that HRM practices do not follow a simple increasing or decreasing pattern according to NAAC grade but vary depending upon the specific HRM dimension considered.

To improve sustainable human resource management practices, institutions, particularly those showing comparatively lower scores in specific HRM dimensions, should point on enhancing infrastructure, including administrative support systems like digitization of tasks to reduce clerical workload of teachers. Establishing dedicated HR

departments and providing training for both administrative staff and faculty on efficient HRM systems will streamline operations and reduce stress. Additionally, giving faculty more autonomy and reducing bureaucratic barriers can foster a more positive work environment. Specifying recognition and reward systems for faculty contributions beyond teaching, alongside professional development opportunities, will increase motivation and HRM satisfaction. Streamlining NAAC assessment processes by allocating resources for efficient documentation and providing faculty with sufficient training can reduce workload stress. Finally, feedback mechanisms should be established to identify areas for continuous improvement, enabling institutions to refine their HRM systems and ensure long-term sustainability.

c) Sustainable Human Resource Management Ecosystem Across Autonomous Status

H.O.2.1: There is no significant difference between the autonomous and non-autonomous higher educational institutions in Kerala with regard to sustainable human resource management eco system

Table 4.6

Independent T Test for Significant Difference between the Autonomous and Non-autonomous Higher Educational Institutions in Kerala with Regard to Sustainable Human Resource Management Eco System

Factors of Psycho-social workplace Milieu	Autonomous	Mean	SD	t-value	p value
Supportive Organizational Climate	Yes	3.95	1.10	0.89	0.374^{NS}
	No	3.86	1.12		
Organizational Justice Inclusiveness and Equity	Yes	3.59	1.23	2.12	0.034*
	No	3.34	1.20		
Job Autonomy and Empowerment	Yes	3.77	1.15	-3.32	0.001**
	No	4.12	1.06		
Democratic and Transformational Leadership	Yes	3.77	1.15	-3.32	0.001**
	No	4.12	1.06		
Role Clarity	Yes	4.12	0.92	-0.62	0.535^{NS}
	No	4.17	0.97		
Recognition and Motivation	Yes	3.67	1.08	0.81	0.417^{NS}
	No	3.58	1.19		

*denotes significant at 5% level; **denotes significant at 1% level; ^{NS} denotes Not Significant

The independent t-test results disclose statistically significant differences for three out of six factors under the sustainable human resource management ecosystem. Firstly, organizational justice, inclusiveness, and equity demonstrates a significant difference ($t = 2.12$, $p = 0.034$), with autonomous institutions reporting a higher mean ($m= 3.59$) than non-autonomous institutions ($m= 3.34$), indicating more perceived fairness and inclusiveness in autonomous settings. Secondly, both job autonomy and empowerment and democratic and transformational leadership shows significant differences ($t = -3.32$, $p = 0.001$), but interestingly, non-autonomous institutions score higher ($m = 4.12$) than autonomous ones ($m = 3.77$), suggesting that employees in non-autonomous institutions experience higher empowerment and leadership support. The remaining three factors, supportive organizational climate, role clarity, and recognition and motivation, did not exhibit any significant differences ($p > 0.05$), and their mean scores were nearly comparable across both categories.

In other words, these findings imply that autonomous institutions may offer a more just and inclusive HR environment, possibly due to their decentralized decision-making and greater administrative flexibility. Alternatively, the higher levels of job autonomy and leadership presence in non-autonomous institutions could result from stricter procedural systems and well-defined administrative chains that enhance employee clarity and delegation. The absence of significant differences in areas like organizational climate, motivation, and role clarity indicates a shared baseline HRM culture or standardized regulations across higher education sector of Kerala, regardless of autonomy status.

Considering the above results, the null hypothesis which states that there is no significant difference between autonomous and non-autonomous higher educational institutions in Kerala with regard to sustainable human resource management ecosystem is partially rejected. This is because statistically significant differences were identified in three dimensions, organizational justice, job autonomy, and leadership whereas the other three dimensions showed no significant variation. Consequently, the hypothesis is rejected for half of the components and retained for

the rest, suggesting a mixed impact of institutional autonomy on HRM sustainability that warrants further exploration in policy and practice.

d) Sustainable Human Resource Management Ecosystem Across Gender Composition

H.O.2.1: There is no significant difference between higher educational institutions in Kerala with balanced and not balanced gender composition with regard to the sustainable human resource management ecosystem.

Table 4.7

Independent T Test for Significant Difference between Higher Educational Institutions in Kerala with Balanced and not Balanced Gender Composition with Regard to Sustainable Human Resource Management Eco System

Factors of Psycho-social workplace Milieu	Gender Composition	Mean	SD	t-value	p value
Supportive Organizational Climate	Not Balanced	3.94	1.02	2.06	0.040*
	Balanced	3.71	1.36		
Organizational Justice Inclusiveness and Equity	Not Balanced	3.35	1.22	-1.73	0.084^{NS}
	Balanced	3.56	1.17		
Job Autonomy and Empowerment	Not Balanced	4.03	1.09	0.12	0.900^{NS}
	Balanced	4.02	1.09		
Democratic and Transformational Leadership	Not Balanced	4.03	1.09	0.12	0.900^{NS}
	Balanced	4.02	1.09		
Role Clarity	Not Balanced	4.18	0.87	0.78	0.431^{NS}
	Balanced	4.10	1.18		
Recognition and Motivation	Not Balanced	3.60	1.13	-0.02	0.979^{NS}
	Balanced	3.60	1.26		

*denotes significant at 5% level; ^{NS} denotes Not Significant

Among the six factors assessed, only supportive organizational climate shows a statistically significant difference between higher educational institutions with balanced and not balanced gender composition ($t = 2.06$, $p = 0.040$). Institutions with not balanced gender composition exhibited a higher mean score ($m = 3.94$) compared

to those with balanced gender composition (m = 3.71), indicating that employees in gender-imbalanced institutions perceive their organizational climate to be slightly more supportive. For the remaining five factors, organizational justice, job autonomy, leadership, role clarity, and recognition, the p values are all higher than 0.05, indicating no statistically significant differences. The mean scores for these non-significant items are nearly same between the two groups, particularly in job autonomy and leadership (both m = 4.03 vs m = 4.02), reinforcing the lack of meaningful variation.

In short, the only noteworthy insight is that higher educational institutions with an unbalanced gender composition perceive a marginally better organizational climate, which could reflect dynamics such as stronger hierarchical structures or differentiated treatment practices. Yet, this small difference may not translate into major policy implications unless explored further. The absence of significant differences across other key human resource management dimensions stipulates that gender composition, whether balanced or not, does not drastically affect core psycho-social workplace conditions. This specifies that institutions across Kerala may have relatively standardized or gender-neutral HR practices in place that ensure consistency across these dimensions, regardless of male–female workforce ratios.

According to the results, the null hypothesis stating that there is no significant difference between higher educational institutions in Kerala with balanced and not balanced gender composition with regard to the sustainable human resource management ecosystem is partially rejected. It is rejected for one factor, supportive organizational climate, due to the significant p value (0.040), but retained for the other five factors, which exhibit no statistically significant differences. So, the overall conclusion indicates a largely uniform HRM ecosystem across gender compositions, with only minimal variation in perceived organizational climate.

Part II

EMPLOYEE SYNERGIZING DYNAMICS IN THE HIGHER EDUCATIONAL INSTITUTIONS IN KERALA

The following are the factors of employee synergizing dynamics:

1) Job satisfaction
2) Job commitment
3) Teamwork and cooperation
4) Trust in management 7497

i) Extent of Employee Synergizing Dynamics

H0.1: There is no significant difference between observed and assumed factors of employee synergizing dynamics within government -aided higher education institutions in Kerala

Table 4.8

One Sample T-Test for Measuring the Significant Difference between Observed and Assumed Factors of Employee Synergizing Dynamics within Government -Aided Higher Education Institutions in Kerala

Factors of employee synergizing dynamics	Mean	SD	Mean difference (Gap)	t-value	p value	Rank based on mean
Job Satisfaction	3.88	1.23	0.88	17.06	<0.001**	III
Job Commitment	4.25	0.92	1.25	32.11	<0.001**	I
Teamwork and Cooperation	4.11	0.98	1.11	26.90	<0.001**	II
Trust in Management	3.76	1.11	0.76	16.30	<0.001**	IV

**denotes significant at 1% level; Test value-3

The one-sample t-test was conducted to determine whether there is a significant difference between the observed mean scores and the assumed test value of 3 for various factors of employee synergizing dynamics within government-aided higher education institutions in Kerala. All four factors—job satisfaction ($t = 17.06$, $p < 0.001$), job commitment ($t = 32.11$, $p < 0.001$), teamwork and cooperation ($t = 26.90$, $p < 0.001$), and trust in management ($t = 16.30$, $p < 0.001$)—show highly

significant results at the 1% level. The mean differences (gap values) range from 0.76 to 1.25, indicating a positive deviation from the assumed value of 3. Among them, job commitment holds the highest rank based on the mean (4.25), followed by teamwork and cooperation (4.11), job satisfaction (3.88), and trust in management (3.76).

The statistically significant results across all four dimensions imply that employees in government-aided higher education institutions in Kerala experience considerably higher levels of synergy-related dynamics than the assumed standard level. The high mean scores suggest that employees perceive strong commitment, effective teamwork, satisfactory work experiences, and reasonable trust in management practices. These insights reveal a healthy organizational climate that supports collaborative and motivated work culture. Based on these findings, the null hypothesis (H0.1) stating that there is no significant difference between the observed and assumed factors is rejected. This confirms that employee synergizing dynamics are significantly stronger than expected in these institutions.

ii) Employee Synergizing Dynamics Across Socio-Demographic of Employees and Organizational Characteristics

Below are the factors used for comparison

a) Gender
b) Age
c) Experience
d) Stream of study
e) Designation
f) Monthly gross income
g) Domicile
h) NAAC grade
i) Type of management

a) Sustainable Human Resource Management Ecosystem Across Gender

H.O.2.1: There is no significant difference between male and female employees in higher educational institutions in Kerala with regard to the employee synergizing dynamics

Table 4.9

Independent T Test for Significant Difference between Male and Female Employees in Higher Educational Institutions in Kerala with Regard to the Employee Synergizing Dynamics

Factors of employee synergizing dynamics	Gender	Mean	SD	t-value	p value
Job Satisfaction	Male Female	3.66 4.02	1.31 1.16	-3.42	0.001**
Job Commitment	Male Female	3.98 4.41	1.15 0.70	-5.50	<0.001**
Teamwork and Cooperation	Male Female	3.80 4.29	1.12 0.83	-6.00	<0.001**
Trust in Management	Male Female	3.42 3.97	1.28 0.93	-5.85	<0.001**

**denotes significant at 1% level

The independent t-test was conducted to examine whether there is a significant difference between male and female employees in higher educational institutions in Kerala regarding employee synergizing dynamics. All four factors exhibit statistically significant differences at the 1% level. In job satisfaction, females have a higher mean (4.02) compared to males (3.66), with a t-value of -3.42 and a p-value of 0.001. For job commitment, females (mean = 4.41) score significantly greater than males (mean = 3.98), supported by a t-value of -5.50 and a p-value of <0.001. Simultaneously, in teamwork and cooperation, female employees (mean = 4.29) again score higher than males (mean = 3.80), with a t-value of -6.00 and $p < 0.001$. Finally, for trust in management, females (mean = 3.97) outperform males (mean = 3.42), with a t-value of -5.85 and $p < 0.001$. These results indicate consistent and statistically significant gender-based differences favoring female employees across all dimensions.

The results demonstrates that female employees in higher educational institutions tend to report better experiences in terms of job satisfaction, commitment, teamwork,

and trust in management compared to their male counterparts. This may reflect more positive perceptions, higher engagement levels, or better emotional alignment with institutional goals among women. The consistently higher mean scores among females could also indicate better integration, support systems, or communication channels that positively influence their workplace synergy. These insights are valuable for institutional policy-making, highlighting the need to explore and address the specific challenges or perceptions faced by male employees to ensure balanced employee engagement across genders.

Bon the significant p-values (all < 0.001) for all four factors, the null hypothesis which assumes that there is no significant difference between male and female employees with regard to employee synergizing dynamics is rejected. The results affirms that gender-based differences do exist and are statistically significant across all measured factors of employee synergy in higher educational institutions in Kerala.

b) Sustainable Human Resource Management Ecosystem Across Age

H.O.2.1: There is no significant difference between employees below the age of 40 and those above 40 in higher educational institutions in Kerala with respect to the factors of employee synergizing dynamics.

Table 4.10

Independent T Test for Significant Difference between Employees below the Age of 40 and those Above 40 in Higher Educational Institutions in Kerala with Regard to the Employee Synergizing Dynamics

Factors of employee synergizing dynamics	Age	Mean	SD	t-value	p value
Job Satisfaction	Below 40	3.90	1.22	0.97	0.330^{NS}
	Above 40	3.73	1.30		
Job Commitment	Below 40	4.23	0.94	-1.87	0.061^{NS}
	Above 40	4.47	0.75		
Teamwork and Cooperation	Below 40	4.07	1.00	-2.95	0.003**
	Above 40	4.47	0.68		
Trust in Management	Below 40	3.74	1.13	-1.29	0.196^{NS}
	Above 40	3.94	0.95		

**denotes significant at 1% level; ^{NS} denotes Not Significant

The independent t-test was performed to examine age-wise differences in employee synergizing dynamics among higher educational institution employees in Kerala. Among the four factors, only teamwork and cooperation demonstrate a statistically significant difference, with a t-value of -2.95 and p-value of 0.003, indicating significance at the 1% level. The mean score for this factor is greater among employees above 40 years (mean = 4.47) compared to those below 40 (mean = 4.07), suggesting better teamwork perception in the older group. The other three factors, job satisfaction (p = 0.330), job commitment (p = 0.061), and trust in management (p = 0.196) do not reveal significant differences. Anyhow, job commitment approaches significance, with a slightly higher mean for the above 40 group (4.47) than the below 40 group (4.23).

These results indicate that employees aged above 40 perceive a stronger sense of teamwork and cooperation in their institutions compared to their younger counterparts. This may be due to more experience, longer institutional association, or mature interpersonal dynamics. Eventhough younger employees also report favorable perceptions in other areas like job satisfaction and commitment, the gap in teamwork dynamics highlights the potential benefit of cross-generational collaboration and mentorship programs to strengthen team culture. The insights are helpful for HR practices focusing to harmonize employee synergy across age groups.

Since a significant difference is found in the factor of teamwork and cooperation (p = 0.003), the null hypothesis is partially rejected. But, for the other three factors, job satisfaction, job commitment, and trust in management, the p-values are not statistically significant, so the null hypothesis is accepted for those. Therefore, the hypothesis is not entirely tenable, as age does impact at least one dimension of employee synergizing dynamics within higher educational institutions in Kerala.

c) Sustainable Human Resource Management Ecosystem Across Experience

H.O.2.1: There is no significant difference between employees with below 10 years of experience and those with more than 10 years of experience in higher educational institutions in Kerala with respect to the factors of employee synergizing dynamics.

Table 4.11

Independent T Test for Significant Difference between Employees with below 10 Years of Experience and Those with More than 10 Years of Experience in Higher Educational Institutions in Kerala with Regard to the Employee Synergizing Dynamics

Factors of employee synergizing dynamics	Experience	Mean	SD	t-value	p value
Job Satisfaction	Below 10 years	3.52	1.28	-4.06	<0.001**
	Above 10 years	4.00	1.19		
Job Commitment	Below 10 years	4.04	0.80	-3.10	0.002**
	Above 10 years	4.32	0.95		
Teamwork and Cooperation	Below 10 years	3.93	0.96	-2.44	0.015*
	Above 10 years	4.16	0.97		
Trust in Management	Below 10 years	3.52	1.08	-2.97	0.003**
	Above 10 years	3.84	1.11		

**denotes significant at 1% level; *denotes significant at 5% level

An independent t-test was performed to determine whether there is a significant difference in employee synergizing dynamics based on years of experience (below 10 years vs. above 10 years) among employees in higher educational institutions in Kerala. All four factors display statistically significant differences. In case of job satisfaction, employees with above 10 years of experience scored higher (mean = 4.00) compared to those with below 10 years (mean = 3.52), with a t-value of -4.06 and p-value < 0.001, indicating high significance. Similarly, in job commitment, the more experienced group (mean = 4.32) outshine the less experienced group (mean = 4.04), with a t-value of -3.10 and p = 0.002. Teamwork and cooperation also exposed a significant difference (t = -2.44, p = 0.015), where above 10 years of experience scored 4.16 versus 3.93 for below 10 years. Lastly, trust in management was also significantly better among the high experienced group (mean = 3.84 vs. 3.52), with t = -2.97 and p = 0.003.

These results highlight that employees with more than 10 years of experience consistently record better perceptions of job satisfaction, commitment, teamwork, and trust in management compared to their less experienced counterparts. This could be attributed to their deeper institutional familiarity, stronger professional relationships, and adaptive strategies developed over time. The results suggest that experience enhances the quality of workplace synergy and employee engagement. Institutions may consider leveraging this strength by encouraging mentorship, experience-sharing platforms, and structured support systems to help newer employees integrate more effectively into the institutional culture.

Since all four factors have p-values below the 0.05 level, the null hypothesis that posits, there is no significant difference between employees with below and above 10 years of experience is rejected. The statistical evidence clearly supports the conclusion that years of experience significantly impact employee synergizing dynamics in higher educational institutions in Kerala.

d) Sustainable Human Resource Management Ecosystem Across Stream of Study

H.O.2.1: There is no significant difference between stream of study offered by higher educational institutions in Kerala with respect to the factors of employee synergizing dynamics.

Table 4.12

ANOVA for Significant Difference between Stream of Study Offered by Higher Educational Institutions in Kerala with Regard to the Employee Synergizing Dynamics

Factors of employee synergizing dynamics	Stream	Mean	SD	F value	p value
Job Satisfaction	Arts	3.68	1.26	8.32	<0.001**
	Science	3.75	1.12		
	Commerce	4.11	1.20		
Job Commitment	Arts	4.08	1.09	6.98	0.001**
	Science	4.32	0.71		
	Commerce	4.38	0.80		
Teamwork and Cooperation	Arts	3.96	1.06	4.85	0.008**
	Science	4.28	0.59		
	Commerce	4.18	0.99		
Trust in Management	Arts	3.56	1.25	7.14	0.001**
	Science	3.78	0.62		
	Commerce	3.94	1.07		

**denotes significant at 1% level

The table displays the results of a one-way analysis of variance (ANOVA) conducted to examine whether there are significant differences in employee synergizing dynamics based on the stream of study (arts, science, and commerce) offered by higher educational institutions in Kerala. The analysis shows that all four factors, job satisfaction ($F = 8.32$, $p < 0.001$), job commitment ($F = 6.98$, $p = 0.001$), teamwork and cooperation ($F = 4.85$, $p = 0.008$), and trust in management ($F = 7.14$, $p = 0.001$), have p-values less than 0.01, suggesting statistically significant differences across the three streams. Since all the p-values are below the 1% significance level, it can be concluded that the identified differences are highly significant.

The statistical results suggest that the type of academic stream offered by an institution (arts, science, or commerce) is meaningfully associated with variations in how employees experience and express job satisfaction, commitment, teamwork, and trust in management. In a practical sense, this specifies that the institutional environment shaped by the academic stream may influence how effectively employees collaborate, stay committed, and maintain trust in their organization. These findings can help policymakers and institutional leaders tailor human resource and organizational development strategies according to the dominant academic stream to develop synergy among staff.

Given that all the p-values associated with the four factors are less than the 0.01 level, the null hypothesis which stated that there is no significant difference between the stream of study offered by higher educational institutions in Kerala with respect to the factors of employee synergizing dynamics is rejected. So, the alternative view is accepted, affirming that employee synergizing dynamics do vary significantly across different academic streams.

Table 4.13

Post Hoc for Significant Difference between Stream of Study Offered by Higher Educational Institutions in Kerala with Regard to the Employee Synergizing Dynamics

Factors of employee synergizing dynamics	Stream(I)	Stream(J)	Mean difference (I-J)	Std. error	p value
Job Satisfaction	Arts (Mean = 3.68)	Science (Mean = 3.75)	-0.070	0.156	0.895^{NS}
		Commerce (Mean = 4.11)	-0.437	0.111	<0.001**
	Science (Mean = 3.75)	Commerce (Mean = 4.11)	-0.367	0.153	0.045*
Job Commitment	Arts (Mean = 4.08)	Science (Mean = 4.32)	-0.241	0.117	0.100^{NS}
		Commerce (Mean = 4.38)	-0.308	0.084	0.001**
	Science (Mean = 4.32)	Commerce (Mean = 4.38)	-0.066	0.115	0.832^{NS}
Teamwork and Cooperation	Arts (Mean = 3.96)	Science (Mean = 4.28)	-0.325	0.124	0.025*
		Commerce (Mean = 4.18)	-0.228	0.089	0.029*
	Science (Mean = 4.28)	Commerce (Mean = 4.18)	0.097	0.122	0.706^{NS}
Trust in Management	Arts (Mean = 3.56)	Science (Mean = 3.78)	-0.225	0.141	0.247^{NS}
		Commerce (Mean = 3.94)	-0.381	0.100	0.001**
	Science (Mean = 3.78)	Commerce (Mean = 3.94)	-0.155	0.138	0.502^{NS}

*denotes significant at 5% level;**denotes significant at 1% level; ^{NS} denotes Not Significant

The post hoc analysis unveiled several significant and non-significant differences across the streams. In job satisfaction, significant differences were found between arts and commerce (mean difference = -0.437, $p < 0.001$**) and between science and commerce (mean difference = -0.367, $p = 0.045$*). Although, the

difference between arts and science was not significant (p = 0.895). For job commitment, only the arts–commerce comparison showed a significant difference (mean difference = -0.308, p = 0.001**), while arts–science (p = 0.100) and science–commerce (p = 0.832) were not significant. In the case of teamwork and cooperation, significant differences existed between arts and science (mean difference = -0.325, p = 0.025*) and arts and commerce (mean difference = -0.228, p = 0.029*), whereas science and commerce showed no significant difference (p = 0.706). While considering trust in management, only the arts–commerce comparison was significant (mean difference = -0.381, p = 0.001**), with all other pairs being non-significant.

Among all significant results, commerce stream consistently scored greater in employee synergizing dimensions. In job satisfaction, the mean score for commerce (4.11) was higher than both arts (3.68) and science (3.75), indicating that staff in commerce colleges are more satisfied with their jobs. For job commitment, commerce again led with a mean of 4.38, significantly higher than arts (4.08). Similarly, for teamwork and cooperation, science (4.28) and commerce (4.18) both scored greater than arts (3.96), suggesting stronger collaborative environments in these streams. In terms of trust in management, commerce institutions expressed a higher mean (3.94) compared to arts (3.56), showing greater managerial trust among employees in commerce-related institutions.

The results specify that employees in commerce institutions perceive better work conditions and interpersonal dynamics than their counterparts in arts and science streams. These higher scores in satisfaction, commitment, cooperation, and trust reflect a more conducive and motivating institutional environment in commerce education. Educational administrators and HR professionals in arts and science institutions may benefit from analysing practices followed in commerce institutions to replicate factors that promote employee engagement and organizational synergy. Developing workplace dynamics in underperforming streams could ultimately improve overall institutional performance, employee morale, and retention in Kerala's higher education sector.

e) Sustainable Human Resource Management Ecosystem Across Designation

H.O.2.1: There is no significant difference between designation of employees of higher educational institutions in Kerala with respect to the factors of employee synergizing dynamics.

Table 4.14

ANOVA for Significant Difference between Designation of Employees of Higher Educational Institutions in Kerala with Regard to the Employee Synergizing Dynamics

Factors of employee synergizing dynamics	Designation	Mean	SD	F value	p value
Job Satisfaction	Assistant Professor	3.87	1.25	0.15	0.855[NS]
	Associate Professor	3.93	1.19		
	Professor	4.00	0.83		
Job Commitment	Assistant Professor	4.25	0.93	1.57	0.209[NS]
	Associate Professor	4.40	0.96		
	Professor	4.00	0.67		
Teamwork and Cooperation	Assistant Professor	4.09	1.00	0.40	0.668[NS]
	Associate Professor	4.20	0.91		
	Professor	4.22	0.64		
Trust in Management	Assistant Professor	3.74	1.13	1.08	0.338[NS]
	Associate Professor	4.00	1.04		
	Professor	3.77	0.80		

[NS] denotes Not Significant

The analysis of variance (ANOVA) results display that there is no statistically significant difference across the designations (assistant professor, associate professor, and professor) with respect to all four factors of employee synergizing dynamics. Particularly, the p-value for job satisfaction is 0.855, for job commitment is 0.209, for teamwork and cooperation is 0.668, and for trust in management is 0.338. In all cases, the p-values are higher than the significance level of 0.05, indicating that the observed differences in mean scores among the different designation groups are not statistically significant.

The absence of significant differences In employee synergizing dynamics across designations specifies a uniformity in workplace experiences and perceptions among faculty members in higher educational institutions in Kerala, regardless of

their rank. This could suggest that institutional practices, policies, and culture exert a consistent influence on all employees, ensuring equitable treatment and a shared professional environment. Such homogeneity is generally positive, as it reflects a non-discriminatory environment where all employees, regardless of rank, experience same levels of job satisfaction, commitment, teamwork, and trust in management.

Based on the ANOVA results, since all p-values are higher than 0.05, the null hypothesis stating that there is no significant difference between designation of employees with respect to the factors of employee synergizing dynamics is accepted. The results support the view that designation does not lead to statistically significant variation in any of the measured employee synergizing dynamics within higher educational institutions in Kerala.

f) Sustainable Human Resource Management Ecosystem Across Monthly Gross Income

H.O.2.1: There is no significant difference between employees with monthly income of below 100000 and those with above 100000 in higher educational institutions in Kerala with respect to the factors of employee synergizing dynamics.

Table 4.15

Independent T test for significant difference between employees with monthly income of below 100000 and those with above 100000 in higher educational institutions in Kerala with regard to the employee synergizing dynamics

Factors of employee synergizing dynamics	Monthly Gross Income	Mean	SD	t-value	p value
Job Satisfaction	Below 100000	3.66	1.23	-3.65	<0.001**
	Above 100000	4.04	1.21		
Job Commitment	Below 100000	4.15	0.77	-2.12	0.034*
	Above 100000	4.32	1.01		
Teamwork and Cooperation	Below 100000	4.06	0.85	-0.94	0.346^{NS}
	Above 100000	4.14	1.05		
Trust in Management	Below 100000	3.74	0.97	-0.45	0.649^{NS}
	Above 100000	3.78	1.20		

**denotes significant at 1% level; *denotes significant at 5% level; ^{NS} denotes Not Significant

The independent t-test results disclose significant differences in two out of the four factors of employee synergizing dynamics based on monthly income levels. For job satisfaction, employees earning above ₹100,000 exhibit a higher mean score (4.04) compared to those earning below ₹100,000 (3.66), with a statistically significant difference ($t = -3.65$, $p < 0.001$). Similarly, for job commitment, the higher income group again demonstrates a higher mean score (4.32) than the lower income group (4.15), and this difference is also statistically significant ($t = -2.12$, $p = 0.034$). Yet, for teamwork and cooperation ($p = 0.346$) and trust in management ($p = 0.649$), the differences in mean scores between income groups are not statistically significant, even though the higher income group shows slightly higher means in both cases.

The findings suggest that Income level ’as a meaningful influence on certain aspects of employee synergy, particularly in areas like job satisfaction and commitment. Employees earning above ₹100,000 tend to face greater satisfaction and demonstrate stronger commitment to their roles, which may be attributed to better financial security, recognition, or benefits associated with higher pay. On the other hand, teamwork and trust in management appear to be less influenced by income differences, stipulating that these dimensions may be more closely tied to the institutional environment or leadership style rather than financial compensation. This insight can help administrators design targeted interventions to develop satisfaction and commitment among lower income employees.

Since significant differences were observed in job satisfaction and job commitment based on income levels ($p < 0.05$), the null hypothesis is partially rejected. The hypothesis is not fully supported because income level does significantly influence at least two of the four measured factors of employee synergizing dynamics. So, we conclude that monthly income does have a differential effect on select aspects of employee dynamics in higher educational institutions in Kerala.

g) Sustainable Human Resource Management Ecosystem Across Domicile of the Institution

H.O.2.1: There is no significant difference among the domicile of the higher educational institutions in Kerala with regard to the sustainable human resource management ecosystem.

Table 4.16

ANOVA Test for Significant Difference among the Domicile of the Higher Educational Institutions in Kerala with Regard to the Sustainable Human Resource Management Ecosystem.

Factors of Psycho-social workplace Milieu	Domicile	Mean	SD	F value	p value
Job Satisfaction	Urban	3.74	1.29	7.66	0.001**
	Semi-Urban	4.22	0.92		
	Rural	3.80	1.32		
Job Commitment	Urban	4.32	0.92	2.58	0.076^{NS}
	Semi-Urban	4.31	0.79		
	Rural	4.12	1.01		
Teamwork and Cooperation	Urban	4.05	1.09	1.97	0.140^{NS}
	Semi-Urban	4.25	0.88		
	Rural	4.08	0.88		
Trust in Management	Urban	3.66	1.20	1.64	0.194^{NS}
	Semi-Urban	3.81	1.01		
	Rural	3.85	1.06		

**denotes significant at 1% level; ^{NS} denotes Not Significant

The ANOVA results in above table reveal that among the four factors of the psycho-social workplace milieu, only job satisfaction shows a statistically significant difference across the domicile categories of higher educational institutions in Kerala, with an F value of 7.66 and a p value of 0.001, which is significant at the 1% level. The other three factors, job commitment (p = 0.076), teamwork and cooperation (p = 0.140), and trust in management (p = 0.194), have p values higher than the 0.05 threshold, indicating no statistically significant difference in these aspects across urban, semi-urban, and rural institutions.

These results specify that, while job satisfaction levels vary significantly depending on whether the institution is located in an urban, semi-urban, or rural area, other psycho-social aspects such as job commitment, teamwork, and trust in management remain relatively consistent across different domiciles. In practical terms, this indicates that location may influence how satisfied teachers feel with their work environment, possibly due to differences in accessibility, resources, or community engagement opportunities, but does not appear to substantially affect their sense of commitment, cooperative work culture, or trust in institutional leadership. This points to a need for targeted strategies to boost job satisfaction in specific domiciles without having to overhaul other psycho-social dynamics that are already stable across locations.

Since there is a statistically significant difference for at least one factor (job satisfaction), the null hypothesis asserting that there is no significant difference among the domicile of higher educational institutions in Kerala with regard to the sustainable human resource management ecosystem is rejected. Yet, as no significant differences are found for job commitment, teamwork and cooperation, and trust in management, the null hypothesis is accepted for these specific factors. Therefore, the overall conclusion is a partial rejection of the hypothesis, rejected for job satisfaction and accepted for the remaining three factors.

Table 4.17

Post Hoc Test for Significant Difference among the Domicile of the Higher Educational Institutions in Kerala with Regard to the Sustainable Human Resource Management Ecosystem.

Factors of Psycho-social workplace Milieu	Domicile(I)	Domicile(J)	Mean difference (I-J)	Std. error	p value
Job Satisfaction	Urban (Mean = 3.74)	Semi-Urban (Mean = 4.22)	-0.485	0.129	0.001**
		Rural (Mean = 3.80)	-0.062	0.120	0.860^{NS}
	Semi-Urban (Mean = 4.22)	Rural (Mean = 3.80)	0.422	0.135	0.005**

**denotes significant at 1% level;*denotes significant at 5% level; ^{NS} denotes Not Significant

The post hoc test results in given table show that for the factor job satisfaction, there are statistically significant differences between urban and semi-urban institutions (p = 0.001) and between semi-urban and rural institutions (p = 0.005), both significant at the 1% level. However, the difference between urban and rural institutions (p = 0.860) is not statistically significant. This implies that variations in job satisfaction are mainly observed when semi-urban institutions are compared with either urban or rural institutions, while urban and rural institutions share similar satisfaction levels.

Among the significant cases, the mean score for job satisfaction is greatest in semi-urban institutions (4.22), followed by rural institutions (3.80), and lowest in urban institutions (3.74). The significant difference of -0.485 between urban and semi-urban institutions suggests that teachers in semi-urban areas perceive higher job satisfaction compared to those in urban areas. Similarly, the significant difference of 0.422 between semi-urban and rural institutions specifies that job satisfaction is also higher in semi-urban areas than in rural areas. In simple terms, semi-urban institutions appear to give a work environment that fosters greater satisfaction among teachers compared to both urban and rural counterparts.

These results imply that institutional location plays a role in shaping job satisfaction levels, with semi-urban institutions having an advantage in creating a more satisfying work environment for teachers. This could be due to factors such as manageable class sizes, stronger community relationships, better work-life balance, or fewer administrative pressures compared to urban settings, whereas still having more resources and accessibility than rural settings. For policymakers and administrators, these insights propose that practices contributing to higher satisfaction in semi-urban colleges, such as balanced workload distribution, supportive leadership, and optimal resource allocation, could be adapted in urban and rural institutions to enhance overall teacher satisfaction.

h) Sustainable Human Resource Management Ecosystem Across NAAC Grade

H.O.2.1: There is no significant difference between NAAC grade achieved by higher educational institutions in Kerala with respect to the factors of employee synergizing dynamics.

Table 4.18

ANOVA for Significant Difference between NAAC Grade Achieved by Higher Educational Institutions in Kerala with Regard to the Employee Synergizing Dynamics

Factors of employee synergizing dynamics	NAAC Grade	Mean	SD	F value	p value
Job Satisfaction	Not Accredited	4.15	1.05	10.90	<0.001**
	B	3.56	1.27		
	B+	3.74	1.39		
	B++ and Above	4.33	0.79		
Job Commitment	Not Accredited	4.33	0.84	1.30	0.274^{NS}
	B	4.22	0.85		
	B+	4.17	1.09		
	B++ and Above	4.36	0.75		
Teamwork and Cooperation	Not Accredited	4.24	0.87	8.66	<0.001**
	B	4.22	0.75		
	B+	3.82	1.20		
	B++ and Above	4.33	0.79		
Trust in Management	Not Accredited	4.04	0.89	3.76	0.011*
	B	3.66	1.05		
	B+	3.68	1.24		
	B++ and Above	3.70	1.16		

**denotes significant at 1% level; *denotes significant at 5% level; ^{NS} denotes Not Significant

The ANOVA results specify significant differences in three out of the four factors of employee synergizing dynamics based on the NAAC grade of higher educational institutions in Kerala. For job satisfaction, the p-value is less than 0.001, and the F-value is 10.90, stipulating a highly significant difference at the 1% level. Teamwork and cooperation also exhibit a significant difference with a p-value less than 0.001 and an F-value of 8.66. Additionally, trust in management records a statistically significant difference with a p-value of 0.011 and an F-value of 3.76, significant at the 5% level. However, job commitment does not reveal any significant variation across NAAC grades, as the p-value is 0.274, which is above the 0.05 threshold, and the F-value is 1.30.

These findings suggest that the accreditation status of an institution, reflected in its NAAC grade, has a meaningful association with how employees perceive certain aspects of their work environment. Especially, job satisfaction, teamwork and cooperation, and trust in management are significantly influenced by the institution's grade. This signifies that higher NAAC grades may be linked to better organizational practices or environments that positively influence these factors. In contrast, job commitment appears to be relatively stable and unaffected by accreditation status, which may suggest that employees maintain a certain level of commitment regardless of the institutional grade.

Since the ANOVA test unveils statistically significant differences for three out of the four factors (job satisfaction, teamwork and cooperation, and trust in management) across different NAAC grade levels, the null hypothesis is partially rejected. The hypothesis is accepted in the case of job commitment, where no significant difference is found. Therefore, we sum up that NAAC grade does have a significant impact on several, but not all, aspects of employee synergizing dynamics in higher educational institutions in Kerala.

Table 4.19

Post Hoc for Significant Difference between NAAC Grade Achieved by Higher Educational Institutions in Kerala with Regard to the Employee Synergizing Dynamics

Factors of employee synergizing dynamics	NAAC Grade (I)	NAAC Grade (J)	Mean difference (I-J)	Std. error	p value
Job Satisfaction	Not Accredited (Mean = 4.15)	B (Mean = 3.56)	0.595	0.142	<0.001**
		B+ (Mean = 3.74)	0.409	0.135	0.014*
		B++ and Above (Mean = 4.33)	-0.177	0.163	0.699^{NS}
	B (Mean = 3.56)	B+ (Mean = 3.74)	-0.186	0.131	0.492^{NS}
		B++ and Above (Mean = 4.33)	-0.773	0.160	<0.001**
	B+ (Mean = 3.74)	B++ and Above (Mean = 4.33)	-0.587	0.154	0.001**
Teamwork and Cooperation	Not Accredited (Mean = 4.24)	B (Mean = 4.22)	0.024	0.114	0.997^{NS}
		B+ (Mean = 3.82)	0.419	0.108	0.001**
		B++ and Above (Mean = 4.33)	-0.088	0.130	0.905^{NS}
	B (Mean = 4.22)	B+ (Mean = 3.82)	0.394	0.105	0.001**
		B++ and Above (Mean = 4.33)	-0.113	0.128	0.813^{NS}
	B+ (Mean = 3.82)	B++ and Above (Mean = 4.33)	-0.507	0.123	<0.001**
Trust in Management	Not Accredited (Mean = 4.04)	B (Mean = 3.66)	0.384	0.131	0.019*
		B+ (Mean = 3.68)	0.361	0.124	0.020*
		B++ and Above (Mean = 3.70)	0.344	0.150	0.103^{NS}
	B (Mean = 3.66)	B+ (Mean = 3.68)	-0.022	0.121	0.998^{NS}
		B++ and Above (Mean = 3.70)	-0.040	0.147	0.993^{NS}
	B+ (Mean = 3.68)	B++ and Above (Mean = 3.70)	-0.017	0.141	0.999^{NS}

*denotes significant at 5% level; **denotes significant at 1% level; ^{NS} denotes Not Significant

The post hoc analysis display statistically significant differences in several pairwise comparisons across the factors of employee synergizing dynamics. In job satisfaction, significant differences were observed between not accredited vs. B ($p < 0.001$), not accredited vs. B+ ($p = 0.014$), B vs. B++ and above ($p < 0.001$), and B+ vs. B++ and above ($p = 0.001$). No significant difference was observed between not accredited vs. B++ and above ($p = 0.699$) and B vs. B+ ($p = 0.492$). In case of teamwork and cooperation, significant differences were found between not accredited vs. B+ ($p = 0.001$), B vs. B+ ($p = 0.001$), and B+ vs. B++ and above ($p < 0.001$). All other comparisons were not significant ($p > 0.05$). For trust in management, significant differences were identified between not accredited vs. B ($p = 0.019$) and not accredited vs. B+ ($p = 0.020$). However, all other pairwise comparisons under this factor were not statistically significant.

In job satisfaction, institutions graded B++ and above had the highest mean (4.33), while B grade institutions had the lowest (3.56). The difference between B vs. B++ and above (mean difference = -0.773) and B+ vs. B++ and above (mean difference = -0.587) demonstrates a substantial increase in satisfaction as institutional quality improves. Also, not accredited institutions (mean = 4.15) reported significantly greater job satisfaction than both B and B+ grade institutions. For teamwork and cooperation, B++ and above institutions again reported the highest mean (4.33), whereas B+ institutions had the lowest mean (3.82). The significant difference between B+ vs. B++ and above (mean difference = -0.507) recommends that highly rated institutions provide better cooperative work environments. Also, in the comparisons of B vs. B+ (mean difference = 0.394) and not accredited vs. B+ (mean difference = 0.419), both B and not accredited institutions expressed higher mean scores than B+, reinforcing the relatively lower teamwork perception in B+ graded institutions. For trust in management, not accredited institutions show the highest mean score (4.04) among all groups. The significant comparisons with B (mean = 3.66; mean difference = 0.384) and B+ (mean = 3.68; mean difference = 0.361) reveal that employees in not accredited institutions perceived higher trust in their management than their counterparts in accredited institutions with B or B+ grades.

The results highlight a critical insight: the level of accreditation attained by an institution is meaningfully associated with the internal dynamics of employees, particularly in terms of job satisfaction, teamwork, and trust in management. The consistently lower scores for institutions with B+ grades propose possible institutional challenges in middle-tier accredited institutions. Conversely, institutions with B++ and above unveil stronger employee synergy, possibly due to better governance, leadership practices, and institutional support mechanisms linked to high accreditation standards. Interestingly, not accredited institutions sometimes scored better than B and B+ grades, possibly suggesting proactive internal practices or an under-recognized work environment awaiting formal quality certification. These insights can help policymakers and administrators observe where to intervene for improving internal organizational climate across accreditation levels.

i) Sustainable Human Resource Management Ecosystem Across Type of Management

H.O.2.1: There is no significant difference between minority and non-minority type of management in higher educational institutions in Kerala with respect to the factors of employee synergizing dynamics.

Table 4.20

Independent T Test for Significant Difference between Minority and Non-minority Type of Management in Higher Educational Institutions in Kerala with Regard to the Employee Synergizing Dynamics

Factors of employee synergizing dynamics	Type of Management	Mean	SD	t-value	p value
Job Satisfaction	Minority	3.77	1.26	-3.89	<0.001**
	Non-Minority	4.25	1.05		
Job Commitment	Minority	4.18	0.99	-3.49	0.001**
	Non-Minority	4.50	0.58		
Teamwork and Cooperation	Minority	4.06	1.00	-2.16	0.031*
	Non-Minority	4.27	0.89		
Trust in Management	Minority	3.68	1.13	-3.04	0.002**
	Non-Minority	4.02	1.01		

**denotes significant at 1% level; *denotes significant at 5% level

The independent t-test results imply significant differences across all four factors of employee synergizing dynamics between minority and non-minority types of management in higher educational institutions in Kerala. For job satisfaction, the mean score is significantly greater in non-minority institutions (mean = 4.25) compared to minority institutions (mean = 3.77), with a t-value of -3.89 and $p < 0.001$. Similarly, job commitment is significantly higher in non-minority institutions (mean = 4.50) than in minority ones (mean = 4.18), with a t-value of -3.49 and $p = 0.001$. For teamwork and cooperation, non-minority institutions again reveal a higher mean (4.27) compared to minority institutions (4.06), with a t-value of -2.16 and $p = 0.031$. Finally, trust in management is significantly better in non-minority institutions (mean = 4.02) versus minority ones (mean = 3.68), with a t-value of -3.04 and $p = 0.002$.

These findings propose that employees in non-minority managed institutions experience a more favorable working environment in terms of satisfaction, commitment, collaboration, and trust toward management. This could be attributed to more inclusive administrative practices, higher resource allocation, or clearer communication channels in non-minority institutions. Conversely, the comparatively lower scores in minority institutions may suggest challenges in organizational dynamics that can hinder employee morale, cohesion, and trust. The findings highlight the need for minority-managed institutions to evaluate internal policies and human resource practices to enhance employee synergy and institutional harmony.

Since all p-values for the four factors are less than the standard significance level (0.05), we reject the null hypothesis. There is a statistically significant difference between minority and non-minority types of management in higher educational institutions in Kerala with respect to job satisfaction, job commitment, teamwork and cooperation, and trust in management. These differences are meaningful and show real disparities in employee experience based on the type of institutional management.

4.5 Conclusion

The findings portray a largely healthy and sustainable human resource management ecosystem in Kerala's government-aided higher educational institutions, as perceived by college teachers. Core psycho-social enablers such as role clarity and job autonomy are comparatively strong, while organizational justice, inclusiveness, equity, and recognition require targeted strengthening. Employee synergising dynamics are above benchmark across the board, with job commitment and teamwork emerging as clear strengths. Differences appear by institutional context: non-minority managements generally outperform minority managements on climate, autonomy, recognition, and synergy; NAAC grade relates positively to several HRM and synergy dimensions, though some mid-tier grades show pockets of weakness; autonomy status shows a mixed pattern (greater justice in autonomous institutions but higher autonomy and leadership experience reported in non-autonomous ones); and gender composition has minimal influence except for a modest advantage in supportive climate where gender is not balanced. At the employee level, women report higher satisfaction, commitment, teamwork, and trust; those above 40 and those with more than 10 years of experience perceive stronger teamwork and broader synergy; higher earners report greater satisfaction and commitment; commerce stream institutions typically register stronger synergy; designation does not differentiate experiences; and semi-urban domicile is associated with the highest job satisfaction.

These insights suggest a clear action path: consolidate the strong foundations of role clarity, autonomy, teamwork, and commitment while closing gaps in justice, inclusiveness, equity, and recognition through transparent procedures, fair workload design, timely acknowledgment, and equitable growth pathways. Institutions, especially those in mid-tier NAAC bands and minority managements, can improve by investing in administrative support, digitising routine processes to reduce clerical burden, and institutionalising developmental HR practices that are stream-sensitive and stage-of-career-sensitive. Mentorship programmes that leverage experienced faculty, initiatives that raise male faculty engagement, and the diffusion of effective

practices from commerce and semi-urban contexts can further elevate system-wide synergy. Overall, the ecosystem is robust but uneven; deliberate, evidence-led HRM investments can convert these localized strengths into consistent, sustainable excellence across institutions.

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Chapter 5

INTERPLAY OF PERSONALITY TRAITS, SCIENTIFIC TEMPER, ACADEMIC ENTHUSIASM, AND ORGANIZATIONAL CHARACTERISTICS ON OCB I & O

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Chapter 5

INTERPLAY OF PERSONALITY TRAITS, SCIENTIFIC TEMPER, ACADEMIC ENTHUSIASM, AND ORGANIZATIONAL CHARACTERISTICS ON OCB I & O

5.1 Introduction

Organizational Citizenship Behaviour (OCB) has emerged as a vital component in understanding the overall effectiveness and harmony within educational institutions. It refers to voluntary, non-mandatory actions exhibited by employees that contribute to the functioning and social environment of the organization beyond their formal job roles. Within higher education, such behaviours are particularly crucial as they influence teaching quality, teamwork, institutional reputation, and the overall learning atmosphere. The concept of OCB can be broadly classified into two dimensions OCB-Individual (OCB-I), which focuses on behaviours directed towards colleagues or individuals, and OCB-Organization (OCB-O), which emphasizes actions benefiting the institution as a whole. In the context of government-aided higher educational institutions in Kerala, OCB reflects the teachers' intrinsic motivation, professional ethics, and shared responsibility in achieving institutional goals and academic excellence.

The present chapter investigates the dynamics of organizational citizenship behaviour (both OCB-I and OCB-O) and its association with key individual and institutional determinants such as personality traits, work-life balance, scientific temper, academic enthusiasm, and organizational characteristics. Personality traits dispositions influence how teachers engage in cooperative or altruistic acts, while work-life balance determines their capacity to maintain enthusiasm and professional engagement. The inclusion of scientific temper and academic enthusiasm highlights the intellectual and attitudinal foundations that encourage a spirit of inquiry, innovation, and selfless contribution to the academic community. Organizational characteristics also play a pivotal role in shaping teachers' willingness to engage in discretionary behaviours. By examining these interrelated factors, the chapter aims

to provide a deeper understanding of how personal dispositions and organizational environments collectively sustain a culture of citizenship behaviour in higher education system in Kerala.

5.2 Objective Covered in the Chapter

Objective II: To investigate the of organizational citizenship behavior – individual and organization (O and I), and its association by personality traits, scientific temper, academic enthusiasm and organizational characteristics of government aided higher educational institutions in Kerala

5.3 Statistical Tool and Software Used

To analyse the relationship and distribution of Organizational Citizenship Behaviour (OCB) and its associated variables, two key statistical tools were employed — Percentage Analysis (using Quartile Settings) and the Chi-Square Test for Association.

1) Percentage Analysis using Quartile Settings

Percentage analysis was used to classify the responses into three levels low, moderate, and high based on the quartile distribution of scores obtained for each construct, such as personality traits, work-life balance, scientific temper, academic enthusiasm, and organizational characteristics. This method helps in identifying the concentration of respondents across different intensity levels of each factor. By categorizing data into quartiles, the study gains a clearer understanding of patterns and tendencies within the sample, making it possible to determine which factors exhibit higher or lower behavioural expressions among teachers in government-aided higher educational institutions in Kerala.

2) Chi-Square Test for Association

The Chi-Square Test was applied to examine the association between categorical variables. This non-parametric test helps to determine whether differences observed among groups are statistically significant or merely due to

chance. Through this test, the study identifies whether specific demographic or institutional factors have a meaningful relationship with the levels of OCB, thereby offering insights into how individual and organizational characteristics influence teachers' citizenship behaviours within higher education settings.

5.4 Constructs Studied

OCB (Organizational Citizenship Behaviour)

Discretionary behaviours of employees that go beyond formal job duties and contribute to the overall effectiveness of the institution.

a) OCB–Individual (OCB-I)

Extra-role behaviours directed toward helping and supporting individuals within the organization.

- **Altruism** – Voluntary helping behaviour, seen in faculty assisting colleagues, students, or peers over formal duties.
- **Courtesy** – Proactive effort to retain smooth relations, reflected in preventing conflicts and respecting others in the institution.

b) OCB–Organization (OCB-O)

Extra-role behaviours aimed at supporting and improving the institution as a whole.

- **Virtue** – Responsible participation in institutional life, reveal through involvement in meetings and commitment to development.
- **Sportsmanship** – Tolerance of difficulties without complaints, convey through acceptance of extra work and maintaining positivity.
- **Conscientiousness** – Dedication beyond basic requirements, exhibited by punctuality, discipline, and consistent effort in duties.

Section A

LEVEL OF OCB I AND O, AND ITS ASSOCIATION BY SCIENTIFIC TEMPER

Scientific temper includes:

1) **Rationality**
2) **Curiosity/inquiry**
3) **Open mindedness**
4) **Respect for diversity**
5) **Critical evaluation**
6) **Problem solving attitude**

1) Level of OCB and Its Association with Rationality

a) Association Between Level of Raionality and Level of Altruism

H.0.1: There is no significant association between level of rationality and level of altruism among the teachers of higher educational institutions in Kerala

Table 5.1

Chi-Square for Association between Level of Rationality and Level of Altruism among the Teachers of Higher Educational Institutions in Kerala

Level of Rationality	Level of Altruism		Total	Chi-Square value	p value
	Low level	High Level			
Low level	9 (64.28%)	5 (35.71%)	14 (100%)	31.87	<0.001**
High level	27 (19.01%)	115 (80.98%)	142 (100%)		
Total	36 (23.07%)	120 (76.92%)	156 (100%)		

**denotes significant at 1%level

In the given table, the Chi-square value is 31.87 with a p-value less than 0.001, mentioning a statistically significant association between the level of rationality and the level of altruism among teachers of higher educational institutions in Kerala at the 1% significance level. From the data, among teachers with a low level of rationality, 64.28% have a low level of altruism, whereas only 35.71% have a high level of altruism.

Conversely, among teachers with a high level of rationality, only 19.01% exhibit a low level of altruism, whereas 80.98% display a high level of altruism. This contrasting distribution affirms a clear relationship between higher rationality and higher altruism.

In another words, the results show a clear contrast between the two groups. Among the low level of rationality category, the highest proportion is in the low level of altruism group (64.28%), while the high level of altruism is comparatively lower (35.71%). In contrast, in the high level of rationality category, the highest proportion is in the high level of altruism group (80.98%), while the low level of altruism is much smaller (19.01%). This pattern point to that higher rationality is strongly linked to higher altruism, whereas lower rationality is associated with lower altruism. Since the p-value is well below the 1% significance level, the null hypothesis is rejected, verifying a significant association between the two factors, with practical implications for promoting rational thinking to encourage altruistic behaviour among teachers of higher educational institutions.

b) Association Between Level of Rationality and Level of Courtesy

H.0.1: There is no significant association between level of rationality and level of courtesy among the teachers of higher educational institutions in Kerala

Table 5.2

Chi-Square for Association between Level of Rationality and Level of Altruism among the Teachers of Higher Educational Institutions in Kerala

Level of Rationality	Level of Courtesy		Total	Chi-Square value	p value
	Low level	High Level			
Low level	9 (64.28%)	5 (35.71%)	14 (100%)	31.87	<0.001**
High level	27 (19.01%)	115 (80.98%)	142 (100%)		
Total	36 (23.07%)	120 (76.92%)	156 (100%)		

**denotes significant at 1%level

In the table, the Chi-square value is 31.87 with a p-value less than 0.001, which demonstrates a statistically significant association between the level of rationality and the level of courtesy among teachers of higher educational institutions in Kerala

at the 1% significance level. Among teachers with a low level of rationality, 64.28% express a low level of courtesy, while only 35.71% have a high level of courtesy. Alternatively, among those with a high level of rationality, just 19.01% fall under the low courtesy category, whereas 80.98% exhibit a high level of courtesy. This clear disparity in percentages between the two rationality levels indicates that rationality is strongly linked with courtesy.

Looking at it in simpler terms, teachers with higher rationality tend to exhibit more courteous behaviour, while those with lower rationality are more likely to show lower levels of courtesy. In the low rationality group, the largest share is in low courtesy (64.28%), while in the high rationality group, the highest share is in high courtesy (80.98%). This means rational thinking skills may contribute to enhancing respectful, polite, and considerate workplace interactions. Since the p-value is far below the threshold for significance, the null hypothesis is rejected, affirming that rationality and courtesy are closely associated, with practical implications for staff training and professional conduct policies in higher educational institutions.

c) Association Between Level of Rationality and Level of Virtue

H.0.1: There is no significant association between level of rationality and level of virtue among the teachers of higher educational institutions in Kerala

Table 5.3

Chi-Square for Association between Level of Rationality and Level of Virtue among the Teachers of Higher Educational Institutions in Kerala

Level of Rationality	Level of Virtue		Total	Chi-Square value	p value
	Low level	High Level			
Low level	9 (64.28%)	5 (35.71%)	14 (100%)	28.65	<0.001**
High level	30 (21.12%)	112 (78.87%)	142 (100%)		
Total	39 (25%)	117 (75%)	156 (100%)		

**denotes significant at 1%level

The Chi-square value of 28.65 with a p-value less than 0.001 denotes a statistically significant association between the level of rationality and the level of virtue among

teachers of higher educational institutions in Kerala at the 1% significance level. Within the low rationality group, 64.28% of teachers have a low level of virtue, while 35.71% demonstrate a high level of virtue. In contrast, in the high rationality group, only 21.12% fall under low virtue, while 78.87% are in the high virtue category. These contrasting distributions show a clear positive link between higher rationality and higher virtue.

From a practical and simpler viewpoint, the results suggest that teachers who are more rational tend to demonstrate stronger moral values, ethical conduct, and integrity in their work life. In the low rationality group, the highest proportion is in low virtue (64.28%), whereas in the high rationality group, the highest proportion is in high virtue (78.87%). This means that developing rational thinking abilities could contribute to improving virtuous behaviour in professional environments. Since the p-value is well below the significance threshold, the null hypothesis is rejected, confirming that rationality and virtue are indeed related, and this relationship has meaningful indications for organisational ethics and professional behaviour development in higher educational institutions.

d) Association Between Level of Rationality and Level of Sportsmanship

H.0.1: There is no significant association between level of rationality and level of sportsmanship among the teachers of higher educational institutions in Kerala

Table 5.4

Chi-Square for Association between Level of Rationality and Level of Sportsmanship among the Teachers of Higher Educational Institutions in Kerala

Level of Rationality	Level of Sportsmanship		Total	Chi-Square value	p value
	Low level	High Level			
Low level	9 (64.28%)	5 (35.71%)	14 (100%)	28.65	<0.001**
High level	30 (21.12%)	112 (78.87%)	142 (100%)		
Total	39 (25%)	117 (75%)	156 (100%)		

**denotes significant at 1%level

In the given table, the Chi-square test value is 28.65 with a p-value less than 0.001, specifying a statistically significant association between the level of

rationality and the level of sportsmanship among teachers of higher educational institutions in Kerala. Among those with a low level of rationality, 64.28% express a low level of sportsmanship and 35.71% show a high level. Conversely, among those with a high level of rationality, only 21.12% disclose low sportsmanship, while 78.87% demonstrate high sportsmanship. Since the p-value is significant at the 1% level, the null hypothesis of no association is rejected.

From a practical viewpoint, the results clearly expose that the highest proportion in the low rationality group is in the low sportsmanship category (64.28%), whereas in the high rationality group, the highest proportion is in the high sportsmanship category (78.87%). This pattern implies that teachers with higher rationality are far more inclined towards maintaining fairness, cooperation, and a positive approach in professional interactions. In simple terms, when rationality is high, sportsmanship tends to be high as well, fostering teamwork and institutional harmony. Conversely, when rationality is low, sportsmanship also tends to be low, which could inhibit collaborative efforts. These findings imply that workplace initiatives aimed at improving rational thinking could have a direct positive effect on sportsmanship levels among teachers.

e) Association Between Level of Rationality and Level of Conscientiousness

H.0.1: There is no significant association between level of rationality and level of conscientiousness among the teachers of higher educational institutions in Kerala

Table 5.5

Chi-Square Test for Association between Level of Rationality and Level of Conscientiousness among Teachers of Higher Educational Institutions in Kerala

Level of Rationality	Level of Conscientiousness		Total	Chi-Square value	p value
	Low level	High Level			
Low level	9 (64.28%)	5 (35.71%)	14 (100%)	14.09	<0.001**
High level	54 (38.02%)	88 (61.97%)	142 (100%)		
Total	63 (40.38%)	93 (59.61%)	156 (100%)		

**denotes significant at 1%level

The Chi-square analysis unveil that the distribution of conscientiousness levels differs significantly across the two rationality groups (Chi-square value = 14.09, $p < 0.001$). Among teachers with a low level of rationality, 64.28% show a low level of conscientiousness and 35.71% have a high level of conscientiousness. Conversely, teachers with a high level of rationality show a reversed trend, with 38.02% having low conscientiousness and 61.97% demonstrating high conscientiousness. As the p-value is less than 0.01, the null hypothesis of no significant association between level of rationality and level of conscientiousness is rejected at the 1% level of significance.

In brief, the findings indicate that teachers who display higher rationality are more likely to also possess stronger conscientiousness traits, whereas those with lower rationality tend to have lower conscientiousness. This specifies that rational thinking and careful, responsible work habits may go hand in hand in the context of higher educational institutions. Such an association implies that fostering rational decision-making among teachers could potentially improve their conscientiousness, leading to improved organizational reliability, work quality, and adherence to institutional goals. Conversely, mistreating the development of rationality may limit the emergence of conscientious behaviour in the workforce.

2) Level of OCB and Its Association with Curiosity/Inquiry

a) Association Between Level of Curiosity/Inquiry and Level of Altruism

H.0.1: There is no significant association between level of curiosity inquiry and level of altruism among the teachers of higher educational institutions in Kerala

Table 5.6

Chi-Square for Association between Level of Rationality and Level of Altruism among the Teachers of Higher Educational Institutions in Kerala

Level of Curiosity Inquiry	Level of Altruism		Total	Chi-Square value	p value
	Low level	High Level			
Low level	282 (65.3%)	150 (34.7%)	432 (100%)	90.35	<0.001**
High level	24 (18.2%)	108 (81.8%)	132 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test discloses a significant association between the level of curiosity inquiry and the level of altruism among teachers of higher educational institutions (Chi-square value = 90.35, $p < 0.001$). Among those with low curiosity inquiry, 65.3% shows low altruism and 34.7% show high altruism. In contrast, teachers with high curiosity inquiry expose the opposite trend, with only 18.2% reporting low altruism and 81.8% showing high altruism. Since the p-value is less than 0.01, the null hypothesis is rejected, verifying a statistically significant relationship between curiosity inquiry and altruism levels.

In simple terms, the results express that in the high curiosity inquiry group, the majority (81.8%) are in the high altruism category, whereas in the low curiosity inquiry group, most (65.3%) fall in the low altruism category. This clearly suggests that teachers with a stronger tendency to explore, question, and seek knowledge are far more likely to demonstrate selfless and helpful behaviour, while those with lower curiosity levels tend to be less altruistic. This association highlights that nurturing curiosity among educators could also enhance their willingness to support others, thereby improving the cooperative and socially responsible environment in higher educational institutions.

b) Association Between Level of Curiosity/Inquiry and Level of Courtesy

H.0.1: There is no significant association between level of curiosity inquiry and level of courtesy among the teachers of higher educational institutions in Kerala

Table 5.7

Chi-Square for Association between Level of Curiosity Inquiry and Level of Courtesy among the Teachers of Higher Educational Institutions in Kerala

Level of Curiosity Inquiry	Level of Courtesy		Total	Chi-Square value	p value
	Low level	High Level			
Low level	282 (65.3%)	150 (34.7%)	432 (100%)	90.35	<0.001**
High level	24 (18.2%)	108 (81.8%)	132 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

**denotes significant at 1%level

The Chi-square analysis exhibits a significant association between the level of curiosity inquiry and the level of courtesy among teachers of higher educational institutions (Chi-square value = 90.35, $p < 0.001$). Among teachers with low curiosity inquiry, 65.3% shows low courtesy and 34.7% demonstrate high courtesy. On the other hand, those with high curiosity inquiry demonstrates a contrasting trend, with only 18.2% reporting low courtesy and a substantial 81.8% showing high courtesy. Since the p-value is less than 0.01, the null hypothesis is rejected, stipulating a statistically significant relationship between curiosity inquiry and courtesy levels.

In plain terms, the findings indicate that in the high curiosity inquiry group, the majority (81.8%) are in the high courtesy category, while in the low curiosity inquiry group, most (65.3%) are in the low courtesy category. This means that teachers who are more inquisitive and open to learning tend to be more polite, respectful, and considerate toward others, while those with lower curiosity are more likely to display reduced courtesy levels. These finding states that enhancing curiosity-driven engagement among teachers may also promote respectful and positive interpersonal behavior, which can contribute to a more harmonious and collaborative educational environment.

c) Association Between Level of Curiosity/Inquiry and Level of Virtue

H.0.1: There is no significant association between level of curiosity inquiry and level of virtue among the teachers of higher educational institutions in Kerala

Table 5.8

Chi-Square for Association between Level of Curiosity Inquiry and Level of Virtue among the Teachers of Higher Educational Institutions in Kerala

Level of Curiosity Inquiry	Level of Virtue		Total	Chi-Square value	p value
	Low level	High Level			
Low level	264 (61.1%)	168 (38.9%)	432 (100%)	82.64	<0.001**
High level	21 (15.9%)	111 (84.1%)	132 (100%)		
Total	285 (50.5%)	279 (49.5%)	564 (100%)		

**denotes significant at 1%level

The Chi-square results designating a significant association between the level of curiosity inquiry and the level of virtue among teachers in higher educational institutions (Chi-square value = 82.64, $p < 0.001$). In the low curiosity inquiry group, 61.1% of teachers present low virtue, while 38.9% show high virtue. Conversely, in the high curiosity inquiry group, only 15.9% fall under low virtue, while a large majority of 84.1% demonstrate high virtue. As the p-value is below the 0.01 threshold, the null hypothesis is rejected, confirming that curiosity inquiry and virtue are significantly related.

In simpler terms, the findings display that in the high curiosity inquiry group, most teachers (84.1%) are in the high virtue category, while in the low curiosity inquiry group, the majority (61.1%) are in the low virtue category. This pattern proposes that teachers who actively seek knowledge and explore ideas tend to uphold stronger moral principles and ethical conduct. On the other hand, lower curiosity levels are more frequently linked to weaker virtue levels. This relationship implies that promoting curiosity among teachers could also reinforce their moral values, contributing to a more principled and value-driven academic environment.

d) Association Between Level of Curiosity/Inquiry and Level of Sportsmanship

H.0.1: There is no significant association between level of curiosity inquiry and level of sportsmanship among the teachers of higher educational institutions in Kerala

Table 5.9

Chi-Square for Association between Level of Curiosity Inquiry and Level of Sportsmanship among the Teachers of Higher Educational Institutions in Kerala

Level of Curiosity Inquiry	Level of Sportsmanship		Total	Chi-Square value	p value
	Low level	High Level			
Low level	324 (75.0%)	108 (25.0%)	432 (100%)	99.75	<0.001**
High level	36 (27.3%)	96 (72.7%)	132 (100%)		
Total	360 (63.8%)	204 (49.5%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test results expose a significant association between the level of curiosity inquiry and the level of sportsmanship among teachers in higher educational institutions (Chi-square value = 99.75, $p < 0.001$). In case of those with low curiosity inquiry, 75.0% fall into the low sportsmanship category and 25.0% into the high sportsmanship category. In contrast, teachers with high curiosity inquiry convey a reversed distribution, with only 27.3% in low sportsmanship and a substantial 72.7% in high sportsmanship. Since the p-value is below 0.01, the null hypothesis is rejected, determine a statistically significant relationship between curiosity inquiry and sportsmanship levels.

Put simply, the results present that in the high curiosity inquiry group, the majority (72.7%) display high sportsmanship, while in the low curiosity inquiry group, most (75.0%) fall in the low sportsmanship category. This shows that teachers who actively explore, question, and seek knowledge are more inclined to display fairness, respect, and cooperative spirit in professional interactions. On the other hand, limited curiosity frequently corresponds with weaker sportsmanship. This link proposes that cultivating curiosity among educators could also encourage fair play, mutual respect, and better teamwork, thereby fostering a healthier and more collaborative institutional culture.

e) Association Between Level of Curiosity/Inquiry and Level of Conscientiousness

H.0.1: There is no significant association between level of curiosity inquiry and level of conscientiousness among the teachers of higher educational institutions in Kerala

Table 5.10

Chi-Square for Association between Level of Curiosity Inquiry and Level of Conscientiousness among the Teachers of Higher Educational Institutions in Kerala

Level of Curiosity Inquiry	Level of Conscientiousness		Total	Chi-Square value	p value
	Low level	High Level			
Low level	348 (80.6%)	84 (19.4%)	432 (100%)	85.84	<0.001**
High level	51 (38.6%)	81 (61.4%)	132 (100%)		
Total	399 (70.7%)	165 (29.3%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test results express a significant association between the level of curiosity inquiry and the level of conscientiousness among teachers in higher educational institutions (Chi-square value = 85.84, $p < 0.001$). Among those with low curiosity inquiry, 80.6% fall in the low conscientiousness category and 19.4% in the high conscientiousness category. Conversely, teachers with high curiosity inquiry show a different pattern, with 38.6% in low conscientiousness and 61.4% in high conscientiousness. As the p-value is less than 0.01, the null hypothesis is rejected, verifying a statistically significant relationship between curiosity inquiry and conscientiousness levels.

In simple terms, the results show that in the high curiosity inquiry group, most teachers (61.4%) have high conscientiousness, whereas in the low curiosity inquiry group, the majority (80.6%) have low conscientiousness. This means that teachers who are more curious and eager to learn are more likely to be organized, responsible, and diligent in their work. Alternatively, limited curiosity is often linked with lower levels of responsibility and carefulness. This association recommends that promoting curiosity among educators may also enhance their conscientious work habits, which can lead to improved academic quality, better adherence to duties, and stronger institutional reliability.

3). Level of OBC and Its Association with Open Mindedness

a) Association Between Level of Open Mindedness and Level of Altruism

H.0.1: There is no significant association between level of open mindedness and level of altruism among the teachers of higher educational institutions in Kerala

Table 5.11

Chi-Square for Association between Level of Open Mindedness and Level of Altruism among the Teachers of Higher Educational Institutions in Kerala

Level of Open mindness	Level of Altruism		Total	Chi-Square value	p value
	Low level	High Level			
Low level	270 (66.7%)	135 (33.3%)	405 (100%)	89.16	<0.001**
High level	36 (22.6%)	123 (77.4%)	159 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test declare a statistically significant association between the level of open-mindedness and the level of altruism among teachers in higher educational institutions (Chi-square value = 89.16, $p < 0.001$). In the low open-mindedness group, 66.7% of teachers fall into the low altruism category, whereas 33.3% are in the high altruism category. In contrast, among those with high open-mindedness, only 22.6% display low altruism, whereas a majority of 77.4% demonstrate high altruism. Since the p-value is less than 0.01, the null hypothesis is rejected, generating a significant relationship between open-mindedness and altruism levels.

In short, in the low open-mindedness group, the predominant category is low altruism (66.7%), while in the high open-mindedness group, the predominant category is high altruism (77.4%). This pattern exhibits that teachers who are more receptive to new ideas and perspectives tend to be much more selfless and cooperative, whereas those less open-minded are more likely to exhibit lower altruistic tendencies. Such an association specifies that encouraging open-mindedness among educators could strengthen collaborative spirit, empathy, and mutual support, ultimately enhancing the social climate within higher educational institutions.

b) Association Between Level of Open Mindedness and Level of Courtesy

H.0.1: There is no significant association between level of open mindedness and level of courtesy among the teachers of higher educational institutions in Kerala

Table 5.12

Chi-Square for Association between Level of Open Mindedness and Level of Courtesy among the Teachers of Higher Educational Institutions in Kerala

Level of Open mindness	Level of Courtesy		Total	Chi-Square value	p value
	Low level	High Level			
Low level	276 (68.1%)	129 (31.9%)	405 (100%)	111.72	<0.001**
High level	30 (18.9%)	129 (81.1%)	159 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

**denotes significant at 1%level

The Chi-square analysis declares a statistically significant association between the level of open-mindedness and the level of courtesy among teachers in higher

educational institutions (Chi-square value = 111.72, p < 0.001). In the low open-mindedness group, 68.1% of teachers are in the low courtesy category, whereas 31.9% are in the high courtesy category. Conversely, in the high open-mindedness group, only 18.9% fall under low courtesy, while 81.1% are in the high courtesy category. Since the p-value is less than 0.01, the null hypothesis is rejected, verifying a significant relationship between open-mindedness and courtesy levels.

In a nut shell, the results indicate that in the low open-mindedness group, the dominant category is low courtesy (68.1%), whereas in the high open-mindedness group, the dominant category is high courtesy (81.1%). This trend indicates that teachers who are more receptive to new perspectives and adaptable to change tend to be more polite, respectful, and considerate in their professional interactions. On the other hand, lower open-mindedness often corresponds with reduced courtesy levels. This association underlines that boosting open-mindedness among educators could enhance interpersonal respect and positive social conduct, contributing to a more harmonious and collaborative academic environment.

c) Association Between Level of Open Mindedness and Level of Virtue

H.0.1: There is no significant association between level of open mindedness and level of virtue among the teachers of higher educational institutions in Kerala

Table 5.13

Chi-Square for Association between Level of Open Mindedness and Level of Virtue among the Teachers of Higher Educational Institutions in Kerala

Level of Open mindedness	Level of Virtue		Total	Chi-Square value	p value
	Low level	High Level			
Low level	264 (65.2%)	141 (31.9%)	405 (100%)	123.40	<0.001**
High level	21 (13.2%)	138 (86.8%)	159 (100%)		
Total	285 (50.5%)	279 (49.5%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test findings indicate a statistically significant association between the level of open-mindedness and the level of virtue among teachers in

higher educational institutions (Chi-square value = 123.40, $p < 0.001$). In the low open-mindedness group, 65.2% of teachers fall into the low virtue category, whereas 34.8% are in the high virtue category. Conversely, in the high open-mindedness group, only 13.2% have low virtue, whereas 86.8% demonstrate high virtue. Since the p-value is less than 0.01, the null hypothesis is rejected, affirming a significant relationship between open-mindedness and virtue levels.

In plain terms, the data exhibits that in the low open-mindedness group, the more common trait is low virtue (65.2%), while in the high open-mindedness group, the more common trait is high virtue (86.8%). This pattern proposes that teachers who are more open to diverse viewpoints, change, and innovative thinking tend to uphold stronger moral principles and ethical standards. On the other hand, those with less open-mindedness are more disposed toward lower levels of virtue. This association highlights that nurturing open-mindedness among teachers could also encourage the cultivation of high moral values, ultimately strengthening the ethical foundation and integrity within academic institutions.

d) Association Between Level of Open Mindedness and Level of Sportsmanship

H.0.1: There is no significant association between level of open mindedness and level of sportsmanship among the teachers of higher educational institutions in Kerala

Table 5.14

Chi-Square for Association between Level of Open Mindedness and Level of Sportsmanship among the Teachers of Higher Educational Institutions in Kerala

Level of Open mindness	Level of Sportsmanship		Total	Chi-Square value	p value
	Low level	High Level			
Low level	300 (65.2%)	105 (31.9%)	405 (100%)	65.30	<0.001**
High level	60 (37.7%)	99 (62.3%)	159 (100%)		
Total	360 (63.8%)	204 (36.2%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test results disclose a statistically significant association between the level of open-mindedness and the level of sportsmanship among teachers in higher

educational institutions (Chi-square value = 65.30, $p < 0.001$). Within the low open-mindedness group, 65.2% of teachers are in the low sportsmanship category, while 34.8% are in the high sportsmanship category. In contrast, in the high open-mindedness group, 37.7% have low sportsmanship, whereas 62.3% show high sportsmanship. Since the p-value is less than 0.01, the null hypothesis is rejected, suggesting a significant relationship between open-mindedness and sportsmanship levels.

From a practical angle, the results express that low sportsmanship is more common in the low open-mindedness group (65.2%), while high sportsmanship is more prevalent in the high open-mindedness group (62.3%). This proposes that teachers who are more open to new perspectives, flexible in thinking, and accepting of change are more likely to display fairness, respect, and cooperative behavior in professional settings. On the other hand, those with lower open-mindedness tend to have weaker sportsmanship qualities. This association specifies that initiatives aimed at nurturing open-minded attitudes in the teaching community could also encourage fairness, team spirit, and mutual respect, ultimately contributing to a more collaborative and positive institutional environment.

e) Association Between Level of Open Mindedness and Level of Conscientiousness

H.0.1: There is no significant association between level of open mindedness and level of conscientiousness among the teachers of higher educational institutions in Kerala

Table 5.15

Chi-Square for Association between Level of Open Mindedness and Level of Conscientiousness among the Teachers of Higher Educational Institutions in Kerala

Level of Open mindness	Level of Conscientiousness		Total	Chi-Square value	p value
	Low level	High Level			
Low level	336 (83.0%)	69 (17.0%)	405 (100%)	103.62	<0.001**
High level	63 (39.6%)	96 (60.4%)	159 (100%)		
Total	399 (70.7%)	165 (29.3%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test results reveal a statistically significant association between the level of open-mindedness and the level of conscientiousness among teachers in higher

educational institutions (Chi-square value = 103.62, $p < 0.001$). In the low open-mindedness group, 83.0% of teachers fall under the low conscientiousness category, whereas 17.0% are in the high conscientiousness category. Conversely, in the high open-mindedness group, 39.6% have low conscientiousness, whereas 60.4% demonstrate high conscientiousness. Across the total sample, 70.7% of respondents belong to the low conscientiousness group, and 29.3% are in the high conscientiousness group. Since the p-value is less than 0.01, the null hypothesis is rejected, affirming a significant relationship between open-mindedness and conscientiousness levels.

In simpler terms, low conscientiousness is more prevalent among teachers with low open-mindedness (83.0%), while high conscientiousness is more common among those with high open-mindedness (60.4%). This finding implies that teachers who are more open to new perspectives and adaptable in their thinking tend to be more responsible, organized, and diligent in their work. On the other hand, limited open-mindedness is often linked with weaker conscientiousness, which may impact work quality and reliability. This association emphasizes that encouraging open-minded attitudes among educators could help enhance their sense of responsibility and work discipline, ultimately improving academic standards and institutional performance.

4) Level of OCB and Its Association with Diversity

a) Association Between Level of Diversity and Level of Altruism

H.0.1: There is no significant association between level of diversity and level of altruism among the teachers of higher educational institutions in Kerala

Table 5.16

Chi-Square for Association between Level of Diversity and Level of Altruism among the Teachers of Higher Educational Institutions in Kerala

Level of Diversity	Level of Altruism		Total	Chi-Square value	p value
	Low level	High Level			
Low level	252 (73.0%)	93 (27.0%)	345 (100%)	126.36	<0.001**
High level	54 (24.7%)	165 (75.3%)	219 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test results express a statistically significant association between the level of diversity and the level of altruism among teachers in higher educational institutions (Chi-square value = 126.36, $p < 0.001$). In the low diversity group, 73.0% of teachers are in the low altruism category, while 27.0% are in the high altruism category. On the other hand, in the high diversity group, only 24.7% report low altruism, whereas 75.3% exhibit high altruism. Since the p-value is less than 0.01, the null hypothesis is rejected, verifying a significant relationship between diversity levels and altruism levels.

In practical terms, low altruism is more prominent in the low diversity group (73.0%), while high altruism is more common in the high diversity group (75.3%). This pattern proposes that teachers working in environments with greater diversity tend to be more selfless, supportive, and willing to help others, possibly due to broader exposure to different perspectives and experiences. In contrast, lower diversity appears to be linked with weaker altruistic tendencies. This association specifies that fostering diversity in educational institutions could also promote a stronger spirit of cooperation, empathy, and mutual support among teachers, thereby contributing to a more inclusive and collaborative institutional culture.

b) Association Between Level of Diversity and Level of Courtesy

H.0.1: There is no significant association between level of diversity and level of courtesy among the teachers of higher educational institutions in Kerala

Table 5.17

Chi-Square for Association between Level of Diversity and Level of Courtesy among the Teachers of Higher Educational Institutions in Kerala

Level of Diversity	Level of Courtesy		Total	Chi-Square value	p value
	Low level	High Level			
Low level	252 (73.0%)	93 (27.0%)	345 (100%)	126.36	<0.001**
High level	54 (24.7%)	165 (75.3%)	219 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test results demonstrate a statistically significant association between the level of diversity and the level of courtesy among teachers in higher educational institutions (Chi-square value = 126.36, $p < 0.001$). In the low diversity group, 73.0% of teachers are in the low courtesy category, whereas 27.0% are in the high courtesy category. In contrast, in the high diversity group, only 24.7% have low courtesy, whereas 75.3% express high courtesy. Looking at the total sample, 54.3% of respondents belong to the low courtesy group, and 45.7% are in the high courtesy group. Since the p-value is less than 0.01, the null hypothesis is rejected, affirming a significant relationship between diversity and courtesy levels.

From a practical standpoint, low courtesy is more dominant in the low diversity group (73.0%), while high courtesy is more common in the high diversity group (75.3%). This specifies that teachers working in more diverse environments are more likely to be polite, respectful, and considerate in their professional interactions, possibly due to increased cultural exposure and understanding. In contrast, limited diversity appears to be linked with lower levels of courtesy. This association highlights that encouraging diversity within educational institutions could enhance mutual respect, improve workplace relationships, and create a more harmonious and inclusive academic atmosphere.

c) Association Between Level of Diversity and Level of Virtue

H.0.1: There is no significant association between level of diversity and level of virtue among the teachers of higher educational institutions in Kerala

Table 5.18

Chi-Square for Association between Level of Diversity and Level of Virtue among the Teachers of Higher Educational Institutions in Kerala

Level of Diversity	Level of Virtue		Total	Chi-Square value	p value
	Low level	High Level			
Low level	228 (66.1%)	117 (33.9%)	345 (100%)	86.001	<0.001**
High level	57 (26.0%)	162 (74.0%)	219 (100%)		
Total	285 (50.5%)	279 (49.5%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test results present a statistically significant association between the level of diversity and the level of virtue among teachers in higher educational institutions (Chi-square value = 86.001, $p < 0.001$). In the case of low diversity group, 66.1% of teachers fall in the low virtue category, while 33.9% are in the high virtue category. Oppositely, in the high diversity group, only 26.0% are in the low virtue category, whereas 74.0% are in the high virtue category. Since the p-value is less than 0.01, the null hypothesis is rejected, confirming a significant relationship between diversity and virtue levels.

To sum up, low virtue is more common in the low diversity group (66.1%), while high virtue is more dominant in the high diversity group (74.0%). This pattern put forward that exposure to a more diverse environment is linked with stronger moral values, ethical behavior, and principled conduct among teachers. On the other hand, limited diversity appears to relatively with comparatively weaker expressions of virtue. This association highlights that promoting diversity in educational institutions may not only add to cultural perspectives but also help strengthen moral integrity and ethical standards within the teaching community, ultimately fostering a more value-driven academic culture.

d) Association Between Level of Diversity and Level of Sportsmanship

H.0.1: There is no significant association between level of diversity and level of sportsmanship among the teachers of higher educational institutions in Kerala

Table 5.19

Chi-Square for Association between Level of Diversity and Level of Sportsmanship among the Teachers of Higher Educational Institutions in Kerala

Level of Diversity	Level of Sportsmanship		Total	Chi-Square value	p value
	Low level	High Level			
Low level	267 (77.4%)	78 (22.6%)	345 (100%)	70.77	<0.001**
High level	93 (42.5%)	126 (57.5%)	219 (100%)		
Total	360 (63.8%)	204 (36.2%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test results convey a statistically significant association between the level of diversity and the level of sportsmanship among teachers in higher educational institutions (Chi-square value = 70.77, $p < 0.001$). In the low diversity group, 77.4% of teachers are in the low sportsmanship category, whereas 22.6% are in the high sportsmanship category. On the other hand, in the high diversity group, 42.5% have low sportsmanship, whereas 57.5% demonstrate high sportsmanship. Since the p-value is less than 0.01, the null hypothesis is rejected, confirming that diversity levels and sportsmanship levels are significantly associated.

To conclude, low sportsmanship is more dominant among teachers in the low diversity group (77.4%), whereas high sportsmanship is more common among those in the high diversity group (57.5%). This trend designates that exposure to diverse perspectives and cultural experiences may encourage teachers to be fairer, more respectful, and more cooperative in their professional interactions. Alternatively, limited diversity appears to be linked with weaker sportsmanship traits. This association implies that fostering diversity in educational institutions can help strengthen fairness, mutual respect, and teamwork, which are important for building a positive and collaborative academic environment.

e) Association Between Level of Diversity and Level of Conscientiousness

H.0.1: There is no significant association between level of diversity and level of conscientiousness among the teachers of higher educational institutions in Kerala

Table 5.20

Chi-Square for Association between Level of Diversity and Level of Conscientiousness among the Teachers of Higher Educational Institutions in Kerala

Level of Diversity	Level of Conscientiousness		Total	Chi-Square value	p value
	Low level	High Level			
Low level	291 (84.3%)	54 (15.7%)	345 (100%)	79.43	<0.001**
High level	108 (49.3%)	111 (50.7%)	219 (100%)		
Total	399 (70.7%)	165 (29.3%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test results display a statistically significant association between the level of diversity and the level of conscientiousness among teachers in higher educational institutions (Chi-square value = 79.43, $p < 0.001$). In the case of low diversity group, 84.3% of teachers are in the low conscientiousness category, while 15.7% are in the high conscientiousness category. In contrast, in the high diversity group, 49.3% fall under low conscientiousness, while 50.7% demonstrate high conscientiousness. Since the p-value is less than 0.01, the null hypothesis is rejected, verifying a significant relationship between diversity levels and conscientiousness levels.

To put it simply, low conscientiousness is more dominant among teachers in the low diversity group (84.3%), while high conscientiousness is more prevalent in the high diversity group (50.7%). This suggests that teachers expressed to greater diversity are more likely to be responsible, organized, and diligent in fulfilling their professional duties, possibly due to broader perspectives and collaborative experiences. Alternatively, limited diversity is linked with weaker conscientiousness traits, which could impact work discipline and reliability. This association signifies that promoting diversity within educational institutions may not only enrich cultural inclusivity but also strengthen the sense of accountability and professional commitment among teachers.

5) Level of OCB and Its Association with Problem Solving Ability

a) Association Between Level of Problem-Solving Ability and Level of Altruism

H.0.1: There is no significant association between level of problem-solving ability and level of altruism among the teachers of higher educational institutions in Kerala

Table 5.21

Chi-Square for Association between Level of Problem-Solving Ability and Level of Altruism among the Teachers of Higher Educational Institutions in Kerala

Level of Problem-solving ability	Level of Altruism		Total	Chi-Square value	p value
	Low level	High Level			
Low level	276 (68.1%)	129 (31.9%)	405 (100%)	111.72	<0.001**
High level	30 (18.9%)	129 (81.1%)	159 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test results point out a statistically significant association between the level of problem-solving ability and the level of altruism among teachers in higher educational institutions (Chi-square value = 111.72, $p < 0.001$). In the low problem-solving ability group, 68.1% of teachers are in the low altruism category, although 31.9% are in the high altruism category. In contrast, in the high problem-solving ability group, only 18.9% fall under low altruism, whereas 81.1% demonstrate high altruism. Since the p-value is less than 0.01, the null hypothesis is rejected, discovering a significant relationship between problem-solving ability and altruism levels.

To summarize, low altruism is more common among teachers with low problem-solving ability (68.1%), while high altruism is more prevalent among those with high problem-solving ability (81.1%). This suggests that teachers who are better at observing issues, analysing situations, and finding effective solutions are also more likely to demonstrate selflessness and willingness to help others. Alternatively, limited problem-solving skills appear to be associated with lower altruistic tendencies. This relationship highlights that improving problem-solving abilities of teachers could have the added benefit of fostering a more cooperative, empathetic, and supportive culture within higher educational institutions.

b) Association Between Level of Problem-Solving Ability and Level of Courtesy

H.0.1: There is no significant association between level of problem-solving ability and level of courtesy among the teachers of higher educational institutions in Kerala

Table 5.22

Chi-Square for Association between Level of Problem-Solving Ability and Level of Courtesy among the Teachers of Higher Educational Institutions in Kerala

Level of Problem solving ability	Level of Courtesy		Total	Chi-Square value	p value
	Low level	High Level			
Low level	267 (65.9%)	138 (34.1%)	405 (100%)	78.83	<0.001**
High level	39 (24.5%)	120 (75.5%)	159 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test results demonstrate a statistically significant association between the level of problem-solving ability and the level of courtesy among teachers in higher educational institutions (Chi-square value = 78.83, $p < 0.001$). In the low problem-solving ability group, 65.9% of teachers are in the low courtesy category, whereas 34.1% are in the high courtesy category. In contrast, in the high problem-solving ability group, only 24.5% fall under low courtesy, even though 75.5% demonstrate high courtesy. Since the p-value is less than 0.01, the null hypothesis is disputed, confirming a significant relationship between problem-solving ability and courtesy levels.

In simple terms, low courtesy is more dominant among teachers with low problem-solving ability (65.9%), while high courtesy is more prevalent among those with high problem-solving ability (75.5%). This suggests that teachers who can effectively analyse issues and enhance solutions tend to be more respectful, polite, and considerate in their interactions. On the other hand, weaker problem-solving skills appear to be linked with lower courtesy levels. This association suggests that strengthening problem-solving competencies among educators could also enhance professional respect and positive communication, contributing to a more harmonious and collaborative academic environment.

c) Association Between Level of Problem-Solving Ability and Level of Virtue

H.0.1: There is no significant association between level of problem-solving ability and level of virtue among the teachers of higher educational institutions in Kerala

Table 5.23

Chi-Square for Association between Level of Problem-Solving Ability and Level of Virtue among the Teachers of Higher Educational Institutions in Kerala

Level of Problem solving ability	Level of Virtue		Total	Chi-Square value	p value
	Low level	High Level			
Low level	246 (60.7%)	159 (39.3%)	405 (100%)	59.89	<0.001**
High level	39 (24.5%)	120 (75.5%)	159 (100%)		
Total	285 (50.5%)	279 (49.5%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test results stipulate a statistically significant association between the level of problem-solving ability and the level of virtue among teachers in higher educational institutions (Chi-square value = 59.89, $p < 0.001$). In the low problem-solving ability group, 60.7% of teachers are in the low virtue category, although 39.3% are in the high virtue category. In contrast, in the high problem-solving ability group, only 24.5% fall under low virtue, contrarily 75.5% demonstrate high virtue. Since the p-value is below 0.01, the null hypothesis is rejected, confirming a significant relationship between problem-solving ability and virtue levels.

In conclusion, the data reveals that low virtue is more dominant among teachers with low problem-solving ability (60.7%), while high virtue is more common among those with high problem-solving ability (75.5%). This proposes that the capacity to effectively analyze problems and devise appropriate solutions may go hand-in-hand with stronger moral principles and ethical conduct. Teachers with better problem-solving skills may be more prepared to act with integrity and fairness, contributing positively to the institutional culture. Conversely, limited problem-solving ability may be associated with weaker attachment to ethical values. This relationship underlines the consequence of cultivating problem-solving competencies as part of professional development initiatives in higher educational institutions.

d) Association Between Level of Problem-Solving Ability and Level of Sportsmanship

H.0.1: There is no significant association between level of problem-solving ability and level of sportsmanship among the teachers of higher educational institutions in Kerala

Table 5.24

Chi-Square for Association between Level of Problem-Solving Ability and Level of Sportsmanship among the Teachers of Higher Educational Institutions in Kerala

Level of Problem solving ability	Level of Sportsmanship		Total	Chi-Square value	p value
	Low level	High Level			
Low level	312 (77.0%)	93 (23.0%)	405 (100%)	108.53	<0.001**
High level	48 (30.2%)	111 (69.8%)	159 (100%)		
Total	360 (63.8%)	204 (36.2%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test results present a statistically significant association between the level of problem-solving ability and the level of sportsmanship among teachers in higher educational institutions (Chi-square value = 108.53, $p < 0.001$). In the case of low problem-solving ability group, 77.0% of teachers are in the low sportsmanship category, while 23.0% are in the high sportsmanship category. In contrast, in the high problem-solving ability group, only 30.2% fall under low sportsmanship, whereas 69.8% demonstrate high sportsmanship. Since the p-value is less than 0.01, the null hypothesis is deneid, confirming a significant relationship between problem-solving ability and sportsmanship levels.

Simply, low sportsmanship is more prevalent among teachers with low problem-solving ability (77.0%), whereas high sportsmanship is more common among those with high problem-solving ability (69.8%). This denote that teachers who can assess situations effectively and find practical solutions are more likely to display fairness, respect, and cooperative behavior in their professional interactions. On the other hand, weaker problem-solving skills appear to align with lower sportsmanship qualities. This association suggests that developing problem-solving abilities among educators could not only improve decision-making and conflict resolution but also foster a more respectful, team-oriented, and collaborative institutional culture.

e) Association Between Level of Problem-Solving Ability and Level of Conscientiousness

H.0.1: There is no significant association between level of problem-solving ability and level of conscientiousness among the teachers of higher educational institutions in Kerala

Table 5.25

Chi-Square for Association between Level of Problem-Solving Ability and Level of Conscientiousness among the Teachers of Higher Educational Institutions in Kerala

Level of Problem solving ability	Level of Conscientiousness		Total	Chi-Square value	p value
	Low level	High Level			
Low level	339 (83.7%)	66 (16.3%)	405 (100%)	116.56	<0.001**
High level	60 (37.7%)	99 (62.3%)	159 (100%)		
Total	399 (70.7%)	165 (29.3%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test results suggest a statistically significant association between the level of problem-solving ability and the level of conscientiousness among teachers in higher educational institutions (Chi-square value = 116.56, $p < 0.001$). In the case of low problem-solving ability group, 83.7% of teachers are in the low conscientiousness category, while 16.3% are in the high conscientiousness category. In contrast, in the high problem-solving ability group, 37.7% fall under low conscientiousness, whereas 62.3% demonstrate high conscientiousness. Since the p-value is less than 0.01, the null hypothesis is refused, confirming that problem-solving ability and conscientiousness levels are significantly related.

Ultimately, low conscientiousness is far more common among teachers with low problem-solving ability (83.7%), while high conscientiousness is more prevalent among those with high problem-solving ability (62.3%). This means that teachers who have strong problem-solving skills are more likely to be organized, reliable, and diligent in their professional duties. Alternatively, weaker problem-solving skills appear to be linked with less disciplined and less responsible work habits. This association specifies that enhancing problem-solving abilities among educators could also strengthen their conscientiousness, thereby improving work quality, task completion, and overall institutional efficiency.

Section B

LEVEL OF OCB- (OCB I AND O) AND ITS ASSOCIATION WITH PERSONALITY TRAITS

The following are the personality traits

1) **Agreeableness**
2) **Emotional stability**
3) **Proactive personality**
4) **Openness to experience**
5) **Humility**

1) Level of OCB and Its Association with Agreeableness

a) Association Between Level Of Agreeableness And Level Of Altruism

H.0.1: There is no significant association between level of agreeableness and level of altruism among the teachers of higher educational institutions in Kerala

Table 5.26

Chi-Square for Association between Level of Agreeableness and Level of Altruism among the Teachers of Higher Educational Institutions in Kerala

Level of agreeableness	Level of Altruism		Total	Chi-Square value	p value
	Low level	High Level			
Low level	213 (70.3%)	90 (29.7%)	303 (100%)	67.88	<0.001**
High level	93 (35.6%)	168 (64.4%)	261 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test results reveal a statistically significant association between the level of agreeableness and the level of altruism among teachers in higher educational institutions (Chi-square value = 67.88, $p < 0.001$). In the low agreeableness group, 70.3% of teachers are in the low altruism category, whereas 29.7% are in the high altruism category. Conversely, in the high agreeableness group, 35.6% fall under low altruism, while 64.4% are in the high altruism category. Since the p-value is less than 0.01, the null hypothesis is rejected, affirming that agreeableness and altruism levels are significantly related.

In other words, low altruism is more dominate among teachers with low agreeableness (70.3%), while high altruism is more prevalent among those with high agreeableness (64.4%). This means that teachers who are more cooperative, understanding, and accommodating are more likely to engage in selfless and supportive actions toward others. On the other hand, lower agreeableness frequently corresponds with reduced willingness to help or support peers. This association indicates that nurturing agreeableness among educators could help to foster a more

caring, collaborative, and socially responsible academic environment, ultimately benefiting both colleagues and students.

b) Association Between Level of Agreeableness and Level of Courtesy

H.0.1: There is no significant association between level of agreeableness and level of courtesy among the teachers of higher educational institutions in Kerala

Table 5.27

Chi-Square for Association between Level of Agreeableness and Level of Courtesy among the Teachers of Higher Educational Institutions in Kerala

Level of agreeableness	Level of Courtesy		Total	Chi-Square value	p value
	Low level	High Level			
Low level	237 (78.2%)	66 (21.8%)	303 (100%)	151.48	<0.001**
High level	69 (26.4%)	192 (73.6%)	261 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test results point to a statistically significant association between the level of agreeableness and the level of courtesy among teachers in higher educational institutions (Chi-square value = 151.48, $p < 0.001$). In the case of low agreeableness group, 78.2% of teachers are in the low courtesy category, while 21.8% are in the high courtesy category. Regarding the high agreeableness group, only 26.4% fall under low courtesy, whereas 73.6% are in the high courtesy category. Since the p-value is less than 0.01, the null hypothesis is dismissed, confirming a significant relationship between agreeableness and courtesy levels.

In brief, low courtesy is far more common among teachers with low agreeableness (78.2%), while high courtesy is the dominant trait among those with high agreeableness (73.6%). This pattern demonstrates that teachers who are more cooperative, understanding, and empathetic tend to be more polite, respectful, and considerate toward others. On the other hand, lower agreeableness is frequently

linked with less courteous behavior, which can influence workplace harmony. This association proposes that developing agreeableness in the teaching community could promote greater mutual respect and smoother interpersonal relations, contributing to a more positive and collaborative academic environment.

c) Association Between Level of Agreeableness and Level of Virtue

H.0.1: There is no significant association between level of agreeableness and level of virtue among the teachers of higher educational institutions in Kerala

Table 5.28

Chi-Square for Association between Level of Agreeableness and Level of Virtue among the Teachers of Higher Educational Institutions in Kerala

Level of agreeableness	Level of Virtue		Total	Chi-Square value	p value
	Low level	High Level			
Low level	216 (71.3%)	87 (28.7%)	303 (100%)	112.83	<0.001**
High level	69 (26.4%)	192 (73.6%)	261 (100%)		
Total	285 (50.5%)	279 (49.5%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test results present a statistically significant association between the level of agreeableness and the level of virtue among teachers in higher educational institutions (Chi-square value = 112.83, $p < 0.001$). In the low agreeableness group, 71.3% of teachers are in the low virtue category, whereas 28.7% are in the high virtue category. Alternatively, in the high agreeableness group, only 26.4% fall under low virtue, whereas 73.6% demonstrate high virtue. Since the p-value is less than 0.01, the null hypothesis is refused, confirming a significant relationship between agreeableness and virtue levels.

To end up, low virtue is more prevalent among teachers with low agreeableness (71.3%), while high virtue is more common among those with high agreeableness (73.6%). This stipulate that teachers who are more cooperative, empathetic, and

understanding tend to uphold stronger moral values and ethical standards. Alternatively, lower agreeableness is often linked with weaker adherence to virtuous behavior. This association recommending that fostering agreeableness within the teaching community could also strengthen moral integrity and ethical practices, ultimately contributing to a more principled and value-driven academic environment.

d) Association Between Level of Agreeableness and Level of Sportsmanship

H.0.1: There is no significant association between level of agreeableness and level of sportsmanship among the teachers of higher educational institutions in Kerala

Table 5.29

Chi-Square for Association between Level of Agreeableness and Level of Sportsmanship among the Teachers of Higher Educational Institutions in Kerala

Level of agreeableness	Level of Sportsmanship		Total	Chi-Square value	p value
	Low level	High Level			
Low level	261 (86.1%)	42 (13.9%)	303 (100%)	141.14	<0.001**
High level	99 (37.9%)	162 (62.1%)	261 (100%)		
Total	360 (63.8%)	204 (36.2%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test results disclose a statistically significant association between the level of agreeableness and the level of sportsmanship among teachers in higher educational institutions (Chi-square value = 141.14, $p < 0.001$). In the case of low agreeableness group, 86.1% of teachers are in the low sportsmanship category, while only 13.9% are in the high sportsmanship category. For the high agreeableness group, 37.9% fall under low sportsmanship, whereas 62.1% demonstrate high sportsmanship. Since the p-value is less than 0.01, the null hypothesis is rejected, find outing a significant relationship between agreeableness and sportsmanship levels.

To finish, low sportsmanship is far more prominent among teachers with low agreeableness (86.1%), while high sportsmanship is more common among those with high agreeableness (62.1%). This pattern proposes that teachers who are more cooperative, empathetic, and understanding are also more likely to show fairness, respect, and team spirit in professional settings. In contrast, lower agreeableness tends to align with weaker sportsmanship, which can hinder harmonious workplace relationships. This association specifies that encouraging and developing agreeableness among teachers could foster a more respectful, collaborative, and supportive institutional environment.

e) Association Between Level of Agreeableness and Level of Conscientiousness

H.0.1: There is no significant association between level of agreeableness and level of conscientiousness among the teachers of higher educational institutions in Kerala

Table 5.30

Chi-Square for Association between Level of Agreeableness and Level of Conscientiousness among the Teachers of Higher Educational Institutions in Kerala

Level of agreeableness	Level of Conscientiousness		Total	Chi-Square value	p value
	Low level	High Level			
Low level	264 (87.1%)	39 (12.9%)	303 (100%)	84.92	<0.001**
High level	135 (51.7%)	126 (48.3%)	261 (100%)		
Total	399 (70.7%)	165 (29.3%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test results indicate a statistically significant association between the level of agreeableness and the level of conscientiousness among teachers in higher educational institutions (Chi-square value = 84.92, $p < 0.001$). In the low agreeableness group, 87.1% of teachers are in the low conscientiousness category, whereas 12.9% are in the high conscientiousness category. Conversely, in the high agreeableness group, 51.7% fall under low conscientiousness, whereas 48.3%

exhibit high conscientiousness. Since the p-value is less than 0.01, the null hypothesis is rejected, verifying a significant relationship between agreeableness and conscientiousness levels.

In short, low conscientiousness is far more prevalent among teachers with low agreeableness (87.1%), while high conscientiousness is comparatively more common among those with high agreeableness (48.3%). This trend shows that teachers who are more cooperative, empathetic, and understanding are also more likely to be responsible, organized, and diligent in fulfilling their professional duties. Consequently, lower agreeableness often aligns with weaker conscientiousness, which may impact work discipline and reliability. This association suggests that fostering agreeableness within the teaching community could also promote stronger work ethics and accountability, enhancing overall institutional performance.

2) Level of OCB and Its Association with Emotional Stability

a) Association Between Level of Emotional Stability and Level of Altruism

H.0.1: There is no significant association between level of emotional stability and level of altruism among the teachers of higher educational institutions in Kerala

Table 5.31

Chi-Square for Association between Level of Emotional Stability and Level of Altruism among the Teachers of Higher Educational Institutions in Kerala

Level of emotional stability	Level of Altruism		Total	Chi-Square value	p value
	Low level	High Level			
Low level	252 (66.1%)	129 (33.9%)	381 (100%)	66.84	<0.001**
High level	54 (29.5%)	129 (70.5%)	183 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test results designate a statistically significant association between the level of emotional stability and the level of altruism among teachers in

higher educational institutions (Chi-square value = 66.84, $p < 0.001$). For low emotional stability group, 66.1% of teachers are in the low altruism category, while 33.9% are in the high altruism category. In contrast, in the high emotional stability group, only 29.5% fall under low altruism, whereas 70.5% exhibit high altruism. Since the p-value is less than 0.01, the null hypothesis is rejected, affirming a significant relationship between emotional stability and altruism levels.

In short, low altruism is more prominent among teachers with low emotional stability (66.1%), while high altruism is more common among those with high emotional stability (70.5%). This proposes that teachers who are emotionally balanced and able to manage stress effectively are more inclined to act selflessly and help others. Consequently, those with lower emotional stability may be less willing or able to extend such support. This association specifies that fostering emotional stability among educators could enhance their willingness to cooperate, support peers, and contribute positively to the institutional community, thereby strengthening teamwork and overall workplace harmony.

b) Association Between Level of Emotional Stability and Level of Courtesy

H.0.1: There is no significant association between level of emotional stability and level of courtesy among the teachers of higher educational institutions in Kerala

Table 5.32

Chi-Square for Association between Level of Emotional Stability and Level of Courtesy among the Teachers of Higher Educational Institutions in Kerala

Level of emotional stability	Level of Courtesy		Total	Chi-Square value	p value
	Low level	High Level			
Low level	264 (69.3%)	117 (30.7%)	381 (100%)	106.96	<0.001**
High level	42 (23.0%)	141 (77.0%)	183 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test results exhibit a statistically significant association between the level of emotional stability and the level of courtesy among teachers in higher educational institutions (Chi-square value = 106.96, $p < 0.001$). In the low emotional stability group, 69.3% of teachers are in the low courtesy category, whereas 30.7% are in the high courtesy category. In contrast, in the high emotional stability group, only 23.0% fall under low courtesy, whereas 77.0% demonstrate high courtesy. Since the p-value is less than 0.01, the null hypothesis is rejected, affirming a significant relationship between emotional stability and courtesy levels.

In brief, low courtesy is more prominent among teachers with low emotional stability (69.3%), whereas high courtesy is more common among those with high emotional stability (77.0%). This pattern signifies that teachers who are emotionally steady, composed, and able to handle stress effectively are more likely to be polite, respectful, and considerate in their professional interactions. On the other hand, lower emotional stability is frequently linked with reduced courteous behavior. This association recommends that improving emotional stability among educators could develop professional respect and interpersonal harmony, thereby creating a more cooperative and supportive environment in higher educational institutions.

c) Association Between Level of Emotional Stability and Level of Virtue

H.0.1: There is no significant association between level of emotional stability and level of virtue among the teachers of higher educational institutions in Kerala

Table 5.33

Chi-Square for Association between Level of Emotional Stability and Level of Virtue among the Teachers of Higher Educational Institutions in Kerala

Level of emotional stability	Level of Virtue		Total	Chi-Square value	p value
	Low level	High Level			
Low level	243 (63.8%)	138 (36.2%)	381 (100%)	82.44	<0.001**
High level	42 (23.0%)	141 (77.0%)	183 (100%)		
Total	285 (50.5%)	279 (49.5%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test results stipulate a statistically significant association between the level of emotional stability and the level of virtue among teachers in higher educational institutions (Chi-square value = 82.44, $p < 0.001$). Among low emotional stability group, 63.8% of teachers are in the low virtue category, while 36.2% are in the high virtue category. In contrast, in the high emotional stability group, only 23.0% fall under low virtue, whereas 77.0% are in the high virtue category. Since the p-value is less than 0.01, the null hypothesis is rejected, proving a significant relationship between emotional stability and virtue levels.

To summarise, low virtue is more prevalent among teachers with low emotional stability (63.8%), while high virtue is more dominant among those with high emotional stability (77.0%). This trend put forward that teachers who can manage their emotions effectively and remain composed under pressure are more likely to uphold strong moral values and ethical standards. On the other hand, lower emotional stability frequently coincides with weaker adherence to virtuous conduct. This association emphasizes that initiatives aimed at enhancing emotional stability among educators could also strengthen moral integrity, ethical decision-making, and principled behavior, thereby fostering a more value-driven academic environment.

d) Association Between Level of Emotional Stability and Level of Sportsmanship

H.0.1: There is no significant association between level of emotional stability and level of sportsmanship among the teachers of higher educational institutions in Kerala

Table 5.34

Chi-Square for Association between Level of Emotional Stability and Level of Sportsmanship among the Teachers of Higher Educational Institutions in Kerala

Level of emotional stability	Level of Sportsmanship		Total	Chi-Square value	p value
	Low level	High Level			
Low level	291 (76.4%)	90 (23.6%)	381 (100%)	80.08	<0.001**
High level	69 (37.7%)	114 (62.3%)	183 (100%)		
Total	360 (63.8%)	204 (36.2%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test results demonstrate a statistically significant association between the level of emotional stability and the level of sportsmanship among teachers in higher educational institutions (Chi-square value = 80.08, $p < 0.001$). In the low emotional stability group, 76.4% of teachers are in the low sportsmanship category, while 23.6% are in the high sportsmanship category. In contrast, in the high emotional stability group, only 37.7% fall under low sportsmanship, whereas 62.3% exhibit high sportsmanship. Since the p-value is less than 0.01, the null hypothesis is rejected, determining a significant relationship between emotional stability and sportsmanship levels.

To put it briefly, low sportsmanship is more prevalent among teachers with low emotional stability (76.4%), while high sportsmanship is more common among those with high emotional stability (62.3%). This indicates that teachers who remain calm, composed, and emotionally balanced are more likely to demonstrate fairness, respect, and team spirit in their professional interactions. Otherwise, lower emotional stability is often linked with reduced sportsmanship, which can hinder collaborative and respectful workplace relationships. This association suggests that encourage emotional stability among educators could foster a more cooperative, fair-minded, and supportive institutional culture.

e) Association Between Level of Emotional Stability and Level of Conscientiousness

H.0.1: There is no significant association between level of emotional stability and level of conscientiousness among the teachers of higher educational institutions in Kerala

Table 5.35

Chi-Square for Association between Level of Emotional Stability and Level of Conscientiousness among the Teachers of Higher Educational Institutions in Kerala

Level of emotional stability	Level of Conscientiousness		Total	Chi-Square value	p value
	Low level	High Level			
Low level	288 (75.6%)	93 (24.4%)	381 (100%)	13.32	<0.001**
High level	111 (60.7%)	72 (39.3%)	183 (100%)		
Total	399 (70.7%)	165 (29.3%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test results express a statistically significant association between the level of emotional stability and the level of conscientiousness among teachers in higher educational institutions (Chi-square value = 13.32, $p < 0.001$). In the low emotional stability group, 75.6% of teachers fall in the low conscientiousness category, while 24.4% are in the high conscientiousness group. In comparison, in the high emotional stability group, 60.7% are in the low conscientiousness category, whereas 39.3% exhibit high conscientiousness. As the p-value is less than 0.01, the null hypothesis is rejected, proving that emotional stability and conscientiousness levels are significantly related.

In short, low conscientiousness is more frequent among teachers with low emotional stability (75.6%), while high conscientiousness is relatively more prevalent in the high emotional stability group (39.3%). This result suggests that teachers who are emotionally stable, able to manage stress, stay composed, and maintain balance. are more likely to be organized, dependable, and diligent in their professional responsibilities. On the other hand, lower emotional stability is often linked with less consistent and less disciplined work habits. This association highlights that strengthening emotional stability among educators may also develop their conscientiousness, ultimately contributing to better work performance, task completion, and overall institutional effectiveness.

3) Level of OCB and Its Association with Proactive Personality

a) Association Between Level of Proactive Personality and Level of Altruism

H.0.1: There is no significant association between level of proactive personality and level of altruism among the teachers of higher educational institutions in Kerala

Table 5.36

Chi-Square for Association between Level of Proactive Personality and Level of Altruism among the Teachers of Higher Educational Institutions in Kerala

Level of Proactive Personality	Level of Altruism		Total	Chi-Square value	p value
	Low level	High Level			
Low level	255 (66.4%)	129 (33.6%)	384 (100%)	71.57	<0.001**
High level	51 (28.3%)	129 (71.7%)	180 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test results denote a statistically significant association between the level of proactive personality and the level of altruism among teachers in higher educational institutions (Chi-square value = 71.57, $p < 0.001$). Among the low proactive personality group, 66.4% of teachers are in the low altruism category, while 33.6% are in the high altruism category. In comparison, in the high proactive personality group, only 28.3% fall under low altruism, whereas 71.7% demonstrate high altruism. Since the p-value is less than 0.01, the null hypothesis is rejected, affirming a significant relationship between proactive personality and altruism levels.

To put it simply, low altruism is more prevalent among teachers with low proactive personality (66.4%), while high altruism is more common among those with high proactive personality (71.7%). This recommends that teachers who take initiative, anticipate challenges, and actively seek opportunities to contribute are also more inclined to help others selflessly. On the other hand, teachers with less proactive tendencies may be less likely to occupy in altruistic acts. This association signifies that fostering proactive qualities among educators could enhance their willingness to support colleagues and students, thereby creating a more cooperative, empathetic, and service-oriented academic environment.

b) Association Between Level of Proactive Personality and Level of Courtesy

H.0.1: There is no significant association between level of proactive personality and level of courtesy among the teachers of higher educational institutions in Kerala

Table 5.37

Chi-Square for Association between Level of Proactive Personality and Level of Courtesy among the Teachers of Higher Educational Institutions in Kerala

Level of Proactive Personality	Level of Courtesy		Total	Chi-Square value	p value
	Low level	High Level			
Low level	267 (69.5%)	117 (30.5%)	384 (100%)	113.12	<0.001**
High level	39 (21.7%)	141 (78.3%)	180 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test results express a statistically significant association between the level of proactive personality and the level of courtesy among teachers in higher educational institutions (Chi-square value = 113.12, $p < 0.001$). Among the low proactive personality group, 69.5% of teachers are in the low courtesy category, while 30.5% are in the high courtesy category. In contrast, in the high proactive personality group, only 21.7% fall under low courtesy, whereas 78.3% shows high courtesy. Since the p-value is less than 0.01, the null hypothesis is disputed, confirming a significant relationship between proactive personality and courtesy levels.

In practical terms, low courtesy is more prominent among teachers with low proactive personality (69.5%), while high courtesy is more prevalent among those with high proactive personality (78.3%). This state that teachers who take initiative, anticipate situations, and act with foresight are also more likely to be polite, respectful, and considerate in their professional interactions. Conversely, a less proactive approach tends to align with lower levels of courtesy, which can impact workplace harmony. This association indicates that encouraging proactive traits among educators could lead to more respectful and constructive communication, thereby fostering a more positive and collaborative academic environment.

c) Association Between Level of Proactive Personality and Level of Virtue

H.0.1: There is no significant association between level of proactive personality and level of virtue among the teachers of higher educational institutions in Kerala

Table 5.38

Chi-Square for Association between Level of Proactive Personality and Level of Virtue among the Teachers of Higher Educational Institutions in Kerala

Level of Proactive Personality	Level of Virtue		Total	Chi-Square value	p value
	Low level	High Level			
Low level	246 (64.1%)	138 (35.9%)	384 (100%)	88.12	<0.001**
High level	39 (21.7%)	141 (78.3%)	180 (100%)		
Total	285 (50.5%)	279 (49.5%)	564 (100%)		

**denotes significant at 1%level

In above table, the Chi-square analysis examines the relationship between the level of proactive personality and the level of virtue among teachers in higher educational institutions in Kerala. In the respondents with a low level of proactive personality, 64.1 % fall in the low virtue category and 35.9 % in the high virtue category. In contrast, those with a high level of proactive personality show a remarkably different pattern, with only 21.7 % in the low virtue category and a majority of 78.3 % in the high virtue category. The Chi-square value of 88.12 with a p-value less than 0.001 indicates a statistically significant association at the 1 % level, leading to the rejection of the null hypothesis and confirming that the two variables are significantly related.

In simpler terms, this means that teachers who are more proactive tend to disclose higher levels of virtue, while those with lower proactive tendencies are more often found in the low virtue group. The results show a clear link between being proactive and having strong virtuous qualities, specifying that proactive individuals may be more inclined to uphold ethical values and moral conduct. This connection has practical indications for faculty development and recruitment strategies, as fostering proactivity among teachers could indirectly promote stronger ethical practices and positive role-modelling in academic environments.

d) Association Between Level of Proactive Personality and Level of Sportsmanship

H.0.1: There is no significant association between level of proactive personality and level of sportsmanship among the teachers of higher educational institutions in Kerala

Table 5.39

Chi-Square for Association between Level of Proactive Personality and Level of Sportsmanship among the Teachers of Higher Educational Institutions in Kerala

Level of Proactive Personality	Level of Sportsmanship		Total	Chi-Square value	p value
	Low level	High Level			
Low level	303 (78.9%)	81 (21.1%)	384 (100%)	118.45	<0.001**
High level	57 (31.7%)	123 (68.3%)	180 (100%)		
Total	360 (63.8%)	204 (36.2%)	564 (100%)		

**denotes significant at 1%level

In the above table, the Chi-square test evaluates the relationship between the level of proactive personality and the level of sportsmanship among teachers in higher educational institutions in Kerala. Among the respondents with a low proactive personality, 78.9% are in the low sportsmanship category and only 21.1% in the high sportsmanship category. On the other hand, those with a high proactive personality display the opposite trend, with 31.7% in the low sportsmanship category and a majority of 68.3% in the high sportsmanship category. The Chi-square value of 118.45 with a p-value less than 0.001 shows a statistically significant association at the 1% level, which means the null hypothesis is rejected.

In summary, the data clearly suggests that teachers who are more proactive are far more likely to exhibit high sportsmanship, while those with lower proactivity mostly fall into the low sportsmanship group. This link points to the possibility that proactive individuals are more inclined to exhibit fairness, respect, and cooperative spirit in professional interactions. For institutional policy, this implies that promoting and cultivating proactivity among faculty members could foster a more harmonious and collaborative academic environment, thereby improving both staff relationships and the overall work culture.

e) Association Between Level of Proactive Personality and Level of Conscientiouness

H.0.1: There is no significant association between level of proactive personality and level of conscientiousness among the teachers of higher educational institutions in Kerala

Table 5.40

Chi-Square for Association between Level of Proactive Personality and Level of Conscientiousness among the Teachers of Higher Educational Institutions in Kerala

Level of Proactive Personality	Level of Conscientiousness		Total	Chi-Square value	p value
	Low level	High Level			
Low level	303 (78.9%)	81 (21.1%)	384 (100%)	38.72	<0.001**
High level	96 (53.3%)	84 (46.7%)	180 (100%)		
Total	399 (70.7%)	165 (29.3%)	564 (100%)		

**denotes significant at 1%level

In the above data, the Chi-square analysis examines the association between the level of proactive personality and the level of conscientiousness among teachers in higher educational institutions in Kerala. For those with a low proactive personality, 78.9% fall in the low conscientiousness category and only 21.1% in the high conscientiousness category. In contrast, teachers with a high proactive personality reveal a more balanced distribution, with 53.3% in the low conscientiousness category and 46.7% in the high conscientiousness category. The Chi-square value of 38.72 with a p-value less than 0.001 stipulates a statistically significant relationship at the 1% level, leading to the rejection of the null hypothesis.

From a practical perspective, this result suggests that higher proactivity among teachers is linked with a higher likelihood of demonstrating conscientious behaviour, such as being organized, responsible, and dependable. In contrast, lower proactivity is often associated with reduced conscientiousness levels. This connection suggests that fostering proactive attitudes in teachers could indirectly enhance their sense of duty and commitment to tasks, thereby improving work quality, reliability, and overall institutional performance.

4) Level of OCB and Its Association with Openness to Experience

a) Association Between Level of Openness to Experience and Level of Altruism

H.0.1: There is no significant association between level of openness to experience and level of altruism among the teachers of higher educational institutions in Kerala

Table 5.41

Chi-Square for Association between Level of Openness to Experience and Level of Altruism among the Teachers of Higher Educational Institutions in Kerala

Level of Openness to Experience	Level of Altruism		Total	Chi-Square value	p value
	Low level	High Level			
Low level	249 (66.4%)	126 (33.6%)	375 (100%)	66.50	<0.001**
High level	57 (30.2%)	132 (69.8%)	189 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

**denotes significant at 1%level

In the given table, the Chi-square analysis analyses the relationship between the level of openness to experience and the level of altruism among teachers in higher educational institutions in Kerala. Among those with a low level of openness to experience, 66.4% fall in the low altruism category, whereas 33.6% are in the high altruism category. In contrast, teachers with a high level of openness to experience demonstrate a reversed trend, with only 30.2% in the low altruism category and a majority of 69.8% in the high altruism category. The Chi-square value of 66.50 with a p-value less than 0.001 implies a statistically significant association at the 1% level, resulting in the rejection of the null hypothesis.

In another words, these results indicate that teachers who are more open to new experiences are far more likely to display higher altruism, whereas those with lower openness tend to exhibit less altruistic behaviour. This relationship indicates that openness to experience, marked by curiosity, creativity, and willingness to embrace new ideas, may foster stronger helping tendencies, empathy, and concern for others. In institutional development, encouraging openness through professional development programs and collaborative activities could help cultivate a more supportive, community-oriented teaching environment.

b) Association Between Level of Openness to Experience and Level of Courtesy

H.0.1: There is no significant association between level of openness to experience and level of courtesy among the teachers of higher educational institutions in Kerala

Table 5.42

Chi-Square for Association between Level of Openness to Experience and Level of Courtesy among the Teachers of Higher Educational Institutions in Kerala

Level of Openness to Experience	Level of Courtesy		Total	Chi-Square value	p value
	Low level	High Level			
Low level	252 (67.2%)	123 (32.8%)	375 (100%)	75.55	<0.001**
High level	54 (28.6%)	135 (71.4%)	189 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

**denotes significant at 1%level

In the given table, the Chi-square analysis assesses the association between the level of openness to experience and the level of courtesy among teachers in higher educational institutions in Kerala. For teachers with a low level of openness to experience, a higher proportion (67.2%) fall in the low courtesy group, while only 32.8% are in the high courtesy group. In contrast, those with a high level of openness to experience display the reverse trend, with just 28.6% in the low courtesy group and a majority of 71.4% in the high courtesy group. The Chi-square value of 75.55 with a p-value less than 0.001 verifies a statistically significant relationship at the 1% level, leading to the rejection of the null hypothesis.

To sum up, the findings reveal that teachers with low openness to experience are more likely to exhibit lower levels of courtesy, whereas those with higher openness are more likely to show courteous behaviour. This shows that openness, characterized by adaptability, curiosity, and receptiveness to new ideas, tends to promote respectful and polite interactions, while limited openness may hinder such positive social conduct. For institutions, promoting openness through cross-disciplinary exposure, training, and collaborative programs could help reduce lower courtesy tendencies and enhance the overall civility within the academic environment.

c) Association Between Level of Openness to Experience and Level of Virtue

H.0.1: There is no significant association between level of openness to experience and level of virtue among the teachers of higher educational institutions in Kerala

Table 5.43

Chi-Square for Association between Level of Openness to Experience and Level of Virtue among the Teachers of Higher Educational Institutions in Kerala

Level of Openness to Experience	Level of Virtue		Total	Chi-Square value	p value
	Low level	High Level			
Low level	237 (63.2%)	138 (36.8%)	375 (100%)	71.84	<0.001**
High level	48 (25.4%)	141 (74.6%)	189 (100%)		
Total	285 (50.5%)	279 (49.5%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test performed to analyse the relationship between the level of openness to experience and the level of virtue among teachers in higher educational institutions in Kerala. Among those with a low level of openness to experience, 63.2% fall under the low virtue category, whereas 36.8% are in the high virtue category. Conversely, teachers with a high level of openness to experience disclose a contrasting distribution, with only 25.4% in the low virtue category and a substantial 74.6% in the high virtue category. The Chi-square value of 71.84 and the p-value less than 0.001 express a statistically significant association at the 1% level, which results in the rejection of the null hypothesis.

In plain terms, this means that teachers who are more open to new ideas and experiences are much more likely to possess and show strong virtues, whereas those with lower openness are more often found to have lower virtue levels. This association disclose that openness, marked by adaptability, creativity, and receptiveness, can nurture ethical conduct and moral integrity. For educational institutions, this expose that fostering openness through exposure to diverse perspectives, interdisciplinary activities, and collaborative projects may not only broaden thinking of teachers but also strengthen their value-based behaviour, thereby contributing to a more principled and inspiring academic environment**.**

d) Association Between Level of Openness to Experience and Level of Sportsmanship

H.0.1: There is no significant association between level of openness to experience and level of sportsmanship among the teachers of higher educational institutions in Kerala

Table 5.44

Chi-Square for Association between Level of Openness to Experience and Level of Sportsmanship among the Teachers of Higher Educational Institutions in Kerala

Level of Openness to Experience	Level of Sportsmanship		Total	Chi-Square value	p value
	Low level	High Level			
Low level	291 (77.6%)	84 (22.4%)	375 (100%)	91.90	<0.001**
High level	69 (36.5%)	120 (63.5%)	189 (100%)		
Total	360 (63.8%)	204 (36.2%)	564 (100%)		

**denotes significant at 1%level

The Chi-square analysis explores the association between the level of openness to experience and the level of sportsmanship among teachers in higher educational institutions in Kerala. For teachers with a low level of openness to experience, 77.6% are in the low sportsmanship group and 22.4% in the high sportsmanship group. In contrast, teachers with a high level of openness to experience show a markedly different pattern, with 36.5% in the low sportsmanship group and a majority of 63.5% in the high sportsmanship group. The Chi-square value of 91.90 with a p-value less than 0.001 expresses a statistically significant association at the 1% level, leading to the rejection of the null hypothesis.

In simple terms, these results display that higher openness to experience is strongly linked with better sportsmanship, while lower openness is associated with reduced sportsmanship levels. This recommends that teachers who are more open to new ideas and experiences tend to show greater fairness, cooperation, and respect in professional interactions, whereas limited openness may hinder such positive behaviour. For educational institutions, encourage openness through training, diverse exposure, and collaborative work could help uplift sportsmanship standards, contributing to a more cooperative and respectful academic atmosphere.

e) Association Between Level of Openness to Experience and Level of Conscientiousness

H.0.1: There is no significant association between level of openness to experience and level of conscientiousness among the teachers of higher educational institutions in Kerala

Table 5.45

Chi-Square for Association between Level of Openness to Experience and Level of Conscientiousness among the Teachers of Higher Educational Institutions in Kerala

Level of Openness to Experience	Level of Conscientiousness		Total	Chi-Square value	p value
	Low level	High Level			
Low level	294 (78.4%)	81 (21.6%)	375 (100%)	31.68	<0.001**
High level	105 (55.6%)	84 (44.4%)	189 (100%)		
Total	399 (70.7%)	165 (29.3%)	564 (100%)		

**denotes significant at 1%level

In the above table, the Chi-square analysis investigates the relationship between the level of openness to experience and the level of conscientiousness among teachers in higher educational institutions in Kerala. In case of those with a low level of openness to experience, 78.4% are in the low conscientiousness category and 21.6% in the high conscientiousness category. Alternatively, teachers with a high level of openness to experience show a different pattern, with 55.6% in the low conscientiousness category and 44.4% in the high conscientiousness category. The Chi-square value of 31.68 with a p-value less than 0.001 shows a statistically significant relationship at the 1% level, leading to the rejection of the null hypothesis.

In simpler terms, the results express that the highest share in the low openness group is concentrated in the low conscientiousness category (78.4%), while in the high openness group, the proportion in high conscientiousness is comparatively greater (44.4%). This means that teachers with higher openness to experience tend to display more responsible, organized, and dependable work behaviour, whereas those with low openness are predominantly less conscientious. For institutions, this stipulates that initiatives to enhance openness, through exposure to new ideas, cross-disciplinary engagement, and collaborative teaching, may help raise conscientiousness levels and improve professional reliability.

5) Level of OCB and its Association with Humility

a) Association Between Level of Humility and Level of Altruism

H.0.1: There is no significant association between level of humility and level of altruism among the teachers of higher educational institutions in Kerala

Table 5.46

Chi-Square for Association between Level of Humility and Level of Altruism among the Teachers of Higher Educational Institutions in Kerala

Level of Humility	Level of Altruism		Total	Chi-Square value	p value
	Low level	High Level			
Low level	210 (74.5%)	72 (25.5%)	282 (100%)	92.84	<0.001**
High level	96 (34.0%)	186 (66.0%)	282 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

**denotes significant at 1%level

In the above table, the Chi-square analysis analyses the association between the level of humility and the level of altruism among teachers in higher educational institutions in Kerala. For teachers with a low level of humility, 74.5% fall in the low altruism group, while 25.5% are in the high altruism group. Conversely, among those with a high level of humility, only 34.0% are in the low altruism category, and a clear majority of 66.0% are in the high altruism category. The Chi-square value of 92.84 with a p-value less than 0.001 signifies a statistically significant association at the 1% level, leading to the rejection of the null hypothesis.

In short, the results reveal that the largest share in the low humility group is in the low altruism category (74.5%), whereas in the high humility group, the majority are in the high altruism category (66.0%). This observes that humility is closely connected with greater altruistic tendencies, such as helping others, showing empathy, and prioritizing collective well-being. Teachers with low humility are more likely to score lower on altruism, potentially limiting collaborative and supportive behaviour. For educational institutions, nurturing humility through reflective practices, value-based training, and team-oriented activities could help strengthen altruistic attitudes and build a more cooperative academic culture.

b) Association Between Level of Humility and Level of Courtesy

H.0.1: There is no significant association between level of humility and level of courtesy among the teachers of higher educational institutions in Kerala

Table 5.47

Chi-Square for Association between Level of Humility and Level of Courtesy among the Teachers of Higher Educational Institutions in Kerala

Level of Humility	Level of Courtesy		Total	Chi-Square value	p value
	Low level	High Level			
Low level	222 (78.7%)	60 (21.3%)	282 (100%)	136.04	<0.001**
High level	84 (29.8%)	198 (70.2%)	282 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

**denotes significant at 1%level

The Chi-square analysis evaluates the association between the level of humility and the level of courtesy among teachers in higher educational institutions in Kerala. In teachers with a low level of humility, 78.7% fall into the low courtesy category and 21.3% into the high courtesy category. As opposite, teachers with a high level of humility show a reversed pattern, with only 29.8% in the low courtesy category and 70.2% in the high courtesy category. The Chi-square value of 136.04 and a p-value less than 0.001 indicate a statistically significant association at the 1% level, leading to the rejection of the null hypothesis.

In brief, the largest proportion in the low humility group is concentrated in the low courtesy category (78.7%), whereas in the high humility group, the majority are in the high courtesy category (70.2%). This implies a strong positive link between humility and courtesy meaning that teachers who are humbler tend to be more respectful, polite, and considerate, while those with lower humility are more likely to exhibit reduced courtesy. For higher educational institutions, this indicates that fostering humility through reflective teaching practices, mentorship programs, and value-based training could contribute to building a more respectful and harmonious academic environment.

c) Association Between Level of Humility and Level of Virtue

H.0.1: There is no significant association between level of humility and level of virtue among the teachers of higher educational institutions in Kerala

Table 5.48

Chi-Square for Association between Level of Humility and Level of Virtue among the Teachers of Higher Educational Institutions in Kerala

Level of Humility	Level of Virtue		Total	Chi-Square value	p value
	Low level	High Level			
Low level	201 (71.3%)	81 (28.7%)	282 (100%)	97.09	<0.001**
High level	84 (29.8%)	198 (70.2%)	282 (100%)		
Total	285 (50.5%)	279 (49.5%)	564 (100%)		

**denotes significant at 1%level

The chi-square analysis suggests a statistically significant association between the level of humility and the level of virtue among teachers in higher educational institutions in Kerala, as evidenced by a chi-square value of 97.09 and a p-value of less than 0.001, which is significant at the 1% level; accordingly, the null hypothesis is rejected and the alternative hypothesis is accepted. Among teachers with low humility, 71.3% also recorded a low level of virtue, while 28.7% reported a high level of virtue. Conversely, in the high humility group, 70.2% exhibited a high level of virtue, and 29.8% recorded a low level of virtue. The nearly symmetrical reversal in percentages between the two groups obviously suggests that higher humility is strongly associated with higher virtue levels.

In simpler terms, the data demonstrates that teachers who disclose more humility are much more likely to also possess higher virtue, whereas those with lower humility tend to have lower virtue. This means humility and virtue seem to go hand-in-hand in the academic setting studied. Since the test result is significant, the null hypothesis of no association is rejected. Practically, this specifies that fostering humility among teachers might also strengthen their moral and ethical orientation, leading to a more value-driven academic environment. Such a finding highlights the noteworthiness of personality development and value-based training as part of professional development in higher education.

d) Association Between Level of Humility and Level of Sportsmanship

H.0.1: There is no significant association between level of humility and level of sportsmanship among the teachers of higher educational institutions in Kerala

Table 5.49

Chi-Square for Association between Level of Humility and Level of Sportsmanship among the Teachers of Higher Educational Institutions in Kerala

Level of Humility	Level of Sportsmanship		Total	Chi-Square value	p value
	Low level	High Level			
Low level	243 (86.2%)	39 (13.8%)	282 (100%)	121.92	<0.001**
High level	117 (41.5%)	165 (58.5%)	282 (100%)		
Total	360 (63.8%)	204 (36.2%)	564 (100%)		

**denotes significant at 1%level

The chi-square analysis reveals a statistically significant association between the level of humility and the level of sportsmanship among teachers in higher educational institutions in Kerala, as stipulated by a chi-square value of 121.92 and a p-value less than 0.001, significant at the 1% level, thus, the null hypothesis is rejected, and the alternative hypothesis is accepted. In the low humility group, 86.2% of teachers reported a low level of sportsmanship, while only 13.8% recorded a high level. In contrast, among teachers with high humility, 58.5% disclosed a high level of sportsmanship, and 41.5% recorded a low level. The sharp contrast in proportions between the two humility groups expresses a strong positive link between humility and sportsmanship.

In simpler terms, the results show that in the low humility category, the highest proportion is in the low sportsmanship group (86.2%), while in the high humility category, the highest proportion is in the high sportsmanship group (58.5%). This means that teachers with higher humility are more likely to practice fair play, respect, and cooperation, while those with lesser humility tend to lack these traits. Such a finding highlights that fostering humility among faculty could be a valuable approach to forming a more collaborative and ethically sound academic environment.

e) Association Between Level of Humility and Level of Conscientiousness

H.0.1: There is no significant association between level of humility and level of conscientiousness among the teachers of higher educational institutions in Kerala

Table 5.50

Chi-Square for Association between Level of Humility and Level of Conscientiousness among the Teachers of Higher Educational Institutions in Kerala

Level of Humility	Level of Conscientiousness		Total	Chi-Square value	p value
	Low level	High Level			
Low level	246 (87.2%)	36 (12.8%)	282 (100%)	74.09	<0.001**
High level	153 (54.3%)	129 (45.7%)	282 (100%)		
Total	399 (70.7%)	165 (29.3%)	564 (100%)		

**denotes significant at 1%level

The chi-square analysis expresses a statistically significant association between the level of humility and the level of conscientiousness among teachers in higher educational institutions in Kerala, as evidenced by a chi-square value of 74.09 and a p-value less than 0.001, significant at the 1% level; therefore, the null hypothesis is rejected, and the alternative hypothesis is accepted. In the low humility group, 87.2% of teachers stated a low level of conscientiousness, while only 12.8% recorded a high level. Conversely, among teachers with high humility, 45.7% expressed a high level of conscientiousness, and 54.3% recorded a low level. These figures indicate a clear positive association between humility and conscientiousness.

Put it simply, the highest proportion in the low humility category is in the low conscientiousness group (87.2%), whereas in the high humility category, the highest proportion is in the high conscientiousness group (54.3%), although the high conscientiousness proportion (45.7%) is notably larger compared to the low humility group. This suggests that teachers with higher humility are generally more likely to be careful, responsible, and diligent in their work. Strengthening humility among faculty may, therefore, indirectly contribute to improving their conscientiousness, enhancing both personal discipline and institutional productivity.

Section C

LEVEL OF OCB (I AND O), AND ITS ASSOCIATION WITH ACADEMIC ENTHUSIASM

Academic enthusiasm includes:

1) **Passion for teaching**
2) **Willingness to engage**
3) **Research involvement**
4) **Mentoring attitude**
5) **Knowledge sharing**

1) Level of OCB And Its Association with Passion for Teaching

a) Association Between Level of Passion for Teaching and Level of Altruism

H.0.1: There is no significant association between level of passion for teaching and level of altruism among the teachers of higher educational institutions in Kerala

Table 5.51

Chi-Square for Association between Level of Passion for Teaching and Level of Altruism among the Teachers of Higher Educational Institutions in Kerala

Level of Passion for teaching	Level of Altruism		Total	Chi-Square value	p value
	Low level	High Level			
Low level	225 (72.1%)	87 (27.9%)	312 (100%)	89.74	<0.001**
High level	81 (32.1%)	171 (67.9%)	252 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

**denotes significant at 1%level

The chi-square analysis discloses a statistically significant association between the level of passion for teaching and the level of altruism among teachers in higher educational institutions in Kerala, as indicated by a chi-square value of 89.74 and a p-value less than 0.001, significant at the 1% level; thus, the null hypothesis is rejected and the alternative hypothesis is accepted. In the low passion for teaching group, 72.1% of teachers stated a low level of altruism, while 27.9% recorded a high level. In contrast, among teachers with high passion for teaching, 67.9% disclosed a high level of altruism, whereas 32.1% recorded a low level. This shows a strong positive association between passion for teaching and altruism.

In brief, the highest proportion in the low passion for teaching category is in the low altruism group (72.1%), while in the high passion for teaching category, the highest proportion is in the high altruism group (67.9%). This means that teachers who are more passionate about teaching are far more likely to be selfless, helpful, and concerned about well-being of others, while those less passionate tend to express

lower altruistic tendencies. This finding implies that fostering a genuine passion for teaching among faculty could also cultivate higher altruistic values, ultimately contributing to a more supportive and student-centred academic environment.

b) Association Between Level of Passion for Teaching and Level of Courtesy

H.0.1: There is no significant association between level of passion for teaching and level of courtesy among the teachers of higher educational institutions in Kerala

Table 5.52

Chi-Square for Association between Level of Passion for Teaching and Level of Courtesy among the Teachers of Higher Educational Institutions in Kerala

Level of Passion for teaching	Level of Courtesy		Total	Chi-Square value	p value
	Low level	High Level			
Low level	234 (75.0%)	78 (25.0%)	312 (100%)	121.07	<0.001**
High level	72 (28.6%)	180 (71.4%)	252 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

**denotes significant at 1%level

The chi-square analysis implies a statistically significant association between the level of passion for teaching and the level of courtesy among teachers in higher educational institutions in Kerala, as reflected by a chi-square value of 121.07 and a p-value less than 0.001, significant at the 1% level; thus, the null hypothesis is rejected, and the alternative hypothesis is accepted. In the low passion for teaching group, 75.0% of teachers reported a low level of courtesy, whereas 25.0% recorded a high level. Conversely, among those with high passion for teaching, 71.4% showed a high level of courtesy, and 28.6% reported a low level. This pattern specifies a strong positive relationship between passion for teaching and courtesy.

In short, the highest proportion in the low passion for teaching category is in the low courtesy group (75.0%), whereas in the high passion for teaching category, the highest proportion is in the high courtesy group (71.4%). This implies that

teachers with greater enthusiasm and commitment to teaching tend to be more polite, respectful, and considerate toward others, while those less passionate are more likely to lack these traits. The implication is that nurturing passion for teaching could perform a key role in improving interpersonal respect and professional decorum within higher educational institutions.

c) Association Between Level of Passion for Teaching and Level of Virtue

H.0.1: There is no significant association between level of passion for teaching and level of virtue among the teachers of higher educational institutions in Kerala

Table 5.53

Chi-Square for Association between Level of Passion for Teaching and Level of Virtue among the Teachers of Higher Educational Institutions in Kerala

Level of Passion for teaching	Level of Virtue		Total	Chi-Square value	p value
	Low level	High Level			
Low level	222 (71.2%)	90 (28.8%)	312 (100%)	118.79	<0.001**
High level	63 (25.0%)	189 (75.0%)	252 (100%)		
Total	285 (50.5%)	279 (49.5%)	564 (100%)		

**denotes significant at 1%level

The chi-square analysis discloses a statistically significant association between the level of passion for teaching and the level of virtue among teachers in higher educational institutions in Kerala, as indicated by a chi-square value of 118.79 and a p-value less than 0.001, significant at the 1% level; so, the null hypothesis is rejected, and the alternative hypothesis is accepted. In the low passion for teaching group, 71.2% of teachers reported a low level of virtue, while 28.8% recorded a high level. Conversely, among teachers with high passion for teaching, 75.0% expressed a high level of virtue, and 25.0% reported a low level. These results suggest a strong positive relationship between passion for teaching and virtue.

In an essence, the highest proportion in the low passion for teaching category is in the low virtue group (71.2%), while in the high passion for teaching category, the highest proportion is in the high virtue group (75.0%). This means that teachers who are more passionate about teaching tend to possess stronger moral and ethical values, while those less passionate are more likely to show weaker virtue levels. This finding emphasizes the importance of encouraging and sustaining teaching passion as a way to strengthen ethical conduct and value-based behavior in academic institutions.

d) Association Between Level of Passion for Teaching and Level of Sportsmanship

H.0.1: There is no significant association between level of passion for teaching and level of sportsmanship among the teachers of higher educational institutions in Kerala

Table 5.54

Chi-Square for Association between Level of Passion for Teaching and Level of Sportsmanship among the Teachers of Higher Educational Institutions in Kerala

Level of Passion for teaching	Level of Sportsmanship		Total	Chi-Square value	p value
	Low level	High Level			
Low level	246 (78.8%)	66 (21.2%)	312 (100%)	68.20	<0.001**
High level	114 (45.2%)	138 (54.8%)	252 (100%)		
Total	360 (63.8%)	204 (36.2%)	564 (100%)		

**denotes significant at 1%level

The chi-square analysis signifies a statistically significant association between the level of passion for teaching and the level of sportsmanship among teachers in higher educational institutions in Kerala, as evidenced by a chi-square value of 68.20 and a p-value less than 0.001, significant at the 1% level; hence, the null hypothesis is rejected, and the alternative hypothesis is accepted. In the low passion for teaching group, 78.8% of teachers signifies a low level of sportsmanship, while 21.2%

recorded a high level. In contrast, among teachers with high passion for teaching, 54.8% reported a high level of sportsmanship, and 45.2% recorded a low level. This pattern reflects a clear positive relationship between teaching passion and sportsmanship.

In simpler terms, the highest proportion in the low passion for teaching category is in the low sportsmanship group (78.8%), while in the high passion for teaching category, the highest proportion is in the high sportsmanship group (54.8%). This means that teachers with higher enthusiasm for teaching are more likely to exhibit fairness, respect, and cooperative behavior, while those with less passion tend to disclose weaker sportsmanship qualities. The implication is that promoting teaching passion could be an effective strategy for fostering a more collaborative and respectful professional environment in higher education.

e) Association Between Level of Passion for Teaching and Level of Conscientiousness

H.0.1: There is no significant association between level of passion for teaching and level of conscientiousness among the teachers of higher educational institutions in Kerala

Table 5.55

Chi-Square for Association between Level of Passion for Teaching and Level of Conscientiousness among the Teachers of Higher Educational Institutions in Kerala

Level of Passion for teaching	Level of Conscientiousness		Total	Chi-Square value	p value
	Low level	High Level			
Low level	267 (85.6%)	45 (14.4%)	312 (100%)	74.22	<0.001**
High level	132 (52.4%)	120 (47.6%)	252 (100%)		
Total	399 (70.7%)	165 (29.3%)	564 (100%)		

**denotes significant at 1%level

The chi-square analysis implies a statistically significant association between the level of passion for teaching and the level of conscientiousness among teachers

in higher educational institutions in Kerala, as indicated by a chi-square value of 74.22 and a p-value less than 0.001, significant at the 1% level; accordingly, the null hypothesis is rejected, and the alternative hypothesis is accepted. In the low passion for teaching group, the most prominent category is low conscientiousness (85.6%), whereas only 14.4% fall in the high conscientiousness category. Conversely, in the high passion for teaching group, the most prominent category is still low conscientiousness (52.4%), but the high conscientiousness percentage (47.6%) is substantially greater than in the low passion group. This reflects a strong positive association between teaching passion and conscientiousness.

Put it simply, teachers with low passion for teaching are overwhelmingly concentrated in the low conscientiousness group, whereas teachers with high passion for teaching are more evenly split, with a noticeable increase in the proportion who are highly conscientious. This means that higher teaching passion tends to be linked with higher diligence, responsibility, and discipline. The implication is that by cultivating teaching passion among faculty members, institutions may also enhance conscientious work habits, improving both individual and organizational effectiveness.

2) Level of OCB and Its Association with Willingness to Engage

a) Association Between Level of Willingness to Engage and Level of Altruism

H.0.1: There is no significant association between level of willingness to engage and level of altruism among the teachers of higher educational institutions in Kerala

Table 5.56

Chi-Square for Association between Level of Willingness to Engage and Level of Altruism among the Teachers of Higher Educational Institutions in Kerala

Level of Willingness to engage	Level of Altruism		Total	Chi-Square value	p value
	Low level	High Level			
Low level	225 (67.6%)	108 (32.4%)	333 (100%)	58.05	<0.001**
High level	81 (35.1%)	150 (64.9%)	231 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

**denotes significant at 1%level

The chi-square analysis implies a statistically significant association between the level of willingness to engage and the level of altruism among teachers in higher educational institutions in Kerala, as shown by a chi-square value of 58.05 and a p-value less than 0.001, significant at the 1% level; hence, the null hypothesis is disputed, and the alternative hypothesis is accepted. In the low willingness to engage group, the most prominent category is low altruism (67.6%), while 32.4% recorded high altruism. In contrast, in the high willingness to engage group, the most prominent category is high altruism (64.9%), with 35.1% stating low altruism. This pattern shows a clear positive relationship between willingness to engage and altruism.

In simpler terms, teachers with lower willingness to engage are more likely to have lower levels of selflessness and concern for others, whereas teachers with higher willingness to engage are more likely to show strong altruistic tendencies. The highest percentage in the low willingness group is in low altruism, whereas in the high willingness group it is in high altruism. This suggests that encouraging active engagement among teachers could also promote a more supportive and selfless professional culture, benefiting both colleagues and students within higher educational institutions.

b) Association Between Level of Willingness to Engage and Level of Courtesy

H.0.1: There is no significant association between level of willingness to engage and level of courtesy among the teachers of higher educational institutions in Kerala

Table 5.57

Chi-Square for Association between Level of Willingness to Engage and Level of Courtesy among the Teachers of Higher Educational Institutions in Kerala

Level of Willingness to engage	Level of Courtesy		Total	Chi-Square value	p value
	Low level	High Level			
Low level	237 (71.2%)	96 (28.8%)	333 (100%)	93.73	<0.001**
High level	69 (29.9%)	162 (70.1%)	231 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

**denotes significant at 1%level

The chi-square analysis discloses a statistically significant association between the level of willingness to engage and the level of courtesy among teachers in higher educational institutions in Kerala, as evidenced by a chi-square value of 93.73 and a p-value less than 0.001, significant at the 1% level; so, the null hypothesis is rejected, and the alternative hypothesis is accepted. In the low willingness to engage group, the most dominant category is low courtesy (71.2%), while 28.8% recorded high courtesy. In contrast, in the high willingness to engage group, the most prominent category is high courtesy (70.1%), with 29.9% stating low courtesy. These figures highlight a clear positive link between willingness to engage and courtesy.

In simpler terms, teachers who demonstrates lower willingness to engage are predominantly in the low courtesy group, whereas those with higher willingness to engage are mostly in the high courtesy group. This indicates that higher engagement is associated with more polite, respectful, and considerate behavior. The implication is that fostering a culture of active participation and involvement among faculty could also boost respectful and courteous interactions, improving the overall professional climate in higher educational institutions.

c) Association Between Level of Willingness to Engage and Level of Virtue

H.0.1: There is no significant association between level of willingness to engage and level of virtue among the teachers of higher educational institutions in Kerala

Table 5.58

Chi-Square for Association between Level of Willingness to Engage and Level of Virtue among the Teachers of Higher Educational Institutions in Kerala

Level of Willingness to engage	Level of Virtue		Total	Chi-Square value	p value
	Low level	High Level			
Low level	213 (64.0%)	120 (36.0%)	333 (100%)	58.68	<0.001**
High level	72 (31.2%)	159 (68.8%)	231 (100%)		
Total	285 (50.5%)	279 (49.5%)	564 (100%)		

**denotes significant at 1%level

The chi-square analysis reveals a statistically significant association between the level of willingness to engage and the level of virtue among teachers in higher educational institutions in Kerala, as reflected by a chi-square value of 58.68 and a p-value less than 0.001, significant at the 1% level; consequently, the null hypothesis is rejected, and the alternative hypothesis is accepted. In the low willingness to engage group, the most prominent category is low virtue (64.0%), while 36.0% recorded high virtue. Conversely, in the high willingness to engage group, the most prominent category is high virtue (68.8%), with 31.2% reporting low virtue. These results display a clear positive association between willingness to engage and virtue.

In other words, teachers with low willingness to engage are more concentrated in the low virtue group, whereas teachers with high willingness to engage are mainly observed in the high virtue group. This implies that teachers who actively participate and engage in their professional environment are more likely to possess strong moral and ethical values. The implication is that encouraging active engagement among faculty members can not only increase participation but also strengthen the value-driven culture in higher educational institutions.

d) Association Between Level of Willingness to Engage and Level of Sportsmanship

H.0.1: There is no significant association between level of willingness to engage and level of sportsmanship among the teachers of higher educational institutions in Kerala

Table 5.59

Chi-Square for Association between Level of Willingness to Engage and Level of Sportsmanship among the Teachers of Higher Educational Institutions in Kerala

Level of Willingness to engage	Level of Sportsmanship		Total	Chi-Square value	p value
	Low level	High Level			
Low level	258 (77.5%)	75 (22.5%)	333 (100%)	65.59	<0.001**
High level	102 (44.2%)	129 (55.8%)	231 (100%)		
Total	360 (63.8%)	204 (36.2%)	564 (100%)		

**denotes significant at 1%level

The chi-square analysis presented a statistically significant association between the level of willingness to engage and the level of sportsmanship among teachers in higher educational institutions in Kerala, as indicated by a chi-square value of 65.59 and a p-value less than 0.001, significant at the 1% level; hence, the null hypothesis is disputed, and the alternative hypothesis is accepted. Within the low willingness to engage group, the most prominent category is low sportsmanship (77.5%), while 22.5% fall under high sportsmanship. In contrast, in the high willingness to engage group, the most prominent category is high sportsmanship (55.8%), with 44.2% reporting low sportsmanship. This specifies a strong positive link between willingness to engage and sportsmanship.

To summarize, low sportsmanship clearly dominates among teachers with low willingness to engage, whereas high sportsmanship is dominant among teachers with high willingness to engage. This recommends that teachers who actively participate in institutional and collaborative activities are more inclined toward fairness, cooperation, and respect, while those who participate less tend to show weaker sportsmanship traits. Boosting higher engagement could therefore be an effective way to strengthen mutual respect and teamwork within higher educational institutions.

e) Association Between Level of Willingness to Engage and Level of Conscientiousness

H.0.1: There is no significant association between level of willingness to engage and level of conscientiousness among the teachers of higher educational institutions in Kerala

Table 5.60

Chi-Square for Association between Level of Willingness to Engage and Level of Conscientiousness among the Teachers of Higher Educational Institutions in Kerala

Level of Willingness to engage	Level of Conscientiousness		Total	Chi-Square value	p value
	Low level	High Level			
Low level	264 (79.3%)	69 (20.7%)	333 (100%)	28.61	<0.001**
High level	135 (58.4%)	96 (41.6%)	231 (100%)		
Total	399 (70.7%)	165 (29.3%)	564 (100%)		

**denotes significant at 1%level

The chi-square analysis reported a statistically significant association between the level of willingness to engage and the level of conscientiousness among teachers in higher educational institutions in Kerala, as shown by a chi-square value of 28.61 and a p-value less than 0.001, significant at the 1% level; so, the null hypothesis is rejected, and the alternative hypothesis is accepted. In the low willingness to engage group, the dominant category is low conscientiousness (79.3%), with only 20.7% recording high conscientiousness. In contrast, in the high willingness to engage group, the dominant category is still low conscientiousness (58.4%), but the proportion of high conscientiousness (41.6%) is notably higher compared to the low willingness group. These figures point to a positive association between willingness to engage and conscientiousness.

In other words, low conscientiousness clearly dominates among teachers with low willingness to engage, whereas although low conscientiousness is still more frequent in the high willingness group, the share of high conscientiousness is significantly greater. This specifies that teachers who are more engaged are generally more careful, responsible, and disciplined in their professional duties. Encouraging active engagement in institutional activities could therefore help in improving conscientious work habits, leading to developed performance and a more efficient academic environment.

3) Level of OCB and Its Association with Research Involvement

a) Association Between Level of Research Involvement and Level of Altruism

H.0.1: There is no significant association between level of research involvement and level of altruism among the teachers of higher educational institutions in Kerala

Table 5.61

Chi-Square for Association between Level of Research Involvement and Level of Altruism among the Teachers of Higher Educational Institutions in Kerala

Level of research involvement	Level of Altruism		Total	Chi-Square value	p value
	Low level	High Level			
Low level	258 (70.5%)	108 (29.5%)	366 (100%)	110.73	<0.001**
High level	48 (24.2%)	150 (75.8%)	198 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

**denotes significant at 1%level

In the analysis, the Chi-square value is 110.73 with a p-value less than 0.001, specifying a statistically significant association between the level of research involvement and the level of altruism among teachers of higher educational institutions in Kerala at the 1% significance level. Among teachers with low research involvement, 70.5% demonstrate a low level of altruism, while 29.5% display a high level. Conversely, among those with high research involvement, only 24.2% fall in the low altruism category, and a substantial 75.8% exhibit high altruism. This distribution clearly implies a pattern where higher research involvement is accompanied by higher levels of altruism. So, the null hypothesis is rejected.

To conclude, the findings reveal that in the low research involvement group, the dominant category is low altruism (70.5%), with only 29.5% implying high altruism. Alternatively, in the high research involvement group, the dominant category shifts to high altruism (75.8%), with just 24.2% falling under low altruism. In simple terms, teachers who are actively engaged in research are far more likely to disclose strong altruistic tendencies, whereas those with lower research involvement predominantly express lower altruism. This clear shift indicates that encouraging higher levels of research participation could play a role in nurturing a more altruistic and community-oriented academic environment.

b) Association Between Level of Research Involvement and Level of Courtesy

H.0.1: There is no significant association between level of research involvement and level of courtesy among the teachers of higher educational institutions in Kerala

Table 5.62

Chi-Square for Association between Level of Research Involvement and Level of Courtesy among the Teachers of Higher Educational Institutions in Kerala

Level of research involvement	Level of Courtesy		Total	Chi-Square value	p value
	Low level	High Level			
Low level	255 (70.5%)	111 (30.3%)	366 (100%)	99.83	<0.001**
High level	51 (25.8%)	147 (74.2%)	198 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

**denotes significant at 1%level

The table presents that, among teachers with low research involvement, 70.5 percent show a low level of courtesy and 30.3 percent show a high level of courtesy. In contrast, among teachers with high research involvement, 25.8 percent show a low level of courtesy while 74.2 percent express a high level of courtesy. The Chi-square value of 99.83 with a p-value less than 0.001 specifies that the association between research involvement and courtesy is statistically significant at the 1 % level. This means the null hypothesis, which asserted there is no significant association between the two variables, is rejected.

In summary, the results highlight that higher research involvement among teachers is linked with a greater tendency toward higher courtesy levels, while low research involvement is linked with lower courtesy levels. This signifies that engaging actively in research may be associated with professional conduct traits like politeness and respectful interaction. The implication for higher educational institutions is that promoting research engagement might indirectly foster a more courteous academic environment, potentially improving collaboration, communication, and workplace harmony.

c) Association Between Level of Research Involvement and Level of Virtue

H.0.1: There is no significant association between level of research involvement and level of virtue among the teachers of higher educational institutions in Kerala

Table 5.63

Chi-Square for Association between Level of Research Involvement and Level of Virtue among the Teachers of Higher Educational Institutions in Kerala

Level of research involvement	Level of Virtue		Total	Chi-Square value	p value
	Low level	High Level			
Low level	243 (66.4%)	123 (33.6%)	366 (100%)	104.92	<0.001**
High level	42 (21.2%)	156 (78.8%)	198 (100%)		
Total	285 (50.5%)	279 (45.7%)	564 (100%)		

**denotes significant at 1%level

From the table, among teachers with low research involvement, 66.4 percent have a low level of virtue and 33.6 percent have a high level of virtue. In contrast, among those with high research involvement, only 21.2 percent have a low level of virtue, while a substantial 78.8 percent possess a high level of virtue. The Chi-square value is 104.92, with a p-value less than 0.001, specifying that the association between research involvement and virtue is statistically significant at the 1 percent level. Thus, the null hypothesis, which stated that there is no significant association between these two variables, is rejected.

In simpler terms, teachers who are more engaged in research are far more likely to show higher levels of virtue compared to those with lower research involvement. On the other hand, low research involvement is linked with lower virtue levels. This pattern proposes that an active research culture may help cultivate qualities such as integrity, fairness, and moral responsibility among faculty members. For higher educational institutions, this points to that promoting and supporting research activities could also positively influence the ethical and value-driven climate of the academic community.

d) Association Between Level of Research Involvement and Level of Sportsmanship

H.0.1: There is no significant association between level of research involvement and level of sportsmanship among the teachers of higher educational institutions in Kerala

Table 5.64

Chi-Square Analysis of the Association between Level of Research Involvement and Level of Sportsmanship among Teachers of Higher Educational Institutions in Kerala

Level of research involvement	Level of Sportsmanship		Total	Chi-Square value	p value
	Low level	High Level			
Low level	270 (73.8%)	96 (26.2%)	366 (100%)	44.62	<0.001**
High level	90 (45.5%)	108 (54.5%)	198 (100%)		
Total	360 (63.8%)	204 (36.2%)	564 (100%)		

**denotes significant at 1%level

From the results, teachers with low research involvement show 73.8 percent in the low sportsmanship category and 26.2 percent in the high sportsmanship category. In contrast, teachers with high research involvement show 45.5 percent in the low sportsmanship category and 54.5 percent in the high sportsmanship category. The Chi-square statistic is 44.62, with a p-value less than 0.001, exhibiting a statistically significant association between research involvement and sportsmanship at the 1 % significance level. This leads to the rejection of the null hypothesis, which stated no significant association between these variables.

In everyday terms, the data recommends that teachers who are more actively involved in research tend to display higher sportsmanship, qualities like fairness, cooperation, and respect in professional interactions, compared to those with low research involvement. On the other hand, low research involvement is more frequently linked with reduced sportsmanship levels. This indicates that fostering a research-driven culture in higher educational institutions may not only develop academic output but also promote healthier, more collaborative workplace relationships.

e) Association Between Level of Research Involvement and Level of Conscientiousness

H.0.1: There is no significant association between level of research involvement and level of conscientiousness among the teachers of higher educational institutions in Kerala

Table 5.65

Chi-Square for Association between Level of Research Involvement and Level of Conscientiousness among the Teachers of Higher Educational Institutions in Kerala

Level of research involvement	Level of Conscientiousness		Total	Chi-Square value	p value
	Low level	High Level			
Low level	291 (79.5%)	75 (20.5%)	366 (100%)	38.68	<0.001**
High level	108 (54.5%)	90 (45.5%)	198 (100%)		
Total	399 (70.7%)	165 (29.3%)	564 (100%)		

**denotes significant at 1%level

From the data, among teachers with low research involvement, 79.5 percent express a low level of conscientiousness and 20.5 percent have a high level of conscientiousness. On the other hand, teachers with high research involvement have 54.5 percent in the low conscientiousness category and 45.5 percent in the high conscientiousness category. The Chi-square value is 38.68 with a p-value less than 0.001, stipulating a statistically significant relationship between research involvement and conscientiousness at the 1 % level. Thus, the null hypothesis, which suggested no significant association, is rejected.

In simpler terms, the results reveal that teachers who are actively engaged in research are more likely to be conscientious, displaying traits such as responsibility, diligence, and attention to detail, than those with low research involvement. On the other hand, a low research involvement trend is associated with lower conscientiousness levels. This suggests that encouraging faculty research participation could indirectly improve professional discipline and reliability within higher educational institutions, developing both academic quality and organizational effectiveness.

4) Level of OCB and Its Association with Mentoring Attitude

a) Association Between Level of Mentoring Attitude and Level of Altruism

H.0.1: There is no significant association between level of mentoring attitude and level of altruism among the teachers of higher educational institutions in Kerala

Table 5.66

Chi-Square for Association between Level of Mentoring Attitude and Level of Altruism among the Teachers of Higher Educational Institutions in Kerala

Level of Mentoring attitude	Level of Altruism		Total	Chi-Square value	p value
	Low level	High Level			
Low level	231 (71.3%)	93 (28.7%)	324 (100%)	89.08	<0.001**
High level	75 (31.3%)	165 (68.8%)	240 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

**denotes significant at 1%level

The chi-square analysis discloses a statistically significant association between the level of mentoring attitude and the level of altruism among teachers in higher educational institutions in Kerala, as specified by a chi-square value of 89.08 and a p-value less than 0.001, significant at the 1% level. Hence, the null hypothesis is rejected, and the alternative hypothesis is accepted. In the low mentoring attitude group, the majority of teachers (71.3%) fall under the low altruism category, whereas 28.7% report high altruism. In contrast, in the high mentoring attitude group, most teachers (68.8%) are in the high altruism category, with 31.3% in the low altruism category. These proportions emphasize a strong positive association between mentoring attitude and altruism.

In simpler terms, the results specify that low altruism is dominant among teachers with weaker mentoring attitudes, while high altruism is dominant among those with stronger mentoring attitudes. This proposes that educators who are more willing to guide, support, and mentor others also tend to be more selfless, cooperative, and concerned for the well-being of others. The association here implies that improving mentoring attitudes through faculty development, peer-support programs, and collaborative initiatives could also nurture higher altruistic behavior, fostering a more supportive and value-driven academic community.

b) Association Between Level of Mentoring Attitude and Level of Courtesy

H.0.1: There is no significant association between level of mentoring attitude and level of courtesy among the teachers of higher educational institutions in Kerala

Table 5.67

Chi-Square for Association between Level of Mentoring Attitude and Level of Courtesy among the Teachers of Higher Educational Institutions in Kerala

Level of Mentoring attitude	Level of Courtesy		Total	Chi-Square value	p value
	Low level	High Level			
Low level	252 (77.8%)	72 (22.2%)	324 (100%)	169.74	<0.001**
High level	54 (22.5%)	186 (77.5%)	240 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

**denotes significant at 1%level

The chi-square analysis designates a statistically significant association between the level of mentoring attitude and the level of courtesy among teachers in higher educational institutions in Kerala, with a chi-square value of 169.74 and a p-value less than 0.001, significant at the 1% level. Therefore, the null hypothesis is rejected, and the alternative hypothesis is accepted. In the low mentoring attitude group, the dominant category is low courtesy (77.8%), while only 22.2% report high courtesy. Alternatively, in the high mentoring attitude group, the dominant category is high courtesy (77.5%), with 22.5% reporting low courtesy. These figures point to a very strong positive association between mentoring attitude and courtesy.

In simple terms, the highest proportion in the low mentoring attitude group is in the low courtesy category (77.8%), while in the high mentoring attitude group, the highest proportion is in the high courtesy category (77.5%). This clearly displays that teachers who are more willing to guide and mentor others are also more likely to treat colleagues and students with respect and politeness. The implication is that enhancing mentoring attitudes can directly contribute to fostering a culture of courtesy, which is essential for a harmonious and professional academic environment.

c) Association Between Level of Mentoring Attitude and Level of Virtue

H.0.1: There is no significant association between level of mentoring attitude and level of virtue among the teachers of higher educational institutions in Kerala

Table 5.68

Chi-Square for Association between Level of Mentoring Attitude and Level of Virtue among the Teachers of Higher Educational Institutions in Kerala

Level of Mentoring attitude	Level of Virtue		Total	Chi-Square value	p value
	Low level	High Level			
Low level	225 (69.4%)	99 (30.6%)	324 (100%)	108.94	<0.001**
High level	60 (25.0%)	180 (75.0%)	240 (100%)		
Total	285 (50.5%)	279 (49.5%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test result ($\chi^2 = 108.94$, $p < 0.001$) stipulates a statistically significant association between the level of mentoring attitude and the level of virtue among teachers in higher educational institutions in Kerala, leading to the rejection of the null hypothesis. Among teachers with a low level of mentoring attitude, 69.4% showed a low level of virtue and 30.6% exhibited a high level of virtue. Conversely, among those with a high level of mentoring attitude, only 25.0% reported a low level of virtue, whereas a substantial 75.0% demonstrated a high level of virtue.

In simpler terms, teachers who possess stronger mentoring attitudes tend to also demonstrate higher levels of virtue, while those with weaker mentoring attitudes are more likely to display lower virtue levels. This indicates that being a good mentor is closely linked with embodying values such as integrity, fairness, and moral responsibility. The finding is important for educational institutions because it states that fostering mentoring skills in teachers could also enhance their moral and ethical orientation, thereby benefiting both students and the institutional culture. Since the statistical test displays a clear and strong relationship, the focus on mentoring development could serve as a dual-purpose strategy, improving both teaching quality and the moral standards within the academic community.

d) Association Between Level of Mentoring Attitude and Level of Sportsmanship

H.0.1: There is no significant association between level of mentoring attitude and level of sportsmanship among the teachers of higher educational institutions in Kerala

Table 5.69

Chi-Square for Association between Level of Mentoring Attitude and Level of Sportsmanship among the Teachers of Higher Educational Institutions in Kerala

Level of Mentoring attitude	Level of Sportsmanship		Total	Chi-Square value	p value
	Low level	High Level			
Low level	246 (75.9%)	78 (24.1%)	324 (100%)	48.25	<0.001**
High level	114 (47.5%)	126 (52.5%)	240 (100%)		
Total	360 (63.8%)	204 (36.2%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test result ($\chi^2 = 48.25$, $p < 0.001$) displays a statistically significant association between the level of mentoring attitude and the level of sportsmanship among teachers in higher educational institutions in Kerala, leading to the rejection of the null hypothesis. Among teachers with a low level of mentoring attitude, the majority (75.9%) expressed a low level of sportsmanship, while only 24.1% reported a high level. In the high mentoring attitude group, 47.5% exhibited a low level of sportsmanship, whereas 52.5% displayed a high level.

Put simply, teachers with weaker mentoring skills tend to have lower sportsmanship more often, whereas those with stronger mentoring skills are more likely to exhibit higher sportsmanship qualities. The fact that low sportsmanship is most prevalent among teachers with low mentoring attitudes shows a clear connection between these two traits. Since this link is statistically significant, it suggests that when institutions work on building mentoring capabilities in teachers, they are also likely to improve fairness, cooperation, and respect among faculty members. This dual improvement can develop not just the teacher–student relationship but also the overall harmony and professionalism within the institution.

e) Association Between Level of Mentoring Attitude and Level of Conscientiousness

H.0.1: There is no significant association between level of mentoring attitude and level of conscientiousness among the teachers of higher educational institutions in Kerala

Table 5.70

Chi-Square for Association between Level of Mentoring Attitude and Level of Conscientiousness among the Teachers of Higher Educational Institutions in Kerala

Level of Mentoring attitude	Level of Conscientiousness		Total	Chi-Square value	p value
	Low level	High Level			
Low level	261 (80.6%)	63 (19.4%)	324 (100%)	35.41	<0.001**
High level	138 (57.5%)	102 (42.5%)	240 (100%)		
Total	399 (70.7%)	165 (29.3%)	564 (100%)		

**denotes significant at 1%level

The Chi-square analysis ($\chi^2 = 35.41$, $p < 0.001$) unveils a statistically significant association between the level of mentoring attitude and the level of conscientiousness among teachers in higher educational institutions in Kerala, leading to the rejection of the null hypothesis. In the low mentoring attitude group, the majority (80.6%) reported a low level of conscientiousness, while only 19.4% exhibited a high level. In the high mentoring attitude group, 57.5% expressed a low level and 42.5% reported a high level of conscientiousness.

In other words, teachers with weaker mentoring skills are far more likely to score low in conscientiousness, while those with stronger mentoring attitudes tend to show higher conscientiousness. The fact that the highest low-level score is among teachers with low mentoring attitudes demonstrates a strong pattern: poor mentoring is often linked with reduced responsibility, discipline, and dependability. Since this relationship is statistically significant, it means institutions can expect an uplift in conscientiousness if they actively work on improving mentoring abilities of teachers. This improvement would not only benefit teacher performance but also positively impact the academic culture and student outcomes.

5) Level of OCB And Its Association with Knowledge Sharing Attitude

a) Association Between Level of Knowledge Sharing Attitude and Level of Altruism

H.0.1: There is no significant association between level of knowledge sharing attitude and level of altruism among the teachers of higher educational institutions in Kerala

Table 5.71

Chi-Square for Association between Level of Knowledge Sharing Attitude and Level of Altruism among the Teachers of Higher Educational Institutions in Kerala

Level of Knowledge sharing attitude	Level of Altruism		Total	Chi-Square value	p value
	Low level	High Level			
Low level	222 (75.5%)	72 (24.5%)	294 (100%)	111.78	<0.001**
High level	84 (31.1%)	186 (68.9%)	270 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test result ($\chi^2 = 111.78$, $p < 0.001$) specifies a statistically significant association between the level of knowledge sharing attitude and the level of altruism among teachers in higher educational institutions in Kerala, leading to the rejection of the null hypothesis. In the low knowledge sharing attitude group, 75.5% expressed a low level of altruism and 24.5% had a high level. Conversely, in the high knowledge sharing attitude group, 31.1% recorded a low level of altruism while 68.9% demonstrated a high level.

In practical terms, the findings show that teachers who are more open to sharing knowledge are also more inclined to act selflessly and support others, while those with limited knowledge sharing attitudes tend to display lower levels of altruism. The strong statistical significance means this is not a random pattern. The clear link between the two recommends that fostering a culture of knowledge sharing could also promote more collaborative, helpful, and community-minded behaviors among teachers. This connection is particularly valuable for educational institutions, as it specifies that by encouraging open exchange of ideas and resources, they can indirectly nurture a more altruistic and cooperative academic environment.

b) Association Between Level of Knowledge Sharing Attitude and Level of Courtesy

H.0.1: There is no significant association between level of knowledge sharing attitude and level of courtesy among the teachers of higher educational institutions in Kerala

Table 5.72

Chi-Square for Association between Level of Knowledge Sharing Attitude and Level of Courtesy among the Teachers of Higher Educational Institutions in Kerala

Level of Knowledge sharing attitude	Level of Courtesy		Total	Chi-Square value	p value
	Low level	High Level			
Low level	231 (78.6%)	63 (21.4%)	294 (100%)	146.30	<0.001**
High level	75 (27.8%)	195 (72.2%)	270 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test ($\chi^2 = 146.30$, $p < 0.001$) reveals a statistically significant association between the level of knowledge sharing attitude and the level of courtesy among teachers in higher educational institutions in Kerala, resulting in the rejection of the null hypothesis. In the low knowledge sharing attitude group, 78.6% expressed a low level of courtesy and only 21.4% had a high level. Conversely, in the high knowledge sharing attitude group, 27.8% exhibited a low level of courtesy, while 72.2% demonstrated a high level.

In simple terms, teachers who are more willing to share their knowledge tend to be much more courteous, expressing politeness, respect, and consideration for others. Those less inclined to share knowledge are far more likely to have lower courtesy levels, as seen from the greatest low-score percentage in this group. Since the statistical test affirms that the relationship is significant, it means this pattern is not coincidental. For educational institutions, this finding underlines the benefit of boosting knowledge sharing, as it could also enhance interpersonal respect and harmony among staff, thereby improving both the working environment and professional relationships.

c) Association Between Level of Knowledge Sharing Attitude and Level of Virtue

H.0.1: There is no significant association between level of knowledge sharing attitude and level of virtue among the teachers of higher educational institutions in Kerala

Table 5.73

Chi-Square for Association between Level of Knowledge Sharing Attitude and Level of Virtue among the Teachers of Higher Educational Institutions in Kerala

Level of Knowledge sharing attitude	Level of Virtue		Total	Chi-Square value	p value
	Low level	High Level			
Low level	204 (69.4%)	90 (30.6%)	294 (100%)	87.35	<0.001**
High level	81 (30.0%)	189 (70.0%)	270 (100%)		
Total	285 (50.5%)	279 (49.5%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test result ($\chi^2 = 87.35$, $p < 0.001$) specifies a statistically significant association between the level of knowledge sharing attitude and the level of virtue among teachers in higher educational institutions in Kerala, leading to the rejection of the null hypothesis. In the low knowledge sharing attitude group, 69.4% reported a low level of virtue and 30.6% had a high level. In the high knowledge sharing attitude group, 30.0% expressed a low level of virtue, while 70.0% demonstrated a high level.

In brief, the findings show that teachers who are more open to sharing their knowledge are also more likely to display strong virtues such as honesty, fairness, and integrity. Alternatively, those less inclined to share knowledge tend to score lower in virtue, with the highest low-value percentage appearing in this group. Since the statistical evidence states a significant relationship, this is not just a chance outcome. For educational institutions, this indicates that encouraging a culture of knowledge sharing could also nurture higher moral standards and ethical behavior among teachers, which in turn can positively influence both professional conduct and the overall institutional environment.

d) Association Between Level of Knowledge Sharing Attitude and Level of Sportsmanship

H.0.1: There is no significant association between level of knowledge sharing attitude and level of sportsmanship among the teachers of higher educational institutions in Kerala

Table 5.74

Chi-Square for Association between Level of Knowledge Sharing Attitude and Level of Sportsmanship among the Teachers of Higher Educational Institutions in Kerala

Level of Knowledge sharing attitude	Level of Sportsmanship		Total	Chi-Square value	p value
	Low level	High Level			
Low level	252 (85.7%)	42 (14.3%)	294 (100%)	127.39	<0.001**
High level	108 (40.0%)	162 (60.0%)	270 (100%)		
Total	360 (63.8%)	204 (36.2%)	564 (100%)		

**denotes significant at 1%level

The Chi-square analysis ($\chi^2 = 127.39$, $p < 0.001$) demonstrates a statistically significant association between the level of knowledge sharing attitude and the level of sportsmanship among teachers in higher educational institutions in Kerala, leading to the rejection of the null hypothesis. In case of teachers with a low knowledge sharing attitude, 85.7% had a low level of sportsmanship and only 14.3% had a high level. In contrast, among those with a high knowledge sharing attitude, 40.0% reported a low level of sportsmanship, while 60.0% exhibited a high level.

In simple terms, teachers who are more willing to share their knowledge tend to disclose better sportsmanship, qualities like fairness, respect, and cooperation, whereas those with limited knowledge sharing attitudes are far more likely to have low sportsmanship. The very high proportion of low sportsmanship among the low knowledge sharing group clearly exhibits how closely these traits are linked. Since the association is statistically significant, this pattern is not due to chance. For educational institutions, the indication is that fostering a culture of openness and knowledge exchange could also encourage healthier professional relationships, teamwork, and conflict resolution among faculty members, ultimately leading to a more positive academic environment.

e) Association Between Level of Knowledge Sharing Attitude and Level of Conscientiousness

H.0.1: There is no significant association between level of knowledge sharing attitude and level of conscientiousness among the teachers of higher educational institutions in Kerala

Table 5.75

Chi-Square for Association between Level of Knowledge Sharing Attitude and Level of Conscientiousness among Teachers of Higher Educational Institutions in Kerala

Level of Knowledge sharing attitude	Level of Conscientiousness		Total	Chi-Square value	p value
	Low level	High Level			
Low level	267 (90.8%)	27 (9.2%)	294 (100%)	119.54	<0.001**
High level	132 (48.9%)	138 (51.1%)	270 (100%)		
Total	399 (70.7%)	165 (29.3%)	564 (100%)		

**denotes significant at 1%level

The Chi-square test ($\chi^2 = 119.54$, $p < 0.001$) presents a statistically significant association between the level of knowledge sharing attitude and the level of conscientiousness among teachers in higher educational institutions in Kerala, leading to the rejection of the null hypothesis. In the low knowledge sharing attitude group, 90.8% reported a low level of conscientiousness and only 9.2% had a high level. Conversely, in the high knowledge sharing attitude group, 48.9% recorded a low level of conscientiousness, while 51.1% showed a high level.

In an essence, teachers with low knowledge sharing attitudes had the highest proportion in low conscientiousness (90.8%), while those with high knowledge sharing attitudes had the highest proportion in high conscientiousness (51.1%), showing a significant positive association between the two traits. In other terms, teachers who actively share their knowledge are much more likely to be conscientious. responsible, organized, and dependable. than those who do not. The fact that the low conscientiousness rate is extremely high among teachers with low knowledge sharing attitudes emphasizes a strong connection between these two qualities. Since this relationship is statistically significant, it is not a matter of random chance. For educational institutions, the implication is clear: promoting a culture of open knowledge exchange can also foster higher responsibility and professional commitment among faculty members, thereby enhancing both teaching quality and institutional reliability.

Section D

LEVEL OF OCB I & O AND ITS ASSOCIATION WITH ORGANIZATIONAL PROPERTIES

Organizational properties include:

1) **Domicile**
2) **Type of management**
3) **NAAC accreditation status**

1) Level of OCB and Its Association with Domicile

a) Association Between Level of Domicile and Level of Altruism

H.0.1: There is no significant association between level of domicile and level of altruism among the teachers of higher educational institutions in Kerala

Table 5.76

Chi-Square for Association between Level of Domicile and Level of Altruism among the Teachers of Higher Educational Institutions in Kerala

Level of Domicile	Level of Altruism		Total	Chi-Square value	p value
	Low level	High Level			
Urban	132 (56.4%)	102 (43.6%)	234 (100%)	3.13	0.209[NS]
Semi- Urban	69 (47.9%)	75 (52.1%)	144 (100%)		
Rural	105 (56.5%)	81 (43.5%)	186 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

[NS] denotes Not Significant

In the given analysis, urban respondents reported 56.4% in the low altruism category and 43.6% in the high altruism category. Semi-urban respondents showed 47.9% with low altruism and 52.1% with high altruism. Rural respondents reflected 56.5% in low altruism and 43.5% in high altruism. The Chi-square value of 3.13 with a p-value of 0.209 suggests that there is no statistically significant association between domicile and altruism levels at the conventional significance levels. So, the null hypothesis stating no significant association between these variables is accepted.

From a practical perspective, this suggests that where teachers live, whether in urban, semi-urban, or rural areas, does not play a decisive role in shaping their altruistic tendencies. Although semi-urban teachers reported a slightly higher share in the high altruism group compared to others, these differences are not strong enough to suggest a consistent pattern. This lack of significant relationship signifies that altruism among teachers is likely influenced by other personal, institutional, or

cultural factors rather than their place of residence, and policy measures aimed at increasing altruism may need to target such factors instead of focusing on domicile.

b) Association Between Level of Domicile and Level of Courtesy

H.0.1: There is no significant association between level of domicile and level of courtesy among the teachers of higher educational institutions in Kerala

Table 5.77

Chi-Square for Association between Level of Domicile and Level of Courtesy among the Teachers of Higher Educational Institutions in Kerala

Level of Domicile	Level of Courtesy		Total	Chi-Square value	p value
	Low level	High Level			
Urban	123 (52.6%)	111 (47.4%)	234 (100%)	0.63	0.729[NS]
Semi- Urban	78 (54.2%)	66 (45.8%)	144 (100%)		
Rural	105 (56.5%)	81 (43.5%)	186 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

[NS] denotes Not Significant

In the results, urban respondents recorded 52.6% in the low courtesy category and 47.4% in the high courtesy category. Semi-urban respondents reported 54.2% with low courtesy and 45.8% with high courtesy, while rural respondents recorded 56.5% in low courtesy and 43.5% in high courtesy. The Chi-square value of 0.63 with a p-value of 0.729 suggests that the association between domicile and courtesy levels is not statistically significant. So, the null hypothesis of no significant association between these two variables is accepted.

Put simply, the place of residence, whether urban, semi-urban, or rural, does not appear to have a meaningful impact on the level of courtesy among teachers in higher educational institutions. Although minor variations exist, such as slightly higher high-courtesy representation in urban areas, these differences are too small to

imply any real trend. This means courtesy is likely shaped more by personal values, institutional culture, and professional ethics rather than the teachers' residential background, making location-based interventions unnecessary in this regard.

c) Association Between Level of Domicile and Level of Virtue

H.0.1: There is no significant association between level of domicile and level of virtue among the teachers of higher educational institutions in Kerala

Table 5.78

Chi-Square for Association between Level of Domicile and Level of Virtue among the Teachers of Higher Educational Institutions in Kerala

Level of Domicile	Level of Virtue		Total	Chi-Square value	p value
	Low level	High Level			
Urban	108 (46.2%)	126 (53.8%)	234 (100%)	3.09	0.213^{NS}
Semi- Urban	78 (54.2%)	66 (45.8%)	144 (100%)		
Rural	99 (53.2%)	87 (46.8%)	186 (100%)		
Total	285 (50.5%)	279 (49.5%)	564 (100%)		

^{NS} denotes Not Significant

In this study, urban respondents recorded 46.2% in the low virtue group and 53.8% in the high virtue group. Semi-urban respondents had 54.2% with low virtue and 45.8% with high virtue, while rural respondents exhibited 53.2% in low virtue and 46.8% in high virtue. The Chi-square value is 3.09 with a p-value of 0.213, which suggests that the association between domicile and virtue is not statistically significant. Therefore, the null hypothesis stating no significant association between these two variables is accepted.

In general, this suggests that where teachers live, urban, semi-urban, or rural. does not meaningfully affect their level of virtue. Although urban teachers stated a slightly higher proportion in the high virtue category compared to others, the difference is too small to establish a pattern. This finding stipulates that virtue among

teachers is likely shaped by internal moral principles, institutional norms, and professional culture rather than their geographical residence, meaning location-specific programs may not be necessary to enhance this trait.

d) Association Between Level of Domicile and Level of Sportsmanship

H.0.1: There is no significant association between level of domicile and level of sportsmanship among the teachers of higher educational institutions in Kerala

Table 5.79

Chi-Square for Association between Level of Domicile and Level of Sportsmanship among the Teachers of Higher Educational Institutions in Kerala

Level of Domicile	Level of Sportsmanship		Total	Chi-Square value	p value
	Low level	High Level			
Urban	156 (66.7%)	78 (33.3%)	234 (100%)	2.73	0.254^{NS}
Semi- Urban	84 (58.3%)	60 (41.7%)	144 (100%)		
Rural	120 (64.5%)	66 (35.5%)	186 (100%)		
Total	360 (63.8%)	204 (36.2%)	564 (100%)		

^{NS} denotes Not Significant

The Chi-square analysis presents that the association between the level of domicile and the level of sportsmanship among teachers in higher educational institutions in Kerala is statistically not significant ($\chi^2 = 2.73$, $p = 0.254$). Across domicile categories, the distribution of sportsmanship levels remains relatively same. Urban teachers exhibited 66.7% at the low level and 33.3% at the high level of sportsmanship. Among semi-urban areas, the proportions were 58.3% low and 41.7% high, while rural areas had 64.5% low and 35.5% high. Since the p-value exceeds the 0.05 threshold, the null hypothesis is retained, suggesting no significant relationship between domicile and sportsmanship levels.

In simpler terms, where a teacher lives, whether in an urban, semi-urban, or rural area, does not appear to impact whether they show higher or lower levels of sportsmanship. The findings show that in all three domicile groups, a larger share of teachers falls into the low sportsmanship category, with semi-urban areas demonstrating the highest proportion of high-level sportsmanship (41.7%). Since the statistical test does not find a meaningful link, we can infer that sportsmanship among teachers is shaped more by other personal or institutional factors rather than their place of residence. This implies that initiatives to improve sportsmanship should focus on professional development or institutional culture rather than geographical location.

e) Association Between Level of Domicile and Level of Conscientiousness

H.0.1: There is no significant association between level of domicile and level of conscientiousness among the teachers of higher educational institutions in Kerala

Table 5.80

Chi-Square for Association between Level of Domicile and Level of Conscientiousness among the Teachers of Higher Educational Institutions in Kerala

Level of Domicile	Level of Conscientiousness		Total	Chi-Square value	p value
	Low level	High Level			
Urban	180 (76.9%)	54 (23.1%)	234 (100%)	7.76	0.021*
Semi- Urban	93 (64.6%)	51 (35.4%)	144 (100%)		
Rural	126 (67.7%)	60 (32.3%)	186 (100%)		
Total	399 (70.7%)	165 (29.3%)	564 (100%)		

*denotes significant at 5% level

The Chi-square test results specify a statistically significant association between domicile and conscientiousness levels among teachers in higher educational institutions in Kerala ($\chi^2 = 7.76$, $p = 0.021$), meaning the null hypothesis is rejected at the 5% significance level. In case of urban areas, 76.9% of teachers fall under the low conscientiousness category and 23.1% under high conscientiousness. In semi-

urban areas, 64.6% exhibit low levels and 35.4% high levels, while rural areas state 67.7% low and 32.3% high.

Simply put, where teachers live does make a difference to their level of conscientiousness. Urban teachers report the highest proportion in the low conscientiousness group (76.9%), whereas semi-urban teachers have the highest proportion in the high conscientiousness group (35.4%). This indicates that semi-urban and rural environments might encourage more diligence and responsibility compared to urban settings. Since the difference is statistically meaningful, interventions to improve conscientiousness could particularly point on urban-based teachers, while also reinforcing the positive tendencies already seen in semi-urban and rural areas.

2) Level of OCB And Its Association with Type of Management

a) Association Between Level of Type of Management and Level of Altruism

H.0.1: There is no significant association between level of type of management and level of altruism among the teachers of higher educational institutions in Kerala

Table 5.81

Chi-Square for Association between Type of Management and Level of Altruism among the Teachers of Higher Educational Institutions in Kerala

Level of Type of Management	Level of Altruism		Total	Chi-Square value	p value
	Low level	High Level			
Minority	237 (54.9%)	195 (45.1%)	432 (100%)	0.27	0.601^{NS}
Non-Minority	69 (52.3%)	63 (47.7%)	132 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

^{NS} denotes Not Significant

The Chi-square test result ($\chi^2 = 0.27$, $p = 0.601$) specifies that there is no statistically significant association between the type of management and the level of altruism among teachers in higher educational institutions in Kerala. In minority-managed institutions, 54.9% of teachers show low altruism and 45.1% exhibit high

altruism, while in non-minority institutions, 52.3% fall into the low category and 47.7% into the high category. Across the total sample of 564 teachers, 54.3% have low altruism and 45.7% have high altruism. The similarity in distribution across both management types supports the decision to retain the null hypothesis.

Simply put, whether a teacher works in a minority-managed or non-minority-managed institution does not seem to influence their level of altruism. Both groups have almost the same proportion of teachers in low and high altruism categories, with non-minority institutions demonstrating a slightly higher percentage in the high altruism group (47.7%). Since the statistical test displays no meaningful difference, it can be concluded that altruistic behavior among teachers is likely shaped by personal values, institutional culture, or professional norms rather than the type of management governing the institution.

b) Association Between Level of Type of Management and Level of Courtesy

H.0.1: There is no significant association between level of type of management and level of courtesy among the teachers of higher educational institutions in Kerala

Table 5.82

Chi-Square for Association between Type of Management and Level of Courtesy among the Teachers of Higher Educational Institutions in Kerala

Level of Type of Management	Level of Courtesy		Total	Chi-Square value	p value
	Low level	High Level			
Minority	243 (56.3%)	189 (43.8%)	432 (100%)	2.95	0.085^{NS}
Non-Minority	63 (47.7%)	69 (52.3%)	132 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

^{NS} denotes Not Significant

In the above table, the courtesy levels of teachers are compared across two categories of type of management, minority and non-minority institutions. Among teachers in minority institutions, 56.3% stated a low level of courtesy and 43.8% reported a high level of courtesy. For non-minority institutions, 47.7% of teachers

were in the low courtesy category, whereas 52.3% were in the high courtesy category. The chi-square test statistic is 2.95 with a p-value of 0.085, which is higher than the conventional 0.05 significance threshold. This means the variation in courtesy levels between the two types of management is not statistically significant, and the null hypothesis of no association is accepted.

In simpler terms, this result indicates that whether a teacher works in a minority or non-minority managed institution does not meaningfully influence whether they display higher or lower courtesy levels. Eventhough there is a small observed difference, minority-managed institutions have a slightly higher proportion of low courtesy cases, and non-minority institutions show more high courtesy cases this gap could be due to random variation rather than a real underlying relationship. It implies that institutional management type alone is not a decisive factor in shaping courteous behaviour of teachers, and other organisational, personal, or cultural factors may be more influential.

c) Association Between Level of Type of Management and Level of Virtue

H.0.1: There is no significant association between level of type of management and level of virtue among the teachers of higher educational institutions in Kerala

Table 5.83

Chi-Square for Association between Type of Management and Level of Virtue among the Teachers of Higher Educational Institutions in Kerala

Level of Type of Management	Level of Virtue		Total	Chi-Square value	p value
	Low level	High Level			
Minority	225 (52.1%)	207 (47.9%)	432 (100%)	1.77	0.182^{NS}
Non-Minority	60 (45.5%)	72 (54.5%)	132 (100%)		
Total	285 (50.5%)	279 (49.5%)	564 (100%)		

^{NS} denotes Not Significant

From the given table, the virtue levels of teachers are compared between minority and non-minority managed institutions. Among teachers in minority institutions, 52.1% exhibited a low level of virtue and 47.9% reported a high level of virtue. In the case of non-minority institutions, 45.5% of teachers were in the low

virtue category, while 54.5% were in the high virtue category. The chi-square value is 1.77 with a p-value of 0.182, which is higher than the 0.05 threshold. This implies that the difference in virtue levels between the two groups is not statistically significant, and the null hypothesis of no association is accepted.

In plain terms, this means that the type of management, whether minority or non-minority, does not have a meaningful effect on whether teachers show higher or lower levels of virtue. While there is a small difference, with non-minority institutions having a slightly greater proportion of teachers in the high virtue category, this variation could be due to chance rather than a consistent pattern. This specifies that other factors, such as individual values, institutional culture, or professional ethics, may play a more important role in determining virtue among teachers.

d) Association Between Level of Type of Management and Level of Sportmanship

H.0.1: There is no significant association between level of type of management and level of sportsmanship among the teachers of higher educational institutions in Kerala

Table 5.84

Chi-Square for Association between Type of Management and Level of Sportsmanship among the Teachers of Higher Educational Institutions in Kerala

Level of Type of Management	Level of Sportsmanship		Total	Chi-Square value	p value
	Low level	High Level			
Minority	279 (64.6%)	153 (35.4%)	432 (100%)	0.45	0.500^{NS}
Non-Minority	81 (61.4%)	51 (38.6%)	132 (100%)		
Total	360 (63.8%)	204 (36.2%)	564 (100%)		

^{NS} denotes Not Significant

In the above table, the sportsmanship levels of teachers are compared between minority and non-minority managed institutions. In case of minority institutions, 64.6% of teachers reported a low level of sportsmanship, while 35.4% reported a high level. In non-minority institutions, 61.4% of teachers were in the low sportsmanship category,

and 38.6% were in the high sportsmanship category. The chi-square value is 0.45 with a p-value of 0.500, which is well above the 0.05 significance level. This exhibits that the difference in sportsmanship levels between the two management types is not statistically significant, leading to the acceptance of the null hypothesis of no association.

In simple terms, the results indicate that whether an institution is managed by a minority or a non-minority group does not have a meaningful impact on sportsmanship levels of teachers. Although the proportions vary slightly, with non-minority institutions having a marginally greater share of teachers with high sportsmanship this difference is too small to be considered meaningful. This specifies that factors other than the management type, such as institutional policies, leadership style, or workplace environment, may be more influential in shaping sportsmanship behaviour among teachers.

e) Association Between Level of Type of Management and Level of Conscientiousness

H.0.1: There is no significant association between level of type of management and level of conscientiousness among the teachers of higher educational institutions in Kerala

Table 5.85

Chi-Square for Association between Type of Management and Level of Conscientiousness among Teachers of Higher Educational Institutions in Kerala

Level of Type of Management	Level of Conscientiousness		Total	Chi-Square value	p value
	Low level	High Level			
Minority	312 (72.2%)	120 (27.8%)	432 (100%)	1.94	0.163^{NS}
Non-Minority	87 (65.9%)	45 (34.1%)	132 (100%)		
Total	399 (70.7%)	165 (29.3%)	564 (100%)		

^{NS} denotes Not Significant

According to the given table, the conscientiousness levels of teachers are compared between minority and non-minority managed institutions. In minority

institutions, 72.2% of teachers recorded a low level of conscientiousness, while 27.8% reported a high level. For non-minority institutions, 65.9% of teachers were in the low conscientiousness groiup, and 34.1% were in the high conscientiousness group. The chi-square value is 1.94 with a p-value of 0.163, which is above the 0.05 significance threshold. This stipulates that the observed differences are not statistically significant, and the null hypothesis of no association is accepted.

In simpler terms, the type of management whether minority or non-minority, does not have a meaningful impact on whether teachers show high or low conscientiousness. While non-minority institutions have a slightly greater proportion of teachers in the high conscientiousness group, the gap is too small to confirm any real pattern. This proposes that conscientiousness among teachers is likely shaped more by individual personality traits, institutional culture, and professional values rather than by the management type of the institution.

3) Level of OCB and Its Association with NAAC Accreditation Status

a) Association Between Level of NAAC Accreditation Status and Level of Altruism

H.0.1: There is no significant association between level of NAAC grade and level of altruism among the teachers of higher educational institutions in Kerala

Table 5.86

Chi-Square for Association between NAAC Grade and Level of Altruism among the Teachers of Higher Educational Institutions in Kerala

Level of NAAC Grade	Level of Altruism		Total	Chi-Square value	p value
	Low level	High Level			
Not Accredited	69 (51.1%)	66 (48.9%)	135 (100%)	12.68	0.005**
B	66 (44.0%)	84 (56.0%)	150 (100%)		
B+	114 (60.3%)	75 (39.7%)	189 (100%)		
B++ and above	57 (63.3%)	33 (36.7%)	90 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

**denotes significant at 1% level

In the above table, altruism levels of teachers are compared across four categories of NAAC grade, not accredited, B, B+, and B++ and above. Among teachers in not accredited institutions, 51.1% stated a low level of altruism and 48.9% reported a high level. In grade B institutions, 44.0% were in the low altruism category, and 56.0% in the high altruism category. For grade B+ institutions, 60.3% of teachers recorded low altruism, and 39.7% high altruism. In B++ and above institutions, 63.3% exhibited low altruism, while 36.7% reported high altruism. The chi-square value is 12.68 with a p-value of 0.005, which is below the 0.01 threshold, designating a statistically significant association between NAAC grade and altruism level. Thus, the null hypothesis is rejected.

In simple terms, the NAAC grade of an institution appears to be linked to the level of altruism demonstrated by its teachers. The highest proportion in the low altruism category is seen in B++ and above institutions (63.3%), while the highest proportion in the high altruism category is observed in grade B institutions (56.0%). This means that moderately graded institutions like grade B tend to have more teachers with higher altruism compared to both lower-graded and higher-graded institutions. The pattern recommends that institutional quality rating alone does not guarantee higher altruistic behaviour, and factors like work environment, leadership approach, and community engagement opportunities may play a larger role.

b) Association Between Level of NAAC Accreditation Status and Level of Courtesy

H.0.1: There is no significant association between level of NAAC grade and level of courtesy among the teachers of higher educational institutions in Kerala

Table 5.87

Chi-Square for Association between NAAC Grade and Level of Courtesy among the Teachers of Higher Educational Institutions in Kerala

Level of NAAC Grade	Level of Courtesy		Total	Chi-Square value	p value
	Low level	High Level			
Not Accredited	78 (57.8%)	57 (42.2%)	135 (100%)	5.22	0.156^{NS}
B	72 (48.0%)	78 (52.0%)	150 (100%)		
B+	111 (58.7%)	78 (41.3%)	189 (100%)		
B++ and above	45 (50.0%)	45 (50.0%)	90 (100%)		
Total	306 (54.3%)	258 (45.7%)	564 (100%)		

^{NS} denotes Not Significant

From the given table, courtesy levels of teachers are compared across four categories of NAAC grade not accredited, B, B+, and B++ and above. Among teachers in not accredited institutions, 57.8% showed a low level of courtesy and 42.2% reported a high level. In grade B institutions, 48.0% were in the low courtesy category, and 52.0% in the high courtesy category. In grade B+ institutions, 58.7% of teachers reported low courtesy, and 41.3% high courtesy. In B++ and above institutions, 50.0% reported low courtesy, whereas 50.0% reported high courtesy. The chi-square value is 5.22 with a p-value of 0.156, which is higher than the 0.05 significance threshold, indicating that the differences are not statistically significant. Therefore, the null hypothesis of no association is accepted.

In simple terms, the NAAC grade of an institution does not appear to have a meaningful impact on the courtesy levels of its teachers. The highest proportion in the low courtesy category is identifies in grade B+ institutions (58.7%), while the highest proportion in the high courtesy category is in grade B institutions (52.0%). Although there are small variations between the groups, these differences are not strong enough to verify a real relationship. This proposes that courtesy among teachers may be shaped more by personal values, institutional culture, or interpersonal dynamics rather than the accreditation grade of the institution.

c) Association Between Level of NAAC Accreditation Status and Level of Virtue

H.0.1: There is no significant association between level of NAAC grade and level of virtue among the teachers of higher educational institutions in Kerala

Table 5.88

Chi-Square for Association between NAAC Grade and Level of Virtue among the Teachers of Higher Educational Institutions in Kerala

Level of NAAC Grade	Level of Virtue		Total	Chi-Square value	p value
	Low level	High Level			
Not Accredited	60 (44.4%)	75 (55.6%)	135 (100%)	5.70	0.127^{NS}
B	72 (48.0%)	78 (52.0%)	150 (100%)		
B+	108 (57.1%)	81 (42.9%)	189 (100%)		
B++ and above	45 (50.0%)	45 (50.0%)	90 (100%)		
Total	285 (50.5%)	279 (49.5%)	564 (100%)		

^{NS} denotes Not Significant

From the given table, virtue levels of teachers are compared across four categories of NAAC grade, not accredited, B, B+, and B++ and above. Among teachers in not accredited institutions, 44.4% reported a low level of virtue and 55.6% recorded a high level. In grade B institutions, 48.0% were in the low virtue category, and 52.0% in the high virtue category. For grade B+ institutions, 57.1% of teachers stated low virtue, and 42.9% high virtue. In B++ and above institutions, 50.0% expressed low virtue, while 50.0% reported high virtue. The chi-square value is 5.70 with a p-value of 0.127, which is higher than the 0.05 significance threshold, indicating that the differences are not statistically significant. So, the null hypothesis of no association is accepted.

In simple terms, the NAAC grade of an institution does not exhibit a meaningful connection with the virtue levels of teachers. The greatest proportion in the low virtue category is found in grade B+ institutions (57.1%), whereas the highest

proportion in the high virtue category is seen in not accredited institutions (55.6%). Although the percentages differ slightly across grades, the variations are not statistically strong enough to indicate a real link. This recommends that virtue among teachers is likely shaped more by individual ethics, personal commitment, and institutional culture rather than the accreditation grade of the institution.

d) Association Between Level of NAAC Accreditation Status and Level of Sportsmanship

H.0.1: There is no significant association between level of NAAC grade and level of sportsmanship among the teachers of higher educational institutions in Kerala

Table 5.89

Chi-Square for Association between NAAC Grade and Level of Sportsmanship among Teachers of Higher Educational Institutions in Kerala

Level of NAAC Grade	Level of Sportsmanship		Total	Chi-Square value	p value
	Low level	High Level			
Not Accredited	93 (68.9%)	42 (31.1%)	135 (100%)	3.14	0.369^{NS}
B	90 (60.0%)	60 (40.0%)	150 (100%)		
B+	123 (65.1%)	66 (34.9%)	189 (100%)		
B++ and above	54 (60.0%)	36 (40.0%)	90 (100%)		
Total	360 (63.8%)	204 (36.2%)	564 (100%)		

^{NS} denotes Not Significant

In the given table, sportsmanship levels of teachers are compared across four categories of NAAC grade, not accredited, B, B+, and B++ and above. Among teachers in not accredited institutions, 68.9% expressed a low level of sportsmanship and 31.1% reported a high level. In case of grade B institutions, 60.0% were in the low sportsmanship category, and 40.0% in the high sportsmanship category. In grade B+ institutions, 65.1% of teachers reported low sportsmanship, and 34.9% high

sportsmanship. For B++ and above institutions, 60.0% reported low sportsmanship, while 40.0% reported high sportsmanship. The chi-square value is 3.14 with a p-value of 0.369, which is greater than the 0.05 significance level, showing that the differences are not statistically significant. Hence, the null hypothesis of no association is accepted.

In simple terms, the NAAC grade of an institution does not appear to have a meaningful influence on the sportsmanship levels of teachers. The highest proportion in the low sportsmanship category is observed in not accredited institutions (68.9%), while the highest proportion in the high sportsmanship category is seen in both grade B and B++ and above institutions (40.0% each). Although there are some percentage differences between groups, these are not strong enough to stipulate a real relationship. This implies that sportsmanship among teachers is likely influenced more by personal attitude, workplace culture, and institutional practices rather than by the accreditation grade.

e) Association Between Level of NAAC Accreditation Status and Level of Conscientiousness

H.0.1: There is no significant association between level of NAAC grade and level of conscientiousness among the teachers of higher educational institutions in Kerala

Table 5.90

Chi-Square for Association between NAAC Grade and Level of Conscientiousness among Teachers of Higher Educational Institutions in Kerala

Level of NAAC Grade	Level of Conscientiousness		Total	Chi-Square value	p value
	Low level	High Level			
Not Accredited	90 (66.7%)	45 (33.3%)	135 (100%)	2.21	0.528^{NS}
B	111 (74.0%)	39 (26.0%)	150 (100%)		
B+	132 (69.8%)	57 (30.2%)	189 (100%)		
B++ and above	66 (73.3%)	24 (26.7%)	90 (100%)		
Total	399 (70.7%)	165 (29.3%)	564 (100%)		

^{NS} denotes Not Significant

In the above table, conscientiousness levels of teachers are compared across four categories of NAAC grade, not accredited, B, B+, and B++ and above. In case of teachers in not accredited institutions, 66.7% reported a low level of conscientiousness and 33.3% reported a high level. Regarding grade B institutions, 74.0% were in the low conscientiousness category, and 26.0% in the high conscientiousness category. In grade B+ institutions, 69.8% of teachers reported low conscientiousness, and 30.2% high conscientiousness. For B++ and above institutions, 73.3% reported low conscientiousness, while 26.7% reported high conscientiousness. The chi-square value is 2.21 with a p-value of 0.528, which is higher than the 0.05 significance level, indicating that the differences are not statistically significant. Thus, the null hypothesis of no association is accepted.

In simple terms, the NAAC grade of an institution does not have a meaningful impact on the conscientiousness levels of teachers. The greatest proportion in the low conscientiousness category is found in grade B institutions (74.0%), while the highest proportion in the high conscientiousness category is seen in not accredited institutions (33.3%). Although these percentages vary slightly between groups, the differences are too small to suggest any real relationship. This signify that conscientiousness among teachers is more likely shaped by individual personality traits, work ethics, and institutional culture rather than by the accreditation grade.

5.5 Conclusion

The analysis of Organizational Citizenship Behaviour (OCB) among teachers in government-aided higher educational institutions in Kerala revealed strong and consistent associations between personal attributes, intellectual orientations, and behavioural outcomes. The findings demonstrated that teachers with higher levels of rationality, curiosity, open-mindedness, diversity acceptance, and problem-solving ability consistently exhibited superior OCB traits such as altruism, courtesy, virtue, sportsmanship, and conscientiousness. This implies that intellectual and attitudinal dimensions of scientific temper substantially influence teachers' voluntary and cooperative behaviours that go beyond formal job expectations. The results also established that these scientific and cognitive dispositions nurture a sense of empathy,

ethical discipline, and institutional commitment, which are vital for maintaining harmony and productivity in academic settings.

Equally significant was the impact of personality traits such as agreeableness, emotional stability, humility, openness to experience, and proactive personality on OCB dimensions. Teachers with higher emotional stability and agreeableness demonstrated stronger tendencies towards collaboration, tolerance, and moral conduct. These associations highlight the importance of fostering emotional intelligence, adaptability, and ethical orientation among educators to strengthen their interpersonal and organizational citizenship qualities. Furthermore, the study underlined that teachers' perception of organizational characteristics such as inclusivity, diversity, and encouragement of innovative problem-solving played a key role in sustaining their motivation to act selflessly and contribute positively to institutional development.

In conclusion, the chapter underscores that promoting scientific temper, work-life balance, academic enthusiasm, and personality development within higher education institutions can significantly enhance the culture of organizational citizenship. The findings emphasize the need for structured faculty development programs that integrate cognitive, emotional, and ethical training components, ensuring that educators are not only academically competent but also socially responsible and institutionally engaged. Strengthening these behavioural dimensions can lead to sustainable academic excellence, mutual respect, and institutional harmony key determinants of the long-term effectiveness of higher education in Kerala.

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Chapter 6

PERFORMANCE EXCELLENCE OF GOVERNMENT AIDED COLLEGES IN KERALA

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Chapter 6

PERFORMANCE EXCELLENCE OF GOVERNMENT AIDED COLLEGES IN KERALA

6.1 Introduction

This chapter presents a comprehensive empirical investigation of performance excellence among government aided colleges in Kerala through an integrated institutional, organisational, and behavioural analytical framework. Institutional excellence is examined through the combined dimensions of academic service orientation and pedagogical innovation, which together represent both the service responsiveness and instructional advancement of higher education institutions. The chapter evaluates whether these dimensions operate above benchmark levels, how institutions group into excellence categories, and how organisational, behavioural, and structural characteristics shape performance patterns. Using multiple statistical procedures and multilevel analytical approaches, the study provides a rigorous evidence-based assessment of institutional functioning across different categories of colleges.

The chapter further explores the mechanisms underlying institutional performance variation by analysing how governance structure, accreditation status, autonomy, organisational climate, relational dynamics, and citizenship behaviours collectively shape institutional outcomes. Particular attention is given to determining whether excellence is primarily associated with formal structural characteristics or with internal organisational ecosystems such as trust, teamwork, fairness, and role clarity. By adopting a sequential analytical approach, the chapter demonstrates that institutional excellence develops through layered organisational processes rather than through single-factor influences. This comprehensive examination contributes both theoretical insight and policy-relevant understanding of how excellence is formed, sustained, and differentiated across institutions.

6.2 Objective Covered

Objective III: To examine the performance excellence among government aided colleges in Kerala using multidimensional indicators.

Table 6.1

Statistical Tools Employed

Statistical Technique	Purpose
Confidence Interval Estimation	Assessing whether construct means exceed benchmark levels
Hierarchical Clustering	Identifying number of institutional groups
K-Means Clustering	Forming homogeneous institutional profiles
Independent Samples t Test	Comparing mean differences between two categories
One-Way Analysis of Variance (ANOVA with Post Hoc)	Comparing differences among multiple categories
Two-Way Analysis of Variance	Examining interaction effects
Analysis of Covariance (ANCOVA)	Testing effects while adjusting for control factors
Multivariate Analysis of variance (MANOVA)	Examining combined outcomes simultaneously
Multivariate Analysis of co-variance (MANCOVA)	Examining combined outcomes simultaneously with co-variate
Partial Correlation	Correlation with controlling factors
Correspondence Analysis	Exploring associations between categorical variables
Discriminant Analysis	Classifying institutional profiles
Hierarchical Regression	Testing incremental explanatory contribution of factors
Assumption Tests	Evaluating variance and covariance conditions

Table 6.2

Constructs Used in the Study

Construct Domain	Construct
Institutional Excellence Dimensions	Academic Service Orientation Pedagogical Innovation
Psycho dynamic work place milieu	Supportive Organisational Climate Organisational Justice, Inclusiveness and Equity Role Clarity Recognition and Motivation Transformational Leadership
Employee Synergising Dynamics	Teamwork and Cooperation Trust in Management Job Satisfaction Job Commitment
Organisational Citizenship Behaviour – Individual	Courtesy Altruism Civic Virtue
Organisational Citizenship Behaviour – Organization	Conscientiousness Sportsmanship
Institutional Structural Attributes	Accreditation Grade Autonomous Status
Composite Performance Indicator	Institutional Excellence Total

Table 6.3

Categorical Variables Used

Variable	Categories
Type of Management	Minority, Non-Minority
Accreditation Grade	Not Accredited, B, B Plus, B Plus Plus and Above
Autonomous Status	Yes, No
Institutional Excellence Cluster	Developing, High, Emerging
Level of Interpersonal Citizenship Behaviour	Low, Moderate, High
Level of Organisational Citizenship Behaviour	Low, Moderate, High

6.3 Confidence Interval–Based Significance Assessment of Academic Service Orientation and Pedagogical Innovation

H_0: The population mean of the construct is less than or equal to 3.

Table 6.4

Confidence Interval–Based Significance Decisions

Construct	Mean	Standard Deviation	95% CI Lower Limit	95% CI Upper Limit	Cut-off Value	Decision
Academic Service Orientation	4.01	0.99	3.92	4.09	3.00	Reject H_0
Pedagogical Innovation	3.84	1.07	3.75	3.92	3.00	Reject H_0

For Academic Service Orientation, the sample mean is 4.01, and the ninety-five percent confidence interval ranges from 3.93 to 4.09. Since the lower limit of the interval is clearly higher than the benchmark value of 3, the null hypothesis is rejected. This indicates that the population mean of Academic Service Orientation is statistically and significantly above the neutral level at the five percent significance level. The narrow confidence interval further indicates high estimation precision and consistency among respondents.

For Pedagogical Innovation, the mean value is 3.84, with a ninety-five percent confidence interval extending from 3.75 to 3.93. As the entire interval lies above the benchmark value, the null hypothesis is again rejected. This confirms that pedagogical innovation practices are perceived at a statistically significant positive level within the population. The slightly wider interval reflects greater variability in pedagogical practices, but does not weaken the statistical conclusion.

The confidence interval–based hypothesis testing provides strong empirical evidence that both Academic Service Orientation and Pedagogical Innovation operate at levels significantly higher than the neutral benchmark. The absence of overlap between the confidence intervals and the benchmark value demonstrates that these results are not due to sampling fluctuations but represent genuine population-level characteristics.

From an institutional and policy perspective, the findings validate that academic service orientation is deeply embedded and consistently practiced, while pedagogical innovation is positively established but shows scope for further strengthening and standardisation. The use of confidence interval estimation enhances interpretive clarity by simultaneously communicating statistical significance and estimation precision, making it particularly suitable for accreditation reporting, quality assurance assessments, and evidence-based institutional planning.

6.4 Determination of Institutional Excellence Clusters Using Hierarchical and K-Means Cluster Analysis

1) Determination of number of clusters using dendrogram and agglomeration schedule

Hierarchical cluster analysis was performed using the Average Linkage method (between groups) on 564 valid cases. The dendrogram showed that many case combinations occurred at very low rescaled distances, while only a few merges occurred at substantially higher distances near the end, indicating the existence of a small number of well-separated clusters. This visual evidence was supported by the agglomeration schedule. The fusion coefficients increased slowly for most stages and then rose sharply in the final steps, especially from Stage 561 to Stage 562 and from Stage 562 to Stage 563 (21.000 to 29.318 to 44.351). Such a sudden rise indicates that the algorithm begins merging comparatively dissimilar clusters at the end. Therefore, the cluster solution should be retained just before these large jumps. Based on this combined evidence, a three-cluster solution was selected as the most interpretable and parsimonious grouping of the sample.

Table 6.5

Sample size and final number of clusters formed

Item	Result reported for thesis
Clustering method	Hierarchical cluster analysis (Average Linkage between groups)
Number of valid cases used (N)	564
Key evidence used to decide clusters	Dendrogram cut and agglomeration coefficient jump pattern
Highest fusion jumps observed	Stage 561: 21.000; Stage 562: 29.318; Stage 563: 44.351
Number of clusters formed (final retained solution)	3 clusters

6.5 K-means cluster analysis following hierarchical clustering

In the present study, hierarchical cluster analysis using the Average Linkage method (between groups) was initially employed to explore the underlying grouping structure among the respondents. Examination of the dendrogram and the agglomeration schedule revealed a clear pattern of late-stage fusion with a pronounced increase in agglomeration coefficients, indicating the presence of three distinct and well-separated clusters within the data. Based on this empirical evidence, a three-cluster solution was identified as the most appropriate and parsimonious representation of respondent heterogeneity.

To refine this preliminary classification and to obtain stable and interpretable cluster memberships, K-means cluster analysis was subsequently performed by fixing the number of clusters at three. The hierarchical results were thus used as a guiding framework for the non-hierarchical K-means procedure, which iteratively reallocates cases to clusters so as to minimise within-cluster variance and maximise between-cluster variance. This two-stage clustering approach combines the exploratory strength of hierarchical methods with the optimisation capability of K-means clustering, thereby enhancing the robustness, stability, and practical interpretability of the final cluster solution.

Accordingly, the K-means analysis provides a refined segmentation of respondents into three homogeneous groups, which are further examined through cluster centres, inter-cluster distances, and descriptive ANOVA to support meaningful profiling and subsequent analytical comparisons.

Table 6.6

Initial Cluster Centers (Starting Configuration)

Variable	Cluster 1	Cluster 2	Cluster 3
ASO_1	3.00	5.00	1.00
ASO_2	1.00	5.00	5.00
ASO_3	1.00	5.00	3.00
ASO_4	3.00	5.00	1.00
PDI_1	5.00	3.00	2.00
PDI_2	5.00	5.00	2.00
PDI_3	2.00	5.00	3.00
PDI_4	4.00	5.00	1.00

The initial cluster centers indicate that the algorithm started with clearly contrasting response patterns across the three clusters. Cluster 2 was initialized with consistently high values across most ASO and PDI indicators, suggesting a high-intensity profile. Cluster 3 started with predominantly low values, indicating a weak or disengaged profile. Cluster 1 showed mixed or moderate starting values. These contrasting initial seeds ensured sufficient separation for effective iterative refinement.

The clear differentiation in initial centers confirms that the K-means procedure was appropriately seeded, allowing the algorithm to meaningfully converge toward distinct behavioural or perceptual groupings aligned with the constructs under study.

Table 6.7

Iteration History and Convergence Behaviour

Iteration	Cluster 1	Cluster 2	Cluster 3
1	3.426	2.263	3.368
2	0.639	0.125	0.286
3	0.434	0.112	0.240
4	0.387	0.080	0.368
5	0.000	0.000	0.000

The iteration history shows a steady reduction in the change of cluster centers across iterations, with complete stabilization achieved at the fifth iteration. The absence of further movement in cluster centers confirms that convergence was reached efficiently. The reported minimum distance between initial centers (7.348) further supports the robustness of the clustering process.

Rapid and stable convergence indicates that the three-cluster solution is structurally sound and not a result of random or unstable partitioning. This enhances confidence in using the derived clusters for further comparative and inferential analyses.

Table 6.8

Final Cluster Centers (Mean Scores)

Variable	Cluster 1	Cluster 2	Cluster 3
ASO_1	3.59	4.50	2.25
ASO_2	3.54	4.56	2.29
ASO_3	3.46	4.49	2.33
ASO_4	3.27	4.47	2.04
PDI_1	3.32	4.38	1.96
PDI_2	3.12	4.35	2.04
PDI_3	2.83	4.11	1.79
PDI_4	3.37	4.40	1.88

The final cluster centers reveal a clear and interpretable gradient across clusters. Cluster 2 consistently records the highest mean values across all ASO and PDI indicators, representing a high-engagement or high-intensity group. Cluster 1 reflects moderate levels across dimensions, while Cluster 3 shows consistently low mean scores, indicating minimal engagement or weaker perceptions.

The pattern supports a meaningful three-tier segmentation of respondents into high, moderate, and low profiles. This structure is theoretically coherent and practically useful for targeted policy, managerial, or intervention-oriented strategies.

Table 6.9

Distances between Final Cluster Centers

Cluster	1	2	3
1	—	3.116	3.525
2	3.116	—	6.608
3	3.525	6.608	—

The distance matrix shows that Cluster 2 and Cluster 3 are the most widely separated, indicating maximum dissimilarity between high-intensity and low-intensity groups. Cluster 1 lies at an intermediate distance from both clusters, confirming its role as a moderate or transitional group.

The magnitude of inter-cluster distances confirms strong discriminant separation among the clusters, particularly between the extreme profiles. This strengthens the validity of the three-cluster solution and justifies further analytical comparisons across clusters.

Table 6.10

ANOVA Results for Cluster Mean Differences

Variable	F value	Significance
ASO_1	413.218	<0.001**
ASO_2	384.488	<0.001**
ASO_3	376.464	<0.001**
ASO_4	456.562	<0.001**
PDI_1	447.895	<0.001**
PDI_2	399.860	<0.001**
PDI_3	409.502	<0.001**
PDI_4	429.285	<0.001**

The ANOVA results indicate substantial mean differences across clusters for all ASO and PDI variables. Although these F values are descriptive in nature, given that clusters were formed to maximize between-group differences, they clearly demonstrate that each variable meaningfully contributes to cluster differentiation.

All selected indicators play a significant role in defining the cluster structure. This confirms that the clustering solution is comprehensive and that no variable is redundant in explaining group heterogeneity.

Table 6.11

Number of Cases in Each Cluster

Cluster	Number of cases	Percentage
Cluster 1	123	21.8
Cluster 2	369	65.4
Cluster 3	72	12.8
Total	564	100.0

The distribution of cases shows that the majority of respondents belong to Cluster 2, followed by Cluster 1, with a smaller proportion in Cluster 3. This indicates that high-level ASO and PDI characteristics dominate the sample, while a smaller segment exhibits low levels across these dimensions.

The dominance of the high-intensity cluster has important practical implications, suggesting that most respondents exhibit favourable or strong orientations on the studied constructs. However, the presence of a distinct low-level cluster highlights the need for focused interventions or differentiated strategies for this vulnerable or disengaged subgroup.

1) Cluster formation based on institutional excellence

In the present study, Academic Service Orientation (ASO) and Pedagogical Innovations (PDI) are conceptualised as complementary and integrative dimensions representing the broader construct of institutional excellence. Academic Service Orientation captures the extent to which institutions demonstrate student-centricity, responsiveness, academic support, and service commitment, while Pedagogical Innovations reflect the adoption of contemporary teaching methods, instructional creativity, technology integration, and learner-focused pedagogical practices. Together, these dimensions provide a holistic assessment of how effectively an institution translates its academic mission into meaningful educational outcomes.

Hierarchical cluster analysis followed by K-means clustering resulted in a three-cluster solution that meaningfully differentiates institutions based on their combined ASO and PDI performance. The final cluster centres revealed a consistent and systematic pattern across both dimensions, allowing the clusters to be interpreted as three distinct types of institutional excellence rather than isolated behavioural or operational segments.

Table 6.12

Cluster Formation Based on Institutional Excellence

Cluster	Level of ASO and PDI	Institutional excellence orientation	Final cluster label
Cluster 1	Moderate and consistent levels	Institutions demonstrating foundational academic service systems and selective pedagogical innovation, with scope for strategic deepening and integration	Developing Institutional Excellence
Cluster 2	High and integrated levels	Institutions exhibiting strong student-centric academic services combined with advanced, innovative, and technology-enabled pedagogical practices	High Institutional Excellence
Cluster 3	Low and fragmented levels	Institutions relying largely on traditional academic services and conventional pedagogy, with limited innovation and service orientation	Emerging Institutional Excellence

6.6 Partial Correlations between Organisational Factors and, Academic Service Orientation and Pedagogical Innovation Controlling for Organisational Citizenship Behaviour

Table 6.13

Comparative Correlations of Organisational Factors with Academic Service Orientation (ASO) with controlling OCB

Independent Variables	Academic Service Orientation (ASO)			
	Bivariate Correlation	Controlling OCB–Individual	Controlling OCB–Organisational	Controlling Total OCB (OCB-I + OCB-O)
Supportive Organisational Climate	0.487	0.355	0.362	0.336
Organisational Justice, Inclusiveness and Equity	0.533	0.390	0.432	0.392
Job Autonomy and Empowerment	0.463	0.247	0.290	0.235
Democratic and Transformational Leadership	0.463	0.247	0.290	0.235
Role Clarity	0.526	0.270	0.333	0.260
Recognition and Motivation	0.578	0.442	0.458	0.428

Note: All correlation coefficients are positive and statistically significant at the 0.01 level (two-tailed).

The partial correlation analysis indicates that Academic Service Orientation is jointly shaped by formal organisational mechanisms and Organisational Citizenship Behaviour at both individual and organisational levels. The observed reduction in

correlation magnitudes after controlling for Organisational Citizenship Behaviour demonstrates that citizenship-related behaviours play a meaningful reinforcing role in translating organisational conditions into service-oriented academic engagement. Individual-level citizenship behaviour appears to strengthen personal commitment to service roles, while organisational-level citizenship behaviour reflects a collective ethos that enhances the impact of supportive climate, justice, role clarity, and recognition systems on academic service orientation.

At the same time, the continued statistical significance of all organisational predictors after controlling for both forms of Organisational Citizenship Behaviour confirms that Academic Service Orientation is not merely a reflection of voluntary or discretionary effort. Instead, it is fundamentally anchored in institutional structures such as equitable governance, transparent recognition mechanisms, empowerment-oriented leadership, and clearly defined academic roles. This dual pattern highlights that Organisational Citizenship Behaviour acts as an enabling pathway that amplifies institutional effects, while organisational systems provide the stable foundation necessary for sustaining service-oriented academic behaviour over time.

Table 6.14

Comparative Correlations of Organisational Factors with Pedagogical Innovation (PDI) with controlling OCB

Independent Variables	Pedagogical Innovation (PDI)			
	Bivariate Correlation	Controlling OCB–Individual	Controlling OCB–Organisational	Controlling Total OCB (OCB-I + OCB-O)
Supportive Organisational Climate	0.380	0.238	0.253	0.224
Organisational Justice, Inclusiveness and Equity	0.484	0.348	0.387	0.351
Job Autonomy and Empowerment	0.340	0.127	0.173	0.119
Democratic and Transformational Leadership	0.340	0.127	0.173	0.119
Role Clarity	0.558	0.375	0.422	0.371
Recognition and Motivation	0.535	0.406	0.426	0.397

Note: All correlation coefficients are positive and statistically significant at the 0.01 level (two-tailed).

The partial correlation results for Pedagogical Innovation reveal a similar but distinct dual influence of organisational factors and Organisational Citizenship Behaviour. The consistent reduction in relationship magnitudes after controlling for Organisational Citizenship Behaviour indicates that innovative teaching practices are partly facilitated by discretionary effort, collaborative intent, and a shared sense of organisational responsibility. Organisational-level citizenship behaviour, in particular, appears to strengthen innovation by fostering a cooperative academic environment that supports experimentation, knowledge sharing, and instructional creativity.

Simultaneously, the persistence of significant relationships between organisational factors and pedagogical innovation after controlling for both individual and organisational citizenship behaviours underscore the decisive role of formal institutional design. Role clarity, recognition and motivation, organisational justice, and supportive leadership continue to exert direct influence on innovative teaching practices independent of citizenship behaviour. This finding suggests that while Organisational Citizenship Behaviour enhances the expression and diffusion of innovation, sustainable pedagogical innovation ultimately depends on clearly articulated expectations, fair evaluation systems, and institutionalised support for teaching innovation.

Integrated Practical Inference

Together, these findings establish that both Academic Service Orientation and Pedagogical Innovation emerge from a complementary interaction between organisational systems and citizenship behaviour. Organisational Citizenship Behaviour enhances and accelerates these outcomes, whereas organisational structures ensure their continuity and institutional legitimacy. Practically, higher education institutions should adopt an integrated approach that simultaneously strengthens organisational policies and nurtures citizenship behaviours to achieve sustained academic service excellence and pedagogical innovation.

6.7 Mapping the Association between Organisational Citizenship Behaviour and Institutional Excellence: A Correspondence Analysis

Table 6.15

Correspondence Table: Levels of OCB-I and Types of Institutional Excellence

Levels of OCB-I	Developing Institutional Excellence	High Institutional Excellence	Emerging Institutional Excellence	Row Total
Low level	75	105	63	243
Moderate level	30	108	0	138
High level	18	156	9	183
Column Total	123	369	72	564

The correspondence table indicates a clear association between the levels of Organisational Citizenship Behaviour directed towards individuals (OCB-I) and the institutional excellence clusters. Institutions classified under High Institutional Excellence account for the largest share of cases across all levels of OCB-I, particularly among respondents reporting high levels of OCB-I. Moderate OCB-I is almost entirely concentrated within High Institutional Excellence, with no representation in Emerging Institutional Excellence, indicating a structural alignment between consistent interpersonal citizenship behaviour and mature institutional systems. In contrast, Emerging Institutional Excellence is largely characterised by low levels of OCB-I, suggesting that institutions in an early developmental stage may not yet have fostered strong voluntary, people-oriented behaviours among members.

The pattern suggests that higher levels of OCB-I are systematically associated with more advanced forms of institutional excellence. Institutions with strong interpersonal citizenship culture are more likely to transition from developing or emerging stages to high institutional excellence. Conversely, institutions with predominantly low OCB-I tend to remain in developing or emerging excellence categories.

From a policy and management perspective, the findings underline the importance of nurturing OCB-I through supportive leadership, recognition mechanisms, and collaborative work culture. Institutions aiming to move towards high institutional excellence should prioritise interpersonal trust, collegial support, and voluntary helping behaviours, as these human-centric factors appear to act as catalysts for institutional maturity and sustained excellence.

Table 6.16

Summary of Correspondence Analysis Dimensions

Dimension	Singular Value	Inertia	Chi-Square	Significance	Proportion of Inertia Accounted	Cumulative Proportion
1	0.434	0.189			0.938	0.938
2	0.112	0.012	113.371	<0.001**	0.062	1.000
Total		0.201			1.000	1.000

The correspondence analysis results show that the overall association between Levels of OCB-I and Institutional Excellence clusters is statistically significant, as indicated by the chi-square value with a probability value less than the conventional significance threshold. Dimension 1 explains the vast majority of the total inertia, accounting for nearly the entire association structure between the two variables. This indicates that the primary relationship between OCB-I and institutional excellence is unidimensional and strongly patterned, rather than dispersed across multiple weak dimensions. Dimension 2 contributes only marginally, suggesting limited secondary variation.

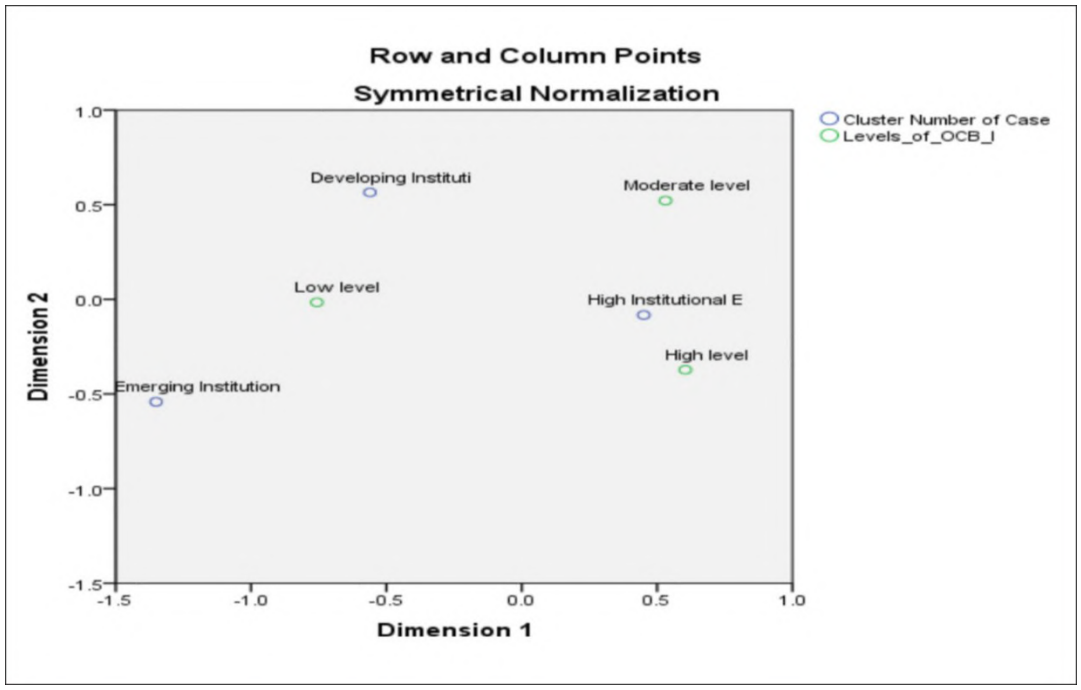
The dominance of the first dimension implies that differences in institutional excellence are primarily driven by variations in OCB-I levels. The strong inertia concentration confirms that interpersonal citizenship behaviour is not a peripheral factor but a central explanatory mechanism distinguishing developing, emerging, and highly excellent institutions.

For institutional diagnostics and strategic planning, this result suggests that measuring and strengthening OCB-I can serve as a reliable indicator and intervention

lever for enhancing institutional excellence. Since the association is structurally strong and statistically validated, administrators and quality assurance bodies can confidently integrate OCB-I-focused initiatives into excellence frameworks, leadership training, and institutional development policies to achieve long-term organisational sustainability and performance.

Figure 6.1

Correspondence Analysis Map



The correspondence plot visually represents the association between Levels of Organisational Citizenship Behaviour directed towards individuals (OCB-I) and the clusters of Institutional Excellence along two extracted dimensions. Dimension 1 is the dominant axis, capturing the major variation and separation among categories, while Dimension 2 provides secondary differentiation. The proximity of points in the map indicates stronger association, whereas distance reflects weaker or contrasting relationships.

High Institutional Excellence is positioned close to the High level of OCB-I on the positive side of Dimension 1, indicating a strong alignment between advanced institutional excellence and high interpersonal citizenship behaviour. This visual

closeness confirms that institutions demonstrating high excellence are characterised by employees who actively engage in voluntary helping, cooperation, and people-oriented behaviours. Moderate level of OCB-I is also located in the positive region of Dimension 1 and moderately close to High Institutional Excellence, suggesting that even consistent but not extreme levels of OCB-I are sufficient to support strong institutional outcomes.

Developing Institutional Excellence appears on the negative side of Dimension 1 and closer to the Low level of OCB-I. This spatial relationship indicates that institutions still in the developmental phase tend to exhibit weaker interpersonal citizenship behaviours. Emerging Institutional Excellence is positioned further away, particularly in the lower-left quadrant, showing its relative isolation from higher OCB-I levels and reinforcing the idea that early-stage institutions struggle to cultivate sustained voluntary behavioural contributions.

Dimension 2 separates Developing and Emerging Institutional Excellence vertically, suggesting internal structural differences between these two non-mature excellence categories. However, this separation is comparatively weaker, supporting the earlier statistical finding that the association is largely unidimensional and driven primarily by OCB-I intensity.

The correspondence map clearly infers that OCB-I functions as a behavioural gradient along which institutional excellence progresses. As institutions move from emerging to developing and finally to high excellence, the level of interpersonal citizenship behaviour systematically increases. The strong clustering of High Institutional Excellence with High OCB-I confirms that voluntary, people-focused behaviours are not incidental but foundational to sustained institutional maturity. Conversely, the isolation of Emerging Institutional Excellence alongside low OCB-I highlights a behavioural deficit that may inhibit institutional advancement.

From a practical and policy standpoint, the visual evidence underscores that institutional excellence cannot be achieved solely through structural reforms, infrastructure, or formal systems. Strengthening OCB-I through supportive leadership, recognition of informal contributions, mentoring culture, and collegial

trust-building initiatives becomes a strategic necessity rather than a supplementary activity. Institutions aspiring to move out of developing or emerging excellence stages should prioritise behavioural interventions that enhance interpersonal citizenship, as these behaviours act as the social engine driving institutional transformation and long-term excellence sustainability.

6.8 Correspondance analysis on Organissational Citizenship Behaviour directed towards the Institution excellance

Table 6.17

Levels of OCB-O and Types of Institutional Excellence

Levels of OCB-O	Developing Institutional Excellence	High Institutional Excellence	Emerging Institutional Excellence	Row Total
Low level	27	30	27	84
Moderate level	84	192	24	300
High level	12	147	21	180
Column Total	123	369	72	564

The correspondence table reveals a clear structural association between levels of organisationally directed citizenship behaviour and institutional excellence clusters. High Institutional Excellence absorbs the largest share of cases across moderate and high levels of OCB-O, indicating that institutions with strong excellence profiles are characterised by employees who actively engage in organisation-supportive behaviours such as rule adherence, institutional loyalty, and proactive contribution beyond formal job roles. Moderate OCB-O is particularly dominant within High Institutional Excellence, suggesting that sustained and consistent organisational commitment plays a central role in maintaining institutional maturity.

In contrast, Developing Institutional Excellence is primarily associated with moderate OCB-O, indicating partial alignment with organisational goals but not yet at a level sufficient to achieve high excellence. Emerging Institutional Excellence shows relatively higher representation under low and high OCB-O compared to moderate, reflecting behavioural inconsistency within institutions at an early stage of excellence development.

The distribution pattern indicates that OCB-O operates as a stabilising behavioural force in institutional systems. Institutions with consistently moderate to high organisational citizenship behaviours are more likely to achieve and sustain high institutional excellence. The presence of Emerging Institutional Excellence across varying OCB-O levels suggests that organisational commitment alone, when not systemically embedded, may not automatically translate into excellence, highlighting the importance of behavioural alignment with institutional processes and governance mechanisms.

From an administrative and governance perspective, the findings stress the importance of cultivating organisation-focused citizenship behaviours through transparent policies, participative governance, ethical leadership, and institutional trust. Institutions aiming to progress towards high excellence should emphasise mechanisms that reinforce organisational identification, compliance with shared values, and voluntary institutional contribution, as these behaviours collectively strengthen institutional coherence and long-term excellence outcomes.

Table 6.18

Summary of Correspondence Analysis Dimensions for OCB-O

Dimension	Singular Value	Inertia	Chi-Square	Significance	Proportion of Inertia Accounted	Cumulative Proportion
1	0.311	0.096			0.704	0.704
2	0.201	0.040	77.208	<0.001**	0.296	1.000
Total		0.137			1.000	1.000

The correspondence analysis summary confirms a statistically significant association between OCB-O levels and institutional excellence categories, as indicated by the chi-square value with a probability value well below the conventional threshold. Dimension 1 accounts for the majority of the total inertia, capturing over two-thirds of the explained association, indicating that organisational citizenship behaviour is a primary axis differentiating institutional excellence. Dimension 2 contributes a meaningful but secondary proportion of inertia,

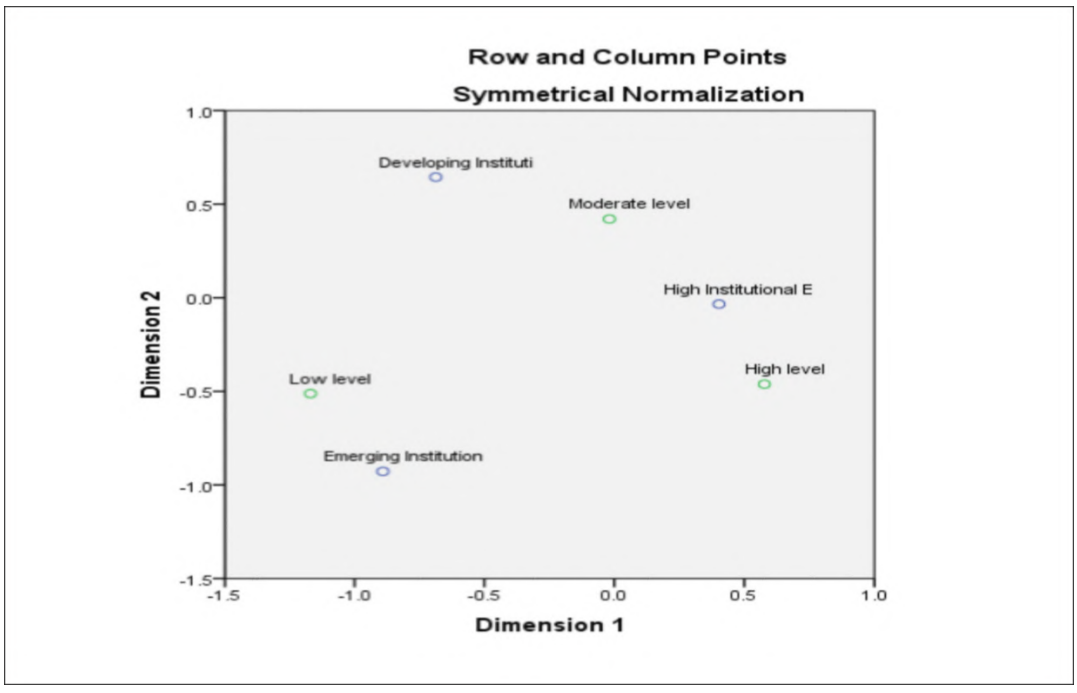
suggesting the presence of nuanced behavioural variations across institutional stages that are not entirely captured by a single dimension.

The two-dimensional structure implies that while OCB-O is a strong determinant of institutional excellence, its influence operates through both dominant and supporting behavioural pathways. Unlike OCB-I, where the association was highly unidimensional, OCB-O exhibits a more distributed explanatory pattern, reflecting the complex nature of organisation-oriented behaviours that interact with institutional rules, culture, and governance systems.

For quality assurance and institutional development frameworks, this finding highlights that strengthening OCB-O requires both structural and cultural interventions. Policies promoting fairness, role clarity, accountability, and organisational pride must be complemented by leadership practices that encourage discretionary institutional contribution. By addressing both dominant and secondary behavioural dimensions, institutions can more effectively leverage OCB-O as a strategic resource for achieving and sustaining institutional excellence.

Figure 6.2

Correspondence Analysis Map



The correspondence map visually depicts the association between levels of Organisational Citizenship Behaviour and institutional excellence clusters along two extracted dimensions. In symmetrical normalization, both row categories (levels of OCB) and column categories (institutional excellence clusters) are displayed in a common geometric space, allowing direct interpretation of their relative proximity and association patterns.

Dimension 1, plotted along the horizontal axis, represents the primary source of variation and captures the dominant behavioural gradient differentiating institutions. Categories positioned on the positive side of Dimension 1 are associated with higher levels of organisational or interpersonal citizenship behaviour and stronger institutional excellence, while those on the negative side are associated with lower behavioural engagement and weaker excellence profiles.

The High level of citizenship behaviour is located on the positive side of Dimension 1 and lies close to High Institutional Excellence, indicating a strong and direct association between elevated citizenship behaviour and advanced institutional excellence. This spatial proximity suggests that institutions characterised by high excellence are supported by strong voluntary, cooperative, and commitment-oriented behaviours among their members.

The Moderate level of citizenship behaviour is positioned closer to the centre but remains aligned towards the positive side of Dimension 1, showing an association with High Institutional Excellence, though less intense than the high-level category. This indicates that consistent, moderate citizenship behaviour is sufficient to support mature institutional systems, even if it does not reflect peak behavioural engagement.

On the negative side of Dimension 1, the Low level of citizenship behaviour is positioned near Emerging Institutional Excellence, demonstrating a clear association between weaker behavioural engagement and institutions at an early or transitional stage of excellence. This alignment highlights that limited voluntary contribution and weaker interpersonal or organisational commitment constrain institutional advancement.

Dimension 2, represented on the vertical axis, captures secondary variation and distinguishes between Developing Institutional Excellence and Emerging Institutional Excellence. Developing Institutional Excellence appears in the upper-left quadrant, associated with moderate to low citizenship behaviour but with relatively stronger internal structure compared to emerging institutions. Emerging Institutional Excellence is located in the lower-left quadrant, reflecting both low behavioural engagement and lower institutional maturity.

The vertical separation between developing and emerging excellence indicates that while both are positioned on the weaker side of the primary behavioural dimension, they differ in their internal consolidation and readiness for progression. However, the comparatively smaller spread along Dimension 2 confirms that the association structure is largely unidimensional and driven primarily by citizenship behaviour intensity.

The correspondence map clearly infers a progressive behavioural–institutional alignment, where movement from emerging to developing and finally to high institutional excellence corresponds with increasing levels of organisational citizenship behaviour. High excellence is visually and statistically anchored to high behavioural engagement, while emerging excellence remains clustered around low citizenship behaviour.

From a policy and institutional development perspective, the correspondence map provides compelling visual evidence that institutional excellence is fundamentally behaviour-driven. Structural reforms, infrastructure, and formal systems alone are insufficient unless accompanied by strong citizenship behaviour among academic and organisational members. Institutions seeking to transition from emerging or developing stages to high excellence must therefore prioritise leadership practices, recognition systems, and organisational cultures that actively foster voluntary contribution, cooperation, and commitment.

6.9 Institutional Excellence versus Accreditation Status: A Correspondence Analysis of Structural and Behavioural Alignment

Table 6.19

Correspondence Table: Institutional Excellence Cluster × NAAC Grade

Institutional Excellence Cluster	Not Accredited	B	B+	B++ and Above	Total
Developing Institutional Excellence	18	12	51	42	123
High Institutional Excellence	108	120	96	45	369
Emerging Institutional Excellence	9	18	42	3	72
Column Total	135	150	189	90	564

The table clearly shows that the largest share of Not Accredited institutions falls under the High Institutional Excellence cluster (108 out of 135). This indicates that many institutions demonstrating strong excellence characteristics such as academic service orientation and pedagogical innovation have not yet obtained accreditation. This is a crucial empirical insight because it contradicts the conventional assumption that accreditation automatically corresponds to higher institutional excellence.

The Developing cluster is mainly concentrated in B+ and B++ grades, suggesting that these institutions may be systematically progressing through structured quality enhancement processes aligned with accreditation frameworks. The Emerging cluster is strongly concentrated in B+, indicating early-stage institutional development.

These findings suggest that accreditation status reflects procedural readiness and documentation systems rather than intrinsic academic excellence. Institutions classified as high excellence but not accredited may possess strong academic practices yet lack administrative infrastructure, quality documentation mechanisms, or institutional compliance structures needed for accreditation recognition.

Therefore, accreditation outcomes should not be interpreted as a direct proxy for institutional excellence.

Table 6.20

Correspondence Analysis Summary

Dimension	Singular Value	Inertia	Chi Square	Sig.	Proportion Explained	Cumulative
1	0.329	0.108			0.696	0.696
2	0.217	0.047	87.609	<0.001**	0.304	1.000
Total		0.155			1.000	1.000

The chi-square value of 87.609 with significance 0.000 confirms a statistically significant association between institutional excellence cluster and accreditation grade. The total inertia of 0.155 indicates a meaningful relationship between the two variables. Dimension 1 explains 69.6 percent of the variation, meaning that most of the association between excellence clusters and accreditation categories is governed by one dominant underlying factor. Dimension 2 contributes only 30.4 percent, representing secondary differentiation.

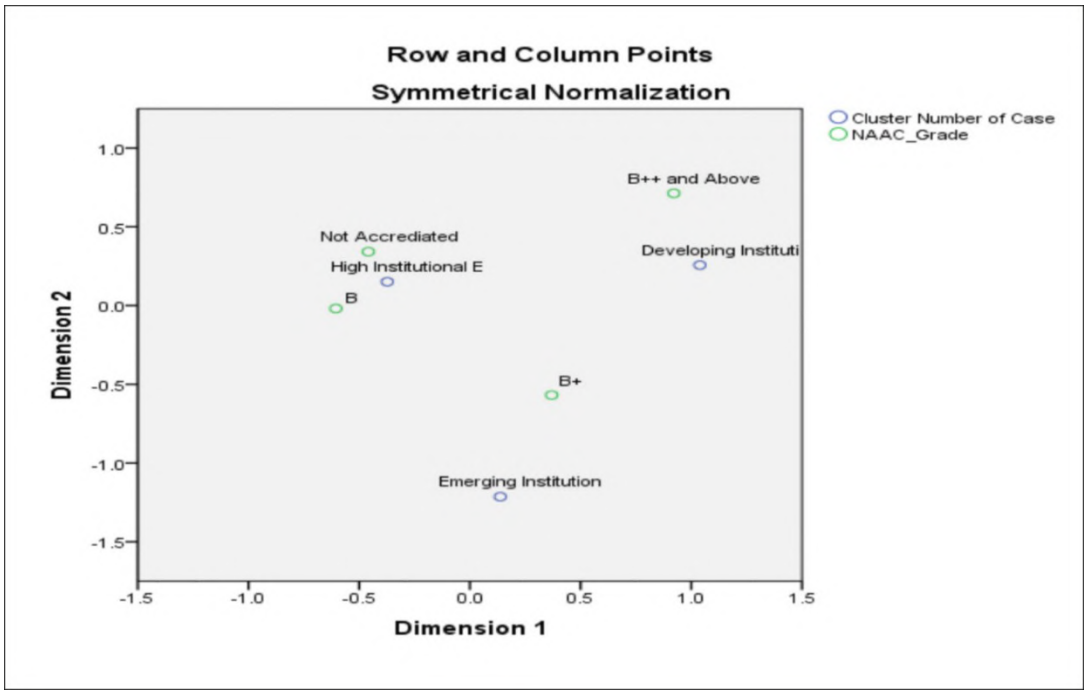
Given the pattern observed in Table 1, this dominant dimension likely reflects institutional procedural readiness rather than excellence itself. In other words, the primary factor structuring the relationship appears to be the extent to which institutions are administratively prepared for accreditation processes rather than their level of academic excellence.

The statistical structure suggests that excellence and accreditation operate as related but distinct dimensions. High excellence can exist without accreditation, and accreditation can occur without uniformly high excellence across all behavioural and pedagogical indicators. Therefore, institutional development strategies should address two parallel goals: strengthening academic excellence and strengthening accreditation infrastructure. Institutions already demonstrating high excellence but lacking accreditation represent high-potential candidates for targeted administrative and quality-system support.

Together, the tables demonstrate that not accredited institutions can still exhibit high institutional excellence, indicating that accreditation is not a sufficient indicator of true institutional performance. The results support the interpretation that accreditation primarily captures formal system maturity, whereas excellence reflects underlying academic capability. This distinction is important for policy, evaluation, and institutional benchmarking, as it highlights the need to assess both structural compliance and substantive academic performance separately.

Figure 6.3

Correspondence Analysis Map



The correspondence plot visually demonstrates the relational structure between Institutional Excellence Clusters and NAAC Grades. The close proximity between the High Institutional Excellence cluster and the Not Accredited category indicates a strong association between these two points. This means that institutions classified as having high excellence characteristics are frequently found among those without accreditation. The Grade B point also appears near this cluster, suggesting that both non-accredited and lower-grade accredited institutions share similar excellence profiles. In contrast, the Developing Institutional Excellence cluster is positioned

closer to B++ and Above, indicating that institutions in structured developmental stages tend to align more closely with higher accreditation categories.

The Emerging Institutional Excellence cluster is located far from most accreditation categories, particularly toward the lower region of Dimension 2, showing that these institutions form a distinct group with weaker alignment to accreditation grades. Meanwhile, B+ is positioned separately, indicating that it represents a transitional accreditation status not strongly tied to any single excellence cluster. Overall, the plot suggests that accreditation status is not a direct indicator of institutional excellence. Instead, the dominant underlying dimension appears to reflect institutional procedural readiness rather than actual academic or pedagogical quality, implying that documentation systems, administrative infrastructure, and compliance capacity may play a larger role in accreditation outcomes than intrinsic excellence itself.

6.10 Impact of Institutional Autonomy on Academic Service Orientation and Pedagogical Innovation: An Independent Samples t Test Analysis

H0.1: There is no significant difference in Academic Service Orientation and pedagogical Innovation between autonomous and non-autonomous institutions.

Table 6.21

Independent Samples t Test Results

Variable	Autonomous	Mean	Standard Deviation	t value	p value
Academic Service Orientation	Yes	4.08	1.08	1.00	0.315^{NS}
	No	3.98	0.96		
Pedagogical Innovation	Yes	4.04	0.99	2.65	0.008**
	No	3.76	1.08		

For Academic Service Orientation, the mean score of autonomous institutions is slightly higher than non autonomous institutions. However, the probability value

is greater than 0.05, which indicates that this difference is not statistically significant. This means that institutional autonomy does not create a meaningful difference in academic service orientation. Practically, this suggests that service orientation is likely influenced more by organisational culture, leadership climate, or faculty motivation rather than structural autonomy status.

For Pedagogical Innovation, autonomous institutions show a clearly higher mean compared to non autonomous institutions, and the probability value is below 0.05, indicating a statistically significant difference. This implies that autonomy positively influences innovative teaching practices. From a practical standpoint, autonomy may provide flexibility in curriculum design, teaching experimentation, assessment methods, and academic decision making, which can foster innovation. Institutions aiming to improve pedagogical innovation should therefore focus on decentralised decision systems, academic freedom, and institutional empowerment mechanisms.

The findings show that autonomy does not automatically enhance all dimensions of institutional excellence. It significantly improves innovation, but not necessarily service orientation. Therefore, policy makers and administrators should recognise that structural autonomy must be complemented with behavioural and cultural initiatives if they want comprehensive institutional excellence.

The t value is 1.006 and the probability value is 0.315, which is greater than 0.05. Therefore, the null hypothesis is accepted. This indicates that autonomy status does not significantly influence Academic Service Orientation. The t value is 2.653 and the probability value is 0.008, which is less than 0.05. Therefore, the null hypothesis is rejected. This indicates that autonomy status significantly affects Pedagogical Innovation.

6.11 Comparative Analysis of Academic Service Orientation and Pedagogical Innovation Across Types of Institutional Management Using Independent Samples t Test

H0.1: There is no significant difference in Academic Service Orientation and pedagogical Innovation between minority and non minority institutions.

Table 6.22

Independent Samples t Test Results Based on Type of Management

Variable	Type of Management	Mean	Standard Deviation	t value	p value
Academic Service Orientation	Minority	4.00	1.04	-0.45	0.647^{NS}
	Non-Minority	4.04	0.82		
Pedagogical Innovation	Minority	3.83	1.13	-0.28	0.776^{NS}
	Non-Minority	3.86	0.84		

For Academic Service Orientation, the mean scores of minority and non minority institutions are nearly identical. The probability value is much higher than 0.05, which indicates that the observed difference is statistically insignificant. This means that type of management does not meaningfully influence academic service orientation levels. In practical terms, service orientation appears to be shaped more by institutional culture, leadership quality, and staff commitment rather than whether the institution is minority or non minority managed.

For Pedagogical Innovation, a similar pattern is observed. Although non minority institutions have a slightly higher mean score, the probability value clearly indicates that this difference is not statistically significant. This shows that management type does not create a real difference in innovative teaching practices. Practically, innovation seems to depend more on internal academic climate, faculty motivation, technological support, and training opportunities rather than institutional ownership category.

The findings demonstrate that structural classification such as minority versus non minority status does not automatically translate into differences in institutional excellence indicators. Both categories function similarly in terms of academic

service orientation and pedagogical innovation. Therefore, policy interventions aiming to improve institutional excellence should prioritise quality enhancement mechanisms, faculty development, innovation support systems, and governance practices rather than focusing only on management category distinctions.

The t value is −0.459 and the probability value is 0.647, which is greater than 0.05. Therefore, the null hypothesis is accepted. This indicates that the type of management does not significantly influence Academic Service Orientation. The t value is −0.284 and the probability value is 0.776, which is greater than 0.05. Therefore, the null hypothesis is accepted. This indicates that the type of management does not significantly affect Pedagogical Innovation.

6.12 Comparative Analysis of Academic Service Orientation and Pedagogical Innovation Across NAAC Grade Using One-Way ANOVA with Post Hoc test

Table 6.23

ANOVA Summary of Academic Service Orientation and Pedagogical Innovation across Accreditation Categories

Variable	Group	Mean	Standard Deviation	F Value	p Value
Academic Service Orientation	Not Accredited	4.311	0.918	14.935	<0.001**
	B	4.240	0.888		
	B+	3.698	1.036		
	B++ and Above	3.833	0.974		
Pedagogical Innovation	Not Accredited	4.222	0.870	10.673	<0.001**
	B	3.900	1.174		
	B+	3.571	1.112		
	B++ and Above	3.733	0.897		

The one way analysis of variance results indicate that accreditation category has a statistically significant effect on both Academic Service Orientation and Pedagogical Innovation. For Academic Service Orientation, the F statistic is 14.935 with a probability value less than 0.001, indicating that at least one accreditation group differs significantly from the others. Similarly, for Pedagogical Innovation, the F statistic is 10.673 with a probability value less than 0.001, confirming significant

differences among accreditation categories. Since the probability values for both constructs are far below the conventional threshold of 0.05, the null hypothesis of equal group means is rejected for both variables. However, the specific group differences cannot be identified from this test alone and require post hoc analysis for detailed pairwise comparisons.

Table 6.24

Tukey Post Hoc Comparison of NAAC Grade Differences
Academic Service Orientation

Comparison	Mean Difference	p Value	Interpretation	Higher Mean Group
Not Accredited vs B	0.071	0.924	Not significant	No difference
Not Accredited vs B+	0.613	0.000	Significant	Not Accredited
Not Accredited vs B++ and Above	0.478	0.002	Significant	Not Accredited
B vs B+	0.542	0.000	Significant	B
B vs B++ and Above	0.407	0.009	Significant	B
B+ vs B++ and Above	−0.135	0.692	Not significant	No difference

Table 6.25

Pedagogical Innovation

Comparison	Mean Difference	p Value	Interpretation	Higher Mean Group
Not Accredited vs B	0.322	0.047	Significant	Not Accredited
Not Accredited vs B+	0.651	0.000	Significant	Not Accredited
Not Accredited vs B++ and Above	0.489	0.003	Significant	Not Accredited
B vs B+	0.329	0.022	Significant	B
B vs B++ and Above	0.167	0.629	Not significant	No difference
B+ vs B++ and Above	−0.162	0.620	Not significant	No difference

The Tukey post hoc results indicate statistically significant pairwise differences among several NAAC grade categories for both constructs. For Academic Service Orientation, Not Accredited institutions show significantly higher scores than B+, and B++ and Above categories, while B grade institutions also perform significantly higher than B+ and B++ and Above groups. However, there is no significant difference between Not Accredited and B grades, nor between B+ and

B++ and Above grades. This indicates that the lower accreditation tier B+ tends to score comparatively lower, whereas Not Accredited and B groups exhibit relatively stronger academic service orientation levels.

For Pedagogical Innovation, Not Accredited institutions again demonstrate significantly higher scores than all other accreditation categories, including B, B+, and B++ and Above. B grade institutions also perform significantly higher than B+ institutions. However, no significant differences exist between B and B++ and Above, or between B+ and B++ and Above categories. This pattern suggests that pedagogical innovation is comparatively stronger in institutions without accreditation and moderately strong in B grade institutions, while B+ institutions tend to show relatively lower innovation levels.

Across both constructs, a consistent pattern emerges where Not Accredited institutions often exhibit higher mean levels than several accredited groups, and B grade institutions frequently outperform B+ institutions. Meanwhile, B+ and B++ and Above categories generally do not differ significantly from each other. This indicates that accreditation level does not always correspond linearly with higher academic service orientation or pedagogical innovation, highlighting the need for deeper institutional analysis rather than relying solely on accreditation status as a performance indicator.

6.13 Interaction Effect of Type of Management and Autonomous Status on Academic Service Orientation using Two-way ANOVA

Table 6.26

Descriptive Statistics for Academic Service Orientation

Type of Management	Autonomous Status	Mean	Standard Deviation
Minority	Yes	4.06	1.09
Minority	No	3.96	1.01
Minority Total	—	4.00	1.04
Non-Minority	Yes	5.00	0.00
Non-Minority	No	4.02	0.82
Non-Minority Total	—	4.04	0.82
Overall Yes	—	4.08	1.08
Overall No	—	3.98	0.96
Grand Total	—	4.01	0.99

The mean scores indicate that academic service orientation is generally moderate across all institutional categories. Autonomous institutions show slightly higher averages than non-autonomous ones, but the difference is minimal. Minority and non-minority institutions also display nearly identical means, indicating that institutional classification does not substantially influence service orientation levels.

Table 6.27

Levene's Test of Equality of Variances

F	df1	df2	Significance
6.823	3	560	<0.001**

The significant value below .05 indicates that the homogeneity of variance assumption is violated. This means variability differs between groups. However, because the sample size is large, the analysis remains fairly robust, though interpretation should emphasise effect sizes rather than only significance.

Table 6.28

Interaction Effect of Type of Management and Autonomous Status on Academic Service Orientation

Source	Sum of Squares	df	Mean Square	F	Significance	Partial Eta Squared
Type of Management × Autonomous Status	2.218	1	2.218	2.242	0.135^{NS}	.004

The interaction effect between type of management and autonomous status is not statistically significant because the significance value is greater than .05. This indicates that the effect of autonomy on academic service orientation does not vary depending on whether an institution is minority or non-minority. The effect size is extremely small, showing that the combined influence of these two structural characteristics explains only a negligible proportion of variation in academic service orientation.

Institutional autonomy does not strengthen or weaken the relationship between management type and academic service orientation. In other words, autonomy does not function as a conditional factor that changes how management structure influences academic service behaviour. This suggests that these administrative categories operate independently rather than interactively in shaping institutional outcomes.

From a policy and institutional development perspective, the absence of an interaction effect implies that granting autonomy alone will not differentially improve service orientation across different management types. Therefore, educational planners and administrators should not rely solely on structural reforms such as autonomy status to enhance institutional excellence. Instead, improvement initiatives should prioritise internal organisational dynamics such as leadership quality, faculty motivation systems, collaborative climate, and innovation culture, which are more likely to produce meaningful improvements in academic service orientation.

6.14 Joint Effect of Type of Management and Accreditation Grade on Academic Service Orientation using Two-way ANOVA

Table 6.29

Levene's Test of Equality of Error Variances

F	df1	df2	Significance
6.882	7	556	<0.001**

The test is significant, indicating that the assumption of equal variances across groups is violated. This means variability differs among combinations of management type and accreditation grade. However, with a large sample size, analysis of variance remains fairly robust. Since variance homogeneity is violated, conclusions should rely more on effect sizes and patterns rather than significance alone. Interpretation should be cautious but still valid due to the sample size.

Table 6.30

Interaction Effect of Type of Management and NAAC Grade on Academic Service Orientation

Source	Sum of Squares	df	Mean Square	F	Significance	Partial Eta Squared
Type of Management × NAAC Grade	15.229	3	5.076	5.828	<0.001**	.030

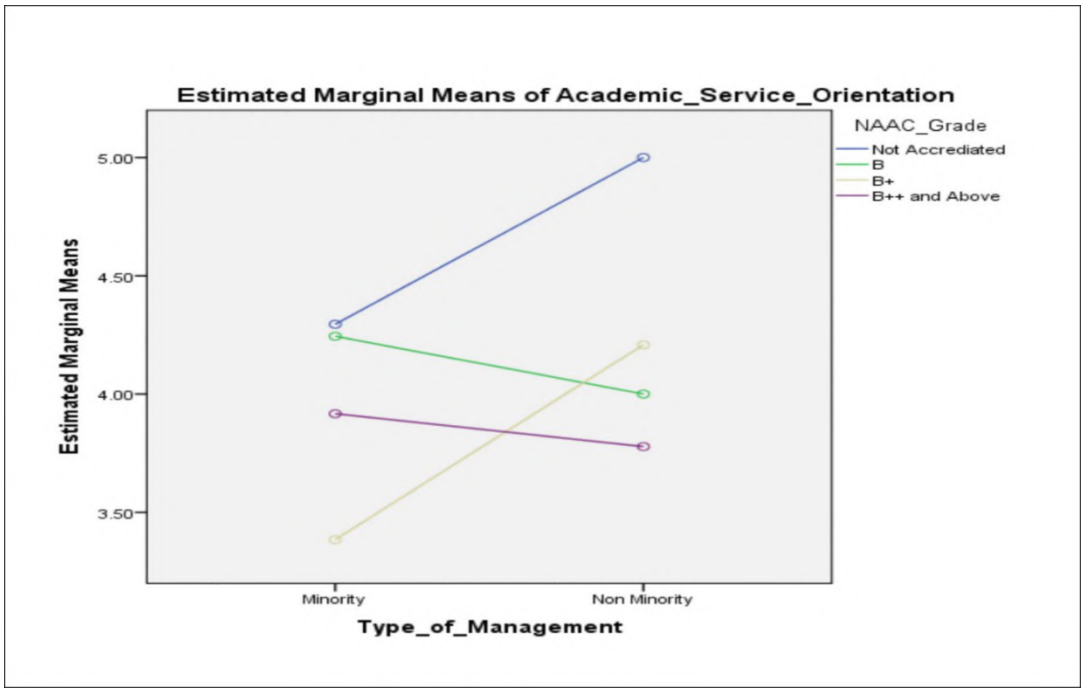
The interaction between type of management and accreditation grade is statistically significant because the significance value is less than .05. This indicates that the influence of accreditation grade on academic service orientation differs across management categories. In other words, accreditation level does not affect all institutional types in the same way. The effect size indicates a small but meaningful interaction effect, suggesting that the combined influence of management structure and accreditation status explains a measurable portion of variation in academic service orientation.

Management type acts as a conditioning factor that modifies how accreditation grade influences academic service orientation. This confirms that institutional excellence is shaped not by isolated structural variables but by their joint operation. The presence of a significant interaction implies that conclusions based solely on main effects would be incomplete or misleading.

The significant interaction suggests that accreditation policies and quality improvement initiatives should be customised for different management categories. Accreditation upgrades may produce stronger improvements in some institutional types than others. Therefore, policymakers, accreditation agencies, and administrators should design differentiated quality enhancement strategies rather than uniform reforms. Institutional leaders should also consider their governance structure when implementing accreditation-driven improvements to maximise service orientation outcomes.

Figure 6.4

Correspondence Analysis Map



6.15 Interaction Plot Showing the Joint Effect of Type of Management and Accreditation Grade on Academic Service Orientation

The interaction plot shows how academic service orientation varies jointly across type of management and accreditation grade. Because the lines are not parallel and they cross, a clear interaction effect is present. This visually confirms the statistically significant interaction you obtained in the analysis of variance table. Non-parallel lines indicate that the impact of accreditation grade differs depending on management type.

Pattern-wise Interpretation of Each Accreditation Category

- **Not Accredited:** For not accredited institutions, non-minority institutions show a much higher level of academic service orientation than minority institutions. The steep upward slope indicates that management type strongly influences service orientation when accreditation is absent.

- **Grade B:** For grade B institutions, minority institutions have slightly higher service orientation than non-minority ones. The line slopes downward, showing a reversal pattern compared to the not accredited group. This indicates that accreditation alters how management type relates to service orientation.
- **Grade B Plus:** For grade B plus institutions, the pattern again reverses. Non-minority institutions show higher service orientation than minority institutions. The steep upward slope indicates a strong management-based difference.
- **Grade B Plus Plus and Above:** For the highest accredited institutions, minority institutions show slightly higher service orientation than non-minority ones. The line slopes gently downward, suggesting that at very high quality levels, management differences reduce or reverse.

6.16 Interaction Effects of Institutional Factors on Academic Service Orientation Controlling for the Covariate Autonomous Status using ANCOVA

Table 6.31

Levene's Test of Equality of Error Variances for Academic Service Orientation

F	df1	df2	Significance
7.069	7	556	<0.001**

The significance value is less than .05, indicating that the assumption of homogeneity of variances is violated. This means that the variability in academic service orientation scores differs significantly across the combined groups defined by autonomy status, management type, and accreditation grade.

Because group variances are unequal, the assumption underlying analysis of variance is not strictly satisfied. However, since the sample size is large, the analysis remains reasonably robust. Therefore, results can still be interpreted, but emphasis should be placed on effect sizes and interaction patterns rather than relying solely on significance values.

Table 6.32

Interaction Effect of Type of Management and NAAC Grade on Academic Service Orientation (Controlling for Autonomous Status)

Source	Sum of Squares	df	Mean Square	F	Significance	Partial Eta Squared
Type of Management × NAAC Grade	15.550	3	5.183	5.972	<0.001**	.031

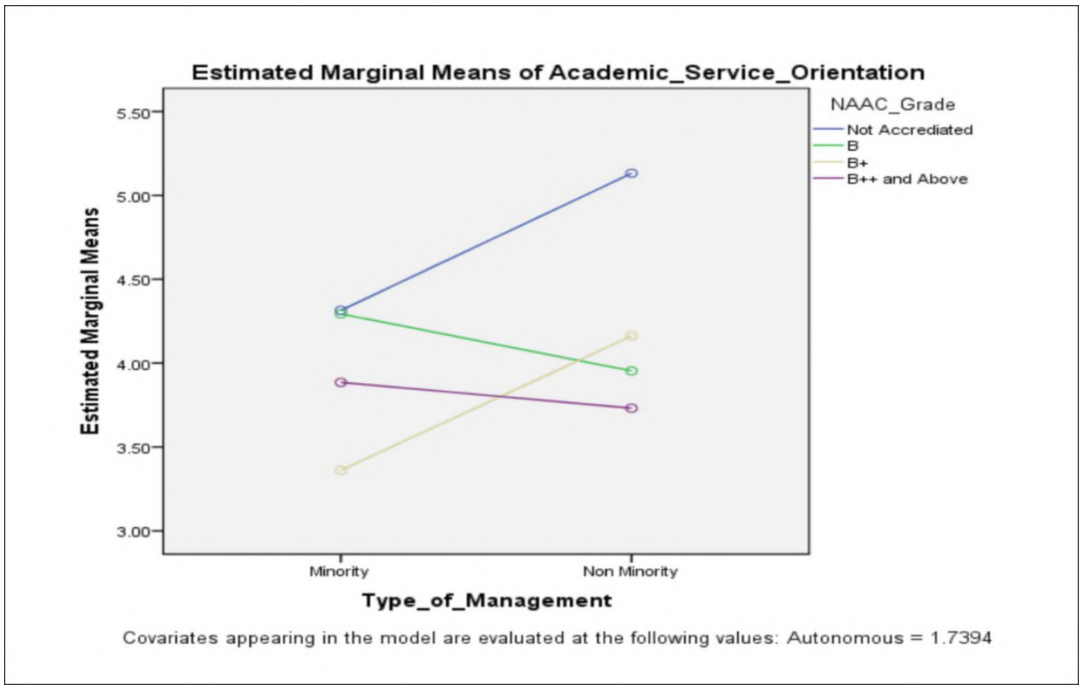
The interaction effect between type of management and accreditation grade remains statistically significant even after controlling for autonomous status. This indicates that the influence of accreditation grade on academic service orientation differs depending on management category, independent of whether an institution is autonomous or not. The effect size indicates a small but meaningful interaction, showing that the combined influence of governance type and accreditation level explains a measurable proportion of variation in academic service orientation.

Management structure functions as a conditional factor that modifies how accreditation grade affects academic service orientation. The persistence of significance after controlling for autonomy confirms that this interaction is robust and not due to institutional autonomy differences. This demonstrates that institutional excellence is shaped by the joint influence of structural and quality-related factors rather than by single variables acting independently.

The result has strong implications for higher education policy and institutional strategy. Accreditation improvements may produce different levels of impact across management categories, regardless of autonomy status. Therefore, quality enhancement policies should be tailored according to institutional governance structure rather than applied uniformly. Institutional leaders should align accreditation efforts with their management framework to maximise academic service outcomes. For regulators, differentiated accreditation support mechanisms may be more effective than standardised interventions.

Figure 6.5

Correspondence Analysis Map



6.17 Interaction Effect of Type of Management and Autonomous Status on Pedagogical Innovation using Two-Way ANOVA

Table 6.33

Levene's Test of Equality of Error Variances for Pedagogical Innovation

F	df1	df2	Significance
10.695	3	560	<0.001**

The significance value is below .05, indicating that the assumption of equal variances across groups is violated. This means the variability of pedagogical innovation differs significantly among institutional categories defined by management type and autonomy status.

Because variance homogeneity is not satisfied, results should be interpreted cautiously and emphasis should be placed on effect sizes and patterns rather than relying solely on significance levels. However, given the large sample size, the analysis remains statistically robust.

Table 6.34

Interaction Effect of Type of Management and Autonomous Status on Pedagogical Innovation

Source	Sum of Squares	df	Mean Square	F	Significance	Partial Eta Squared
Type of Management × Autonomous Status	0.085	1	0.085	0.075	0.784^{NS}	0.000

The interaction effect is not statistically significant because the significance value is greater than .05. This indicates that the influence of autonomous status on pedagogical innovation does not differ across management types. The effect size is essentially zero, confirming that the combined influence of these two institutional factors is negligible.

Autonomy does not condition or modify the relationship between management type and pedagogical innovation. In other words, whether an institution is minority or non-minority does not change how autonomy relates to innovation outcomes.

Since no interaction exists, policy efforts aimed at improving pedagogical innovation should not depend on combinations of institutional category and autonomy. Instead, improvement initiatives should focus on internal institutional dynamics such as teaching culture, faculty development, leadership support, and innovation incentives, which are more likely to produce meaningful improvements.

6.18 Interaction Effect of Type of Management and NAAC Grade on Pedagogical Innovation using Two Way ANOVA

Table 6.35

Levene's Test of Equality of Error Variances for Pedagogical Innovation

F	df1	df2	Significance
5.191	7	556	<0.001**

The significance value is below .05, indicating that the assumption of equal variances across groups is violated. This means the variability of pedagogical innovation differs significantly across institutional categories defined by management type and accreditation grade.

Because homogeneity of variance is not satisfied, results should be interpreted cautiously and supported with effect size evidence. However, the large sample size ensures that the analysis of variance remains statistically reliable.

The unequal variance pattern suggests that pedagogical innovation is more stable in some institutional groups and more variable in others. This indicates that innovation practices are not uniformly distributed across institutional categories, highlighting the need for context-sensitive institutional development strategies.

Table 6.36

Interaction Effect of Type of Management and NAAC Grade on Pedagogical Innovation

Source	Sum of Squares	df	Mean Square	F	Significance	Partial Eta Squared
Type of Management × NAAC Grade	4.275	3	1.425	1.328	0.264^{NS}	.007

The interaction effect between management type and accreditation grade is not statistically significant because the significance value is greater than .05. This indicates that the influence of accreditation grade on pedagogical innovation does not differ across management categories. The effect size is very small, confirming that their combined influence explains only a negligible proportion of variation in pedagogical innovation.

Management type does not function as a conditioning factor in the relationship between accreditation grade and pedagogical innovation. This means accreditation level affects institutions similarly regardless of whether they are minority or non-minority.

Since no interaction effect exists, policy initiatives aimed at improving pedagogical innovation should not rely on combinations of institutional type and accreditation grade. Instead, improvement strategies should focus on internal institutional factors such as teaching culture, faculty development programmes, leadership support, and innovation incentives, which are more likely to drive meaningful innovation outcomes.

6.19 Interaction Effect of Type of Management and NAAC Grade on Pedagogical Innovation Controlling for Autonomous Status as a co-variate using ANCOVA

Table 6.37

Levene's Test of Equality of Error Variances for Pedagogical Innovation

F	df1	df2	Significance
4.993	7	556	<0.001**

The significance value is less than .05, indicating that the assumption of equal variances across institutional groups is violated. This means that variability in pedagogical innovation differs significantly across combinations of autonomy status, management type, and accreditation grade.

Since homogeneity of variance is not satisfied, interpretation should emphasise effect sizes and overall patterns rather than relying solely on statistical significance. Nevertheless, because the sample size is large, the analysis of variance results remain sufficiently robust for interpretation.

Table 6.38

Interaction Effect of Type of Management and NAAC Grade on Pedagogical Innovation Controlling for Autonomous Status

Source	Sum of Squares	df	Mean Square	F	Significance	Partial Eta Squared
Type of Management × NAAC Grade	4.724	3	1.575	1.471	0.221^{NS}	.008

The interaction effect between management type and accreditation grade is not statistically significant after controlling for autonomous status. This indicates that the relationship between accreditation grade and pedagogical innovation does not differ across management categories when autonomy is accounted for. The effect size is very small, showing that their combined influence explains only a negligible proportion of variation.

Management type does not act as a moderating or conditioning factor in the relationship between accreditation level and pedagogical innovation once autonomy

is controlled. This confirms that the joint effect of governance structure and accreditation level is weak and practically insignificant.

Because the interaction is non-significant, improvement strategies aimed at enhancing pedagogical innovation should not depend on combinations of management category and accreditation level. Instead, policymakers and institutional leaders should focus on internal drivers such as faculty development systems, leadership support, teaching culture, and innovation incentives, which are more likely to produce meaningful improvements.

6.20 Joint Influence of type management on institutional excellence using MANOVA

Table 6.39

Box's Test of Equality of Covariance Matrices

Statistic	Value
Box's M	22.301
F	7.390
df1	3
df2	913795.662
Significance	<0.001**

The significance value is below .05, indicating that the assumption of equality of covariance matrices is violated. This means the covariance structure of the dependent variables differs across management type groups.

Because covariance matrices are unequal, the strict multivariate analysis assumption is not met. However, with large sample sizes, multivariate tests such as Pillai's Trace remain robust and can still be interpreted reliably.

Table 6.40

Multivariate Test Results for Effect of Type of Management

Multivariate Test	Value	F	Hypothesis df	Error df	Significance	Partial Eta Squared
Pillai's Trace	.000	.105	2	561	0.900^{NS}	.000
Wilks' Lambda	1.000	.105	2	561	0.900^{NS}	.000
Hotelling's Trace	.000	.105	2	561	0.900^{NS}	.000
Roy's Largest Root	.000	.105	2	561	0.900^{NS}	.000

All multivariate test statistics show non-significant results because the significance values are much greater than 0.05. This indicates that type of management does not have a statistically significant multivariate effect on the combined dependent variables academic service orientation and pedagogical innovation.

Management category does not produce a joint influence on institutional excellence dimensions. The effect size is essentially zero, confirming that management type contributes negligibly to explaining variation across these outcomes.

Institutional classification based solely on management category is not a meaningful determinant of institutional excellence. Improvement initiatives should therefore focus on internal organisational factors such as academic culture, leadership practices, and faculty engagement rather than administrative category.

Table 6.41

Levene's Test of Equality of Error Variances for Dependent Variables

Dependent Variable	F	df1	df2	Significance
Academic Service Orientation	12.457	1	562	<0.001**
Pedagogical Innovation	18.595	1	562	<0.001**

For both dependent variables, the significance values are below .05, indicating that the assumption of equal variances is violated. This means variability differs across management type groups for both academic service orientation and pedagogical innovation.

Although homogeneity of variance is not satisfied, the large sample size allows the analysis to remain robust. Interpretation should focus on patterns and effect sizes rather than relying solely on significance values.

6.21 Joint Influence of NAAC Grade on institutional excellence using MANOVA

Table 6.42

Box's Test of Equality of Covariance Matrices

Statistic	Value
Box's M	45.989
F	5.074
df1	9
df2	1472989.841
Significance	<0.001**

The significance value is less than .05, indicating that the assumption of equal covariance matrices is violated. This means the covariance relationships between academic service orientation and pedagogical innovation differ across accreditation grade categories.

Although this assumption is violated, multivariate tests such as Pillai's Trace remain robust, particularly with large sample sizes. Therefore, multivariate results can still be interpreted reliably.

The unequal covariance pattern indicates that the relationship between institutional excellence dimensions varies depending on accreditation level. This suggests that accreditation status influences not only individual outcomes but also how these outcomes relate to each other.

Table 6.43

Multivariate Test Results for Effect of NAAC Grade

Multivariate Test	Value	F	Hypothesis df	Error df	Significance	Partial Eta Squared
Pillai's Trace	.090	8.822	6	1120	<0.001**	.045
Wilks' Lambda	.911	8.921	6	1118	<0.001**	.046
Hotelling's Trace	.097	9.019	6	1116	<0.001**	.046
Roy's Largest Root	.084	15.748	3	560	<0.001**	.078

All multivariate statistics show significant results, indicating that accreditation grade has a statistically significant multivariate effect on the combined dependent variables academic service orientation and pedagogical innovation. The effect sizes are small to moderate, suggesting that accreditation grade explains a meaningful but not dominant proportion of variation.

Accreditation grade is an important institutional determinant influencing institutional excellence dimensions jointly. This confirms that institutional quality status plays a role in shaping both teaching innovation and academic service orientation simultaneously.

The significant multivariate effect implies that accreditation systems function as quality differentiators across institutions. Policymakers and accreditation bodies can consider accreditation as a strategic lever for improving institutional performance. Institutions aiming to enhance excellence should therefore prioritise quality assurance processes and accreditation improvement initiatives.

Table 6.44

Levene's Test of Equality of Error Variances for Dependent Variables

Dependent Variable	F	df1	df2	Significance
Academic Service Orientation	.817	3	560	0.485^{NS}
Pedagogical Innovation	3.648	3	560	0.013*

For academic service orientation, the significance value is greater than .05, indicating that the assumption of equal variances is satisfied. However, for pedagogical innovation, the significance value is less than .05, indicating unequal variances across accreditation grade groups.

This mixed result shows that variance equality holds for one dependent variable but not for the other. This suggests that accreditation grade influences variability differently across institutional outcomes.

6.22 Joint Influence of Type of Management and NAAC Grade on institutional excellence with autonomous status as co-variate using MANCOVA

Table 6.45

Box's Test of Equality of Covariance Matrices

Statistic	Value
Box's M	81.024
F	5.337
df1	15
df2	269160.731
Significance	<0.001**

The significance value is less than .05, indicating that the assumption of equality of covariance matrices is violated. This means the covariance relationships between academic service orientation and pedagogical innovation differ across institutional groups defined by management type and accreditation grade after accounting for the covariate autonomous status.

Although the assumption is violated, multivariate statistics such as Pillai's Trace remain robust with large sample sizes. Therefore, results can still be interpreted reliably while placing emphasis on effect sizes.

The unequal covariance pattern suggests that the relationships between institutional excellence dimensions vary across institutional categories even after controlling for autonomy. This indicates that institutional structural characteristics influence how performance dimensions interact beyond the effect of autonomy.

Table 6.46

Multivariate Test Results for Institutional Factors Controlling for Autonomous Status

Effect	Multivariate Test	Value	F	Significance	Partial Eta Squared
Autonomous Status (Covariate)	Pillai's Trace	.023	6.553	<0.001**	.023
Type of Management	Pillai's Trace	.004	1.012	0.364^{NS}	.004
NAAC Grade	Pillai's Trace	.025	2.302	0.033*	.012
Type of Management × NAAC Grade	Pillai's Trace	.041	3.831	<0.001**	.020

After controlling for autonomous status as a covariate, autonomy itself shows a significant multivariate effect, indicating that institutional autonomy contributes to variation in the combined outcomes. Type of management alone does not have a significant effect. Accreditation grade shows a significant but small effect, suggesting institutional quality level influences outcomes modestly. Importantly, the interaction between management type and accreditation grade remains significant even after controlling for autonomy, indicating that the effect of accreditation differs across management categories independent of autonomy.

Institutional excellence is shaped by multiple interacting structural and quality factors. Autonomy independently influences outcomes, accreditation grade contributes modestly, and their combined structural interaction further affects institutional performance. Management type alone does not determine outcomes, but it becomes relevant when combined with accreditation level.

These findings show that autonomy functions as an important institutional control factor influencing performance. Policymakers should therefore consider autonomy as a foundational enabling condition. Accreditation reforms should be tailored to different management categories because their effectiveness varies across institutional types even after accounting for autonomy. Institutional leaders should align governance practices with accreditation standards to maximise performance outcomes.

Table 6.47

Levene's Test of Equality of Error Variances for Dependent Variables

Dependent Variable	F	df1	df2	Significance
Academic Service Orientation	7.069	7	556	<0.001**
Pedagogical Innovation	4.993	7	556	<0.001**

For both dependent variables, the significance values are below .05, indicating violation of the homogeneity of variance assumption across institutional groups even after including autonomous status as a covariate.

Variance inequality suggests that institutional variability differs across combinations of management type and accreditation grade beyond the effect of autonomy. However, large sample size ensures that the multivariate analysis remains robust.

The unequal variance pattern implies that some institutional categories demonstrate stable performance levels while others show greater dispersion. This suggests that institutional excellence is unevenly distributed and requires differentiated improvement strategies rather than uniform policy interventions.

Classifying Institutional Excellence Profiles Using Discriminant Analysis of Human Resource and Behavioural Predictors

Table 6.48

Table. Mean (Standard Deviation) across Institutional Excellence Clusters

Variable	Developing Institutional Excellence	High Institutional Excellence	Emerging Institutional Excellence
Supportive Organisational Climate	3.48 (0.96)	4.20 (0.98)	2.95 (1.28)
Organisational Justice Inclusiveness and Equity	2.97 (0.95)	3.83 (1.07)	1.95 (0.89)
Job Autonomy and Empowerment	3.82 (1.01)	4.26 (0.89)	3.16 (1.58)
Democratic and Transformational Leadership	3.82 (1.01)	4.26 (0.89)	3.16 (1.58)
Role Clarity	3.68 (0.92)	4.47 (0.73)	3.37 (1.22)
Recognition and Motivation	3.12 (0.99)	4.04 (0.95)	2.20 (1.00)
Job Satisfaction	3.58 (1.31)	4.24 (0.96)	2.58 (1.32)
Job Commitment	4.12 (0.80)	4.49 (0.64)	3.25 (1.48)
Teamwork and Cooperation	3.85 (0.92)	4.44 (0.70)	2.83 (1.11)
Trust in Management	3.46 (0.96)	4.16 (0.81)	2.25 (1.24)
Altruism	4.00 (0.70)	4.53 (0.62)	3.45 (1.29)
Courtesy	4.17 (0.73)	4.52 (0.58)	3.29 (1.28)
Civic Virtue	4.21 (0.64)	4.52 (0.63)	3.62 (1.44)
Sportsmanship	3.85 (0.95)	4.31 (0.67)	3.41 (1.36)
Conscientiousness	3.43 (0.83)	4.09 (0.82)	3.50 (1.39)

The mean comparison clearly indicates a structured hierarchy across institutional excellence clusters. High excellence institutions consistently report the highest scores across all Sustainable Human Resource Management ecosystem variables and Organisational Citizenship Behaviour dimensions, while emerging institutions show the lowest scores. Developing institutions fall in between, indicating progressive organisational maturity. This consistent directional trend confirms that the predictors effectively differentiate institutional categories and therefore possess strong discriminating potential.

Variables such as Recognition and Motivation, Organisational Justice, Trust in Management, Teamwork, Job Satisfaction, and Civic Virtue show particularly large mean differences between clusters, indicating that they are the strongest distinguishing factors of institutional excellence. Standard deviations are generally lower for high excellence institutions, suggesting stability and uniformity of organisational systems, whereas emerging institutions show higher dispersion, indicating inconsistency in managerial and behavioural practices. Substantively, the findings demonstrate that institutional excellence is closely associated with strong human resource ecosystem quality and embedded citizenship behaviour culture, supporting the suitability of these variables for discriminant classification analysis.

Table 6.49

Tests of Equality of Group Means for Predictor Variables

Variable	Wilks' Lambda	F	df1	df2	Sig.	Criterion Met
Supportive Organisational Climate	.833	56.255	2	561	<0.001**	Yes
Organisational Justice Inclusiveness and Equity	.709	115.206	2	561	<0.001**	Yes
Job Autonomy and Empowerment	.883	37.333	2	561	<0.001**	Yes
Democratic and Transformational Leadership	.883	37.333	2	561	<0.001**	Yes
Role Clarity	.789	75.002	2	561	<0.001**	Yes
Recognition and Motivation	.687	127.685	2	561	<0.001**	Yes
Job Satisfaction	.790	74.547	2	561	<0.001**	Yes
Job Commitment	.801	69.469	2	561	<0.001**	Yes
Teamwork and Cooperation	.691	125.337	2	561	<0.001**	Yes
Trust in Management	.665	141.220	2	561	<0.001**	Yes
Altruism	.798	71.104	2	561	<0.001**	Yes
Courtesy	.769	84.118	2	561	<0.001**	Yes
Civic Virtue	.872	41.010	2	561	<0.001**	Yes
Sportsmanship	.876	39.734	2	561	<0.001**	Yes
Conscientiousness	.901	30.850	2	561	<0.001**	Yes

The Tests of Equality of Group Means table evaluates whether each predictor variable significantly differs across predefined groups before constructing discriminant functions. Its primary purpose is variable screening, ensuring that only predictors with meaningful group differentiation are included in the discriminant model, thereby improving classification accuracy and interpretability (Hair et al., 2019; Tabachnick and Fidell, 2013).

Criteria for Cut-Off Values and Assessment

a) **First criterion:** Significance level. The required threshold is p less than 0.05 for statistical significance (Field, 2018). All variables in the table have significance values equal to .000, which is below .05. Therefore, each predictor significantly discriminates between institutional excellence groups and satisfies this criterion.

b) **Second criterion:** Wilks' Lambda magnitude. Smaller lambda values indicate stronger discriminatory power (Huberty and Olejnik, 2006). A widely accepted interpretation guideline is:

- Lambda less than 0.70 indicates strong discrimination
- Lambda between 0.70 and 0.90 indicates moderate discrimination
- Lambda greater than 0.90 indicates weak discrimination

Applying this rule to the table:

Table 6.50

Classification of Predictors Based on Discriminating Strength (Using Wilks' Lambda Criterion)

Discriminatory Strength Category	Variable	Wilks' Lambda	Interpretation
Strong Discriminators	Trust in Management	0.665	Very strong group separation
	Recognition and Motivation	0.687	Strong discriminatory power
	Teamwork and Cooperation	0.691	Strong predictor
	Organisational Justice Inclusiveness and Equity	0.709	Borderline strong discriminator
Moderate Discriminators	Courtesy	0.769	Moderate separation
	Role Clarity	0.789	Moderate predictor
	Job Satisfaction	0.790	Moderate predictor
	Altruism	0.798	Moderate discriminator
	Job Commitment	0.801	Moderate separation
	Supportive Organisational Climate	0.833	Acceptable discrimination
Relatively Weaker but Acceptable	Civic Virtue	0.872	Weak but usable
	Sportsmanship	0.876	Weak but acceptable
	Job Autonomy and Empowerment	0.883	Limited discrimination
	Democratic and Transformational Leadership	0.883	Limited discrimination
	Conscientiousness	0.901	Weakest but still valid

The classification shows that the strongest predictors of institutional excellence clusters are Trust in Management, Recognition and Motivation, Teamwork, and Organisational Justice, as these variables possess the lowest Wilks' Lambda values and therefore the highest discriminating power. These constructs contribute most substantially to distinguishing institutional categories and are likely to load strongly in the discriminant function. Moderately discriminating variables such as Role Clarity, Job Satisfaction, Commitment, Courtesy, and Altruism still meaningfully differentiate groups and provide supporting classification strength. The relatively weaker predictors, including Conscientiousness and Leadership-related variables, show higher lambda values, indicating smaller mean differences across clusters; however, they remain statistically acceptable because none exceed the commonly accepted exclusion threshold of .95 (Hair et al., 2019). This overall pattern confirms that the predictor set is well balanced, containing both dominant and supporting discriminators, which enhances the stability and interpretability of the discriminant model.

Third criterion: F statistic. Larger F values indicate stronger mean differences across groups (Stevens, 2012). Variables such as Trust in Management (F=141.220), Recognition and Motivation (F=127.685), and Teamwork (F=125.337) exhibit the strongest discrimination, indicating substantial between-group variability relative to within-group variability.

Overall Evaluation of Criteria Attainment

All predictors meet statistical requirements for inclusion in discriminant analysis because every variable shows significant group differences. This confirms that the selected Sustainable Human Resource Management ecosystem factors and Organisational Citizenship Behaviour dimensions possess adequate discriminating capability and that the dataset satisfies a key assumption of discriminant analysis, namely the presence of statistically distinct group centroids (Tabachnick & Fidell, 2013).

Remedies if Criteria Were Not Satisfied

If any predictor failed these thresholds, recommended corrective steps would include removing non-significant variables, combining highly correlated predictors through factor analysis, standardising variables to reduce scale bias, checking multicollinearity diagnostics, increasing sample size, or transforming skewed distributions to improve group separation (Field, 2018; Hair et al., 2019). Since all variables here satisfy required criteria, no remedial action is necessary.

Table 6.51

Log Determinants of Group Covariance Matrices

Group	Rank	Log Determinant
Developing Institutional Excellence	14	-10.365
High Institutional Excellence	14	-12.598
Emerging Institutional Excellence	14	-12.221
Pooled Within Groups	14	-8.782

Table 6.52

Box's M Test of Equality of Covariance Matrices

Test Statistic	Value
Box's M	1841.547
F (Approx.)	8.266
df1	210
df2	136159.529
Sig.	<0.001**

These tables evaluate whether the assumption of equality of covariance matrices is satisfied, which is a key prerequisite for linear discriminant analysis. Discriminant analysis assumes that predictor variables have similar variance–covariance structures across groups. The Log Determinant table assesses whether group covariance matrices differ substantially, while Box's M test statistically

verifies whether these differences are significant (Hair et al., 2019; Tabachnick and Fidell, 2013).

The Box's M test is statistically significant with Sig. = .000, which is below the recommended conservative threshold of 0.001 for large samples. This indicates that the null hypothesis of equal covariance matrices is rejected, meaning the assumption of homogeneity is violated. Supporting this conclusion, the log determinant values differ across groups, especially between Developing (-10.365) and High (-12.598) institutional excellence clusters, indicating variation in covariance structures. However, the rank values are equal across groups and match the number of predictors, confirming that matrices are not singular and that multicollinearity is not causing estimation failure.

Although the covariance equality assumption is violated, discriminant analysis can still proceed because it is robust to moderate violations when sample sizes are large and group sizes are reasonably balanced (Stevens, 2012). Since the sample size here is large and all groups have valid covariance matrices, the analysis remains interpretable. Nevertheless, to improve robustness, researchers may use quadratic discriminant analysis instead of linear discriminant analysis, apply variable transformations, remove highly correlated predictors, or verify classification accuracy using cross-validation techniques. These corrective approaches ensure stable classification even when covariance homogeneity is not satisfied.

Table 6.53

Eigenvalues and Canonical Correlations of Discriminant Functions

Function	Eigenvalue	Percentage of Variance	Cumulative Percentage	Canonical Correlation	Criterion Met
1	1.154	89.9	89.9	.732	Yes
2	0.130	10.1	100.0	.339	Yes

Table 6.54

Decision Criteria for Interpreting Eigenvalues and Canonical Correlations in Discriminant Analysis

Criterion	Statistical Indicator	Cut-off Value	Interpretation Rule	Status in Present Analysis	Evidence from Results	Remedy if Not Satisfied
Discriminating power	Eigenvalue	Greater than 0.40 strong, 0.10–0.40 moderate, less than 0.10 weak	Larger eigenvalue indicates stronger discrimination	Satisfied	Function 1 = 1.154 strong, Function 2 = 0.130 moderate	Remove weak predictors or increase sample
Variance explained	Percentage of variance	First function should explain majority	First function should dominate discrimination	Satisfied	Function 1 explains 89.9%	Re-specify model if variance spread evenly
Canonical relationship	Canonical correlation	Greater than 0.30 acceptable, greater than 0.50 strong	Higher value indicates stronger relation between predictors and group membership	Satisfied	Function 1 = .732 strong, Function 2 = .339 acceptable	Improve predictors or remove weak ones
Model sufficiency	Number of functions	First function should carry major interpretation	Interpretation mainly based on first function	Satisfied	Function 1 dominates	Collapse functions or reduce variables
Practical usefulness	Cumulative variance	Should approach 100%	Ensures all discrimination captured	Satisfied	Total = 100%	Add predictors if low

These tables evaluate the strength and effectiveness of discriminant functions generated by the model. The Eigenvalue table measures how much discriminatory ability each function contributes, while canonical correlation assesses the strength of association between predictor variables and group classification. Together, they indicate whether the discriminant functions meaningfully separate groups and whether interpretation should focus on one or multiple functions (Hair et al., 2019; Tabachnick & Fidell, 2013).

The first discriminant function is highly powerful, with an eigenvalue of 1.154 and explaining 89.9% of total variance, indicating that it carries almost all discriminatory information. Its canonical correlation of .732 indicates a strong relationship between predictor variables and institutional excellence group membership. The second function has a much smaller eigenvalue (.130) and explains only 10.1% of variance, indicating relatively limited but still acceptable discriminating contribution. Its canonical correlation (.339) suggests moderate association strength. Since the first function dominates both variance and correlation, interpretation should primarily focus on Function 1 when explaining group separation.

All statistical criteria are satisfied in this analysis. The first discriminant function is strong and meaningful, while the second function provides supplementary discrimination. Because no eigenvalue falls below .10 and canonical correlations exceed minimum acceptable thresholds, the discriminant model demonstrates adequate classification strength. If the results had shown weak eigenvalues or very low canonical correlations, recommended remedies would include removing weak predictors, combining correlated variables, increasing sample size, or re-specifying the theoretical model. However, none of these corrective actions are necessary here, as the discriminant structure is statistically sound.

Table 6.55

Wilks' Lambda Test of Discriminant Functions

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.	Criterion Met
1 through 2	.411	493.283	28	<0.001**	Yes (Lower lambda is good)
2	.885	67.736	13	<0.001**	Yes

Table 6.56

Decision Criteria for Interpreting Wilks' Lambda in Discriminant Analysis

Criterion	Statistical Indicator	Cut-off Value	Interpretation Rule	Status in Present Analysis	Evidence from Results	Remedy if Not Satisfied
Overall model significance	Sig. value	Less than 0.05	Significant value indicates discriminant functions differentiate groups	Satisfied	Both tests Sig. = .000	Increase predictors or sample size
Discriminatory strength	Wilks' Lambda	Closer to 0 stronger; closer to 1 weaker	Lower lambda indicates stronger group separation	Satisfied	Function set = .411	Improve predictors if lambda greater than .90
Function contribution	Sequential test	Later functions should also be significant	Tests whether each function adds unique discrimination	Satisfied	Function 2 Sig. = .000	Remove redundant predictors
Model effectiveness	Chi-square	Must be significant	Significant chi-square confirms model validity	Satisfied	χ^2 = 493.283 and 67.736	Re-specify model if non-significant
Practical usefulness	Lambda magnitude	Less than .70 preferred	Indicates strong discriminating ability	Partially satisfied	.411 strong, .885 weak	Focus interpretation on stronger functions

These tables evaluate the statistical significance and effectiveness of discriminant functions generated by the analysis. Wilks' Lambda tests whether the discriminant functions collectively and individually differentiate groups. It determines whether the predictor variables, taken together, significantly classify observations into predefined categories (Hair et al., 2019; Tabachnick & Fidell, 2013).

The combined test for Functions 1 through 2 is highly significant with Wilks' Lambda = .411 and p = .000, indicating that the discriminant model as a whole effectively distinguishes between institutional excellence groups. The relatively low lambda value suggests strong discriminatory ability because a larger proportion of total variance is explained by group differences rather than within-group variation. The sequential test for Function 2 is also significant with p = .000, meaning the second function contributes additional discriminatory power beyond the first function. However, its lambda value of .885 is comparatively high, indicating that although statistically significant, it has weaker discriminating strength than the first function.

All statistical criteria are satisfied because both discriminant functions are significant and the overall model demonstrates strong discriminatory ability. The first function is the dominant contributor to classification, while the second function provides supplementary separation. Since both functions are significant, both can be retained for interpretation. If any function had been non-significant, recommended remedies would include removing weak predictors, reducing dimensionality through factor analysis, or increasing sample size. None of these corrective actions are required here because the discriminant model is statistically valid and substantively meaningful.

Table 6.57

Standardized Canonical Discriminant Function Coefficients

Variable	Function 1	Function 2	Strong Loading
Supportive Organisational Climate	0.039	0.098	None
Organisational Justice Inclusiveness and Equity	0.334	0.031	Function 1
Job Autonomy and Empowerment	0.018	-0.265	Function 2 (moderate)
Role Clarity	0.029	0.767	Function 2
Recognition and Motivation	0.244	0.194	Function 1
Job Satisfaction	0.016	-0.072	None
Job Commitment	-0.218	-0.411	Function 2
Teamwork and Cooperation	0.355	-0.225	Function 1
Trust in Management	0.516	-0.177	Function 1
Altruism	0.172	0.237	Function 2 (moderate)
Courtesy	0.435	-0.398	Function 1
Civic Virtue	-0.158	-0.237	Function 2 (weak)
Sportsmanship	-0.147	0.170	Function 2 (weak)
Conscientiousness	-0.188	0.641	Function 2

Table 6.58

Decision Criteria for Interpreting Standardized Discriminant Coefficients

Criterion	Indicator	Cut-off Value	Interpretation Rule	Status in Present Analysis	Evidence	Remedy if Not Satisfied
Predictor contribution	Absolute coefficient	Greater than .30 strong	Higher absolute value indicates stronger contribution	Satisfied	Several variables greater than .30	Remove weak predictors
Function interpretation	Highest loading per variable	Largest absolute coefficient	Determines function membership	Satisfied	Variables clearly load on specific functions	Rotate or reduce predictors
Meaningful variable	Minimum importance	Greater than .10 acceptable	Values less than .10 negligible	Partially satisfied	Some variables less than .10	Consider removing weak predictors
Function stability	Distribution of loadings	Multiple strong predictors per function	Ensures stable interpretation	Satisfied	Both functions have multiple strong variables	Increase sample or merge variables
Multivariate usefulness	Overall pattern	At least one strong predictor per function	Each function must have defining variables	Satisfied	Function 1 and 2 both have strong predictors	Drop non-informative function

These tables evaluate the relative contribution of each predictor variable to each discriminant function. Standardized coefficients function similarly to beta weights in regression and indicate which variables most strongly define each discriminant dimension. They are used to interpret what each discriminant function represents conceptually and statistically (Hair et al., 2019; Tabachnick & Fidell, 2013).

Function 1 is primarily defined by Trust in Management (.516), Courtesy (.435), Teamwork (.355), and Organisational Justice (.334). These variables have the largest coefficients and therefore contribute most strongly to separating institutional excellence groups. This suggests that Function 1 represents a managerial trust–collaboration dimension of institutional excellence. Function 2 is mainly defined by Role Clarity (.767) and Conscientiousness (.641), with additional contribution from Job Commitment (-.411). This indicates that Function 2 represents a structural discipline and role system dimension. Variables such as Supportive Climate, Job Satisfaction, and Autonomy show very small coefficients and therefore contribute minimally to group discrimination.

All statistical criteria are satisfied because both discriminant functions contain strong defining predictors and meaningful loading patterns. Function 1 is the dominant discriminant dimension because it contains more strong predictors and aligns with earlier eigenvalue results. Function 2 is secondary but still interpretable. If the analysis had shown no strong loadings for a function, recommended remedies would include removing weak predictors, conducting factor reduction, or re-specifying theoretical constructs. Since both functions show clear defining variables, the discriminant structure is statistically stable and substantively interpretable.

Table 6.59

Structure Matrix of Discriminant Functions

Variable	Function 1	Function 2	Highest Loading Function	Strength Category
Trust in Management	0.660	-0.024	Function 1	Strong
Teamwork and Cooperation	0.622	-0.018	Function 1	Strong
Recognition and Motivation	0.622	0.263	Function 1	Strong
Organisational Justice Inclusiveness and Equity	0.594	0.168	Function 1	Strong
Courtesy	0.507	-0.168	Function 1	Strong
Job Satisfaction	0.480	0.034	Function 1	Moderate
Altruism	0.464	0.191	Function 1	Moderate
Job Commitment	0.461	-0.126	Function 1	Moderate
Supportive Organisational Climate	0.407	0.267	Function 1	Moderate
Civic Virtue	0.355	-0.051	Function 1	Moderate
Sportsmanship	0.346	0.161	Function 1	Moderate
Job Autonomy and Empowerment	0.339	0.027	Function 1	Moderate
Democratic and Transformational Leadership	0.339	0.027	Function 1	Moderate
Conscientiousness	0.253	0.525	Function 2	Strong
Role Clarity	0.452	0.494	Function 2	Strong

Table 6.60

Interpretation Criteria for Structure Matrix Loadings

Loading Magnitude	Cut-off Value	Interpretation	Source
Strong loading	≥ .50	Variable strongly defines function	Hair et al. (2019)
Moderate loading	.30 – .49	Variable contributes meaningfully	Tabachnick and Fidell (2013)
Weak loading	< .30	Minimal contribution	Stevens (2012)
Function interpretability	At least 2 strong loadings	Function can be meaningfully interpreted	Hair et al. (2019)
Dominant function	Highest absolute loading	Variable belongs to that function	Huberty and Olejnik (2006)

The structure matrix shows pooled within-group correlations between predictor variables and discriminant functions. Unlike standardized coefficients, structure loadings reveal the true relationship between variables and functions because they are not affected by multicollinearity.

Therefore, researchers rely on structure matrix values as the primary basis for naming and interpreting discriminant functions (Hair et al., 2019; Tabachnick & Fidell, 2013).

Interpretation Based on Cut-off Criteria

Using the recommended threshold of 0.50 for strong loadings (Hair et al., 2019), Function 1 is strongly defined by Trust in Management (.660), Teamwork (.622), Recognition (.622), Organisational Justice (.594), and Courtesy (.507). This indicates that Function 1 represents a relational governance and collaborative climate dimension. Several moderate loadings such as Job Satisfaction (.480), Commitment (.461), and Supportive Climate (.407) further reinforce this interpretation. Function 2 is strongly defined by Conscientiousness (.525) and Role Clarity (.494 borderline strong). This indicates that Function 2 represents a structural discipline and responsibility dimension.

Since both functions contain at least two substantial loadings, they satisfy interpretability criteria (Hair et al., 2019). Function 1 contains the largest number of strong loadings and therefore is the dominant discriminant dimension, while Function 2 serves as a secondary differentiating axis.

Assessment of Criteria Satisfaction

All interpretation criteria are satisfied. Multiple predictors exceed the .50 strong-loading threshold, many exceed the .30 meaningful contribution threshold, and both functions contain defining variables. Therefore, the discriminant solution is statistically interpretable and theoretically meaningful.

Key Finding Summary

Function 1 is the primary discriminant dimension representing organisational trust, collaboration, and fairness climate. Function 2 is a secondary dimension representing role structure and behavioural discipline. Together, they provide a clear

multidimensional explanation of how Sustainable Human Resource Management ecosystem factors and Organisational Citizenship Behaviour distinguish institutional excellence groups.

Table 6.61

Canonical Discriminant Function Coefficients

Variable	Function 1 Coefficient	Function 2 Coefficient	Dominant Function	Contribution Strength
Supportive Organisational Climate	0.038	0.095	Function 2	Weak
Organisational Justice Inclusiveness and Equity	0.326	0.031	Function 1	Moderate
Job Autonomy and Empowerment	0.018	-0.257	Function 2	Moderate
Role Clarity	0.034	0.896	Function 2	Strong
Recognition and Motivation	0.252	0.200	Function 1	Moderate
Job Satisfaction	0.015	-0.066	Function 2	Weak
Job Commitment	-0.262	-0.494	Function 2	Strong
Teamwork and Cooperation	0.435	-0.275	Function 1	Strong
Trust in Management	0.566	-0.194	Function 1	Strong
Altruism	0.226	0.311	Function 2	Moderate
Courtesy	0.585	-0.535	Function 1	Strong
Civic Virtue	-0.201	-0.302	Function 2	Moderate
Sportsmanship	-0.171	0.198	Function 2	Moderate
Conscientiousness	-0.205	0.699	Function 2	Strong
Constant	-6.346	-0.926	—	—

Table 6.62

Criteria for Interpreting Canonical Discriminant Coefficients

Criterion	Cut-off Value	Interpretation Rule	Source	Status in Present Results
Strong contributor	Absolute value ≥ 0.50	Major determinant of function	Hair et al. (2019)	Several variables meet
Moderate contributor	0.30 – 0.49	Meaningful contributor	Tabachnick and Fidell (2013)	Many meet
Weak contributor	< 0.30	Minimal effect	Stevens (2012)	Few variables
Function validity	At least one strong coefficient	Function interpretable	Hair et al. (2019)	Both functions valid
Dominant function	Function with most strong predictors	Main discriminant dimension	Huberty and Olejnik (2006)	Function 1 dominant

This table shows the unstandardized discriminant function coefficients used to construct the discriminant equations for predicting group membership. These coefficients indicate how each predictor variable contributes mathematically to the classification formula that assigns cases to institutional excellence groups. Unlike standardized coefficients, these values are used directly to compute discriminant scores for classification (Hair et al., 2019; Tabachnick & Fidell, 2013).

Function 1 is mainly defined by Courtesy (.585), Trust in Management (.566), Teamwork (.435), and Organisational Justice (.326), indicating that it represents a relational organisational climate dimension. Function 2 is dominated by Role Clarity (.896), Conscientiousness (.699), and Job Commitment (-.494), indicating that it represents a structural discipline and accountability dimension. Because both functions contain strong coefficients exceeding .50, they meet interpretability criteria (Hair et al., 2019). Function 1 contains more strong predictors and therefore acts as the primary discriminant dimension, while Function 2 acts as a secondary differentiating axis. All interpretation criteria are satisfied. Multiple variables exceed the .50 strong-contribution threshold, several exceed the .30 meaningful threshold, and both functions have defining predictors. Therefore, the discriminant model is statistically stable and suitable for classification.

Function 1 represents a Relational Institutional Excellence dimension driven by trust, teamwork, fairness, and interpersonal behaviour. Function 2 represents a Structural Professional Discipline dimension driven by role clarity, conscientiousness, and commitment. Together they show that institutional excellence depends both on relational climate quality and structural operational discipline.

Table 6.63

Functions at Group Centroids

Institutional Excellence Cluster	Function 1	Function 2	Position Interpretation	Classification Strength
Developing Institutional Excellence	-0.527	***-0.657***	Moderately negative on both dimensions	Intermediate
High Institutional Excellence	***0.664***	0.137	Positive on Function 1 and slightly positive on Function 2	Strongest profile
Emerging Institutional Excellence	-2.502	***0.422***	Extremely low on Function 1 but positive on Function 2	Distinct but weak excellence

Table 6.64

Criteria for Interpreting Group Centroids

Criterion	Indicator	Interpretation Rule	Cut-off Logic	Status in Present Results	Evidence	Remedy if Not Satisfied
Group separation	Distance between centroid scores	Larger distance indicates stronger separation	No strict cut-off; relative distance used	Satisfied	Emerging = -2.502 vs High = .664	Add stronger predictors
Function usefulness	Spread across groups	Groups should differ on function values	Clear directional variation required	Satisfied	Function 1 clearly separates all groups	Remove weak variables
Dominant function	Function showing widest range	Largest centroid spread defines main dimension	Highest range considered dominant	Satisfied	Function 1 range ≈ 3.17	Focus interpretation on main function
Distinct classification	Unique centroid location	Each group should occupy different coordinate region	Overlap indicates weak discrimination	Satisfied	All groups have unique coordinates	Increase sample or variables
Interpretability	Pattern consistency	Direction should align with theory	Logical ordering expected	Satisfied	High group highest on Function 1	Re-specify constructs

The group centroid table shows the average discriminant score for each group on each function. It indicates where each institutional excellence category is positioned along the discriminant dimensions and is used to understand how groups differ conceptually and practically. Centroids represent the "center point" of each group in discriminant space and are the basis for classification of new cases (Hair et al., 2019; Tabachnick & Fidell, 2013).

Function 1 clearly acts as the primary discriminating dimension because it shows the widest spread between groups. The Emerging cluster has a very low score (-2.502), Developing is moderately low (-0.527), and High institutions are positive (.664). This ordered progression indicates that Function 1 represents the main continuum of institutional excellence. Function 2 shows smaller differences across groups, indicating it is a secondary dimension that refins classification rather than drives it.

Substantive Meaning of Functions

Function 1 represents the Institutional Relational Strength Dimension. Institutions scoring high on this dimension demonstrate strong trust, teamwork, fairness, recognition, and collaborative climate. High excellence institutions score highest on this dimension, confirming that relational organisational quality is the strongest determinant of institutional excellence.

Function 2 represents the Structural Discipline Dimension. This dimension differentiates institutions based on role clarity, responsibility, and behavioural discipline. Emerging institutions scoring positive on Function 2 but very low on Function 1 suggests that structural discipline alone does not produce excellence without relational organisational strength.

All interpretation criteria are satisfied. The centroid positions show clear separation among institutional excellence groups, confirming that the discriminant functions effectively differentiate categories. Function 1 is the dominant classification axis, while Function 2 provides additional refinement. Because all groups occupy distinct positions and distances between centroids are substantial, the

discriminant model demonstrates strong classification capability and conceptual clarity.

Table 6.65

Classification Function Coefficients for Institutional Excellence Groups

Predictor Variable	Developing Institutional Excellence	High Institutional Excellence	Emerging Institutional Excellence	Highest Coefficient Group	Discriminating Strength
Supportive Organisational Climate	1.066	1.187	1.093	High	Moderate
Organisational Justice Inclusiveness and Equity	0.739	1.151	.129	High	Strong
Job Autonomy and Empowerment	0.578	0.395	0.266	Developing	Moderate
Role Clarity	0.454	1.205	1.354	Emerging	Strong
Recognition and Motivation	0.468	0.927	0.187	High	Strong
Job Satisfaction	-0.252	-0.287	-0.353	Developing	Weak
Job Commitment	0.084	-0.619	0.069	Developing	Moderate
Teamwork and Cooperation	1.723	2.022	0.566	High	Strong
Trust in Management	1.965	2.485	0.638	High	Strong
Altruism	1.354	1.871	1.244	High	Strong
Courtesy	4.086	4.357	2.353	High	Very Strong
Civic Virtue	1.512	1.032	1.584	Emerging	Moderate
Sportsmanship	-0.551	-0.597	0.001	Emerging	Weak
Conscientiousness	0.121	0.432	1.282	Emerging	Strong
Constant	-26.741	-34.906	-18.069	—	—

Table 6.66

Interpretation Criteria for Classification Function Coefficients

Criterion	Indicator	Cut-off Guideline	Interpretation Rule	Source	Status in Present Results
Predictor importance	Absolute coefficient	≥ 1 strong influence	Larger coefficient = stronger classification contribution	Hair et al. (2019)	Many predictors ≥ 1
Moderate predictor	.50 – .99	Meaningful contribution	Supports classification	Tabachnick and Fidell (2013)	Several variables
Weak predictor	< .50	Minimal effect	Little classification impact	Stevens (2012)	Few variables
Group discrimination	Highest coefficient per row	Largest value identifies group association	Variable most related to that group	Huberty and Olejnik (2006)	Clearly identifiable
Model usability	Overall pattern	Multiple strong predictors	Ensures reliable classification	Hair et al. (2019)	Satisfied

This table presents Fisher's linear classification functions used to assign cases to institutional excellence groups. Each column represents a prediction equation for one group. When classifying a case, its values are substituted into each equation, and the group with the highest resulting score is the predicted category. Thus, this table shows how each variable contributes to predicting membership in Developing, High, or Emerging institutional excellence clusters (Hair et al., 2019; Tabachnick & Fidell, 2013).

Variables with coefficients greater than 1 exert strong influence on classification. In this analysis, Trust in Management, Teamwork, Courtesy, Role Clarity, and Altruism are the strongest predictors, indicating that they play major roles in distinguishing institutional categories. Courtesy has the largest coefficients across all groups, especially for High Excellence institutions (4.357), indicating that professional respect behaviour is the most powerful classifier of institutional

excellence level. Moderate predictors such as Recognition and Supportive Climate still contribute meaningfully, while variables such as Job Satisfaction and Sportsmanship show weak classification influence because their coefficients are small or negative.

High Institutional Excellence is primarily predicted by strong trust, teamwork, recognition, courtesy, and justice. Emerging Institutional Excellence is strongly associated with role clarity and conscientiousness but weaker relational climate factors. Developing institutions fall between these two patterns, showing moderate autonomy, civic virtue, and supportive climate characteristics. This indicates that institutional excellence classification depends on a combination of relational culture variables and structural discipline variables rather than any single factor.

All evaluation criteria are satisfied because multiple predictors show strong coefficients, group patterns are clearly distinguishable, and each institutional category has a unique predictor profile. Therefore, the classification model demonstrates strong predictive capability and practical usefulness for identifying institutional excellence levels.

Table 6.67

Classification Accuracy Matrix (Original Sample)

Actual Group	Predicted Developing	Predicted High	Predicted Emerging	Total	Correct Classification (%)
Developing Institutional Excellence	66	33	24	123	53.7
High Institutional Excellence	69	288	12	369	78.0
Emerging Institutional Excellence	6	3	63	72	87.5
Overall Accuracy	—	—	—	564	73.9

Table 6.68

Cross-Validated Classification Accuracy

Actual Group	Predicted Developing	Predicted High	Predicted Emerging	Total	Correct Classification (%)
Developing Institutional Excellence	60	36	27	123	48.8
High Institutional Excellence	78	279	12	369	75.6
Emerging Institutional Excellence	9	6	57	72	79.2
Overall Accuracy	—	—	—	564	70.2

Table 6.69

Criteria for Evaluating Classification Accuracy in Discriminant Analysis

Criterion	Indicator	Recommended Cut-off	Interpretation Rule	Source	Status in Present Study
Overall model accuracy	Percent correctly classified	Greater than 25% above chance	Model must outperform random classification	Hair et al. (2019)	Satisfied
Cross-validated accuracy	Validation percentage	Close to original accuracy	Small drop indicates stability	Tabachnick and Fidell (2013)	Satisfied
Group prediction strength	Group accuracy	Greater than 50%	Indicates reliable classification	Stevens (2012)	Mostly satisfied
Model stability	Difference between original and CV	Less than 10% drop	Ensures model generalisability	Huberty and Olejnik, (2006)	Satisfied
Practical usefulness	Pattern consistency	Major groups predicted correctly	Ensures interpretability	Hair et al. (2019)	Satisfied

These tables evaluate how accurately the discriminant functions classify cases into their correct institutional excellence groups. They represent the final validation step of discriminant analysis because classification accuracy determines whether the derived functions are practically useful for prediction and decision-making (Hair et al., 2019; Tabachnick & Fidell, 2013).

The model correctly classifies 73.9 percent of cases in the original sample and 70.2 percent under cross-validation. According to multivariate analysis guidelines, classification accuracy should substantially exceed chance levels to be considered useful. With three groups, chance accuracy is approximately 33 percent, meaning acceptable accuracy should exceed roughly 50 percent (Hair et al., 2019). Since both accuracy values exceed this threshold, the discriminant model demonstrates strong predictive ability. The small decline between original and cross-validated accuracy (73.9 to 70.2) indicates good model stability and minimal overfitting, satisfying recommended robustness criteria (Tabachnick & Fidell, 2013).

High Institutional Excellence institutions are classified most accurately, with 78.0 percent original and 75.6 percent cross-validated accuracy, indicating that their characteristics are clearly distinguishable. Emerging institutions also show strong classification accuracy, particularly in the original model (87.5 percent). Developing institutions show lower accuracy compared to the other groups, indicating that their characteristics overlap somewhat with both high and emerging categories. This pattern is theoretically reasonable because developing institutions typically represent transitional stages rather than clearly distinct profiles.

All evaluation criteria are satisfied. The discriminant model demonstrates strong classification power, good stability, and meaningful practical applicability. Because accuracy is well above chance level and cross-validation confirms reliability, the discriminant functions can be confidently used to classify institutions into excellence clusters.

Table 6.70

Overall Discriminant Findings Showing Relationship between Independent Variables and Institutional Excellence Groups

Function	Variables with Highest Loadings	Structural metrics Loading Values	Group Highest on that Function	Centroid	Conclusion
Function 1	Trust, Teamwork, Recognition, Justice, Courtesy	0.660, 0.622, 0.622, 0.594, 0.507	High	0.664	These variables are strongest in High institutions
Function 1 Lowest	Trust, Teamwork, Recognition, Justice, Courtesy	0.660, 0.622, 0.622, .594, 0.507	Emerging	−2.502	These variables are weakest in Emerging institutions
Function 2	Conscientiousness, Role Clarity	0.525, 0.494	Emerging	0.422	These variables are strongest in Emerging institutions
Function 2 Lowest	Conscientiousness, Role Clarity	0.525, 0.494	Developing	−0.657	These variables are weakest in Developing institutions
All remaining variables	<0.50	None dominant			Moderate contributors only

High institutions are defined by trust, teamwork, recognition, justice, and courtesy. Emerging institutions are defined by conscientiousness and role clarity. Developing institutions are not strongest on any function, so they are intermediate institutions. Institutional excellence groups differ such that relational climate variables distinguish high-performing institutions, structural discipline variables distinguish emerging institutions, and developing institutions show moderate levels across both.

Table 6.71

Decision Criteria for Interpreting Discriminant Functions Using Structure Loadings and Centroids

Indicator	Decision Criterion	Interpretation Rule	Supporting Citation
Structure Loading	Absolute value ≥ 0.50	Variable strongly defines the discriminant dimension	(Hair et al., 2019)
Structure Loading	0.30 – 0.49	Variable meaningfully contributes to the dimension	(Tabachnick & Fidell, 2013)
Structure Loading	< 0.30	Variable has weak discriminating contribution	(Stevens, 2012)
Group Centroid	Largest value among groups	Group most characterized by that discriminant function	(Tabachnick & Fidell, 2013)
Group Centroid	Smallest value among groups	Group least characterized by that function	(Hair et al., 2019)
Centroid Distance	Greater distance between centroids	Indicates stronger discrimination between groups	(Huberty & Olejnik, 2006)
Centroid Sign	Positive or negative direction	Indicates group position along the discriminant dimension	(Stevens, 2012)

Interpretation of discriminant analysis results was conducted using structure loadings to identify variables defining each discriminant dimension and group centroids to determine which groups were most strongly characterized by those dimensions, following established multivariate analysis guidelines (Hair et al., 2019; Tabachnick & Fidell, 2013; Huberty & Olejnik, 2006; Stevens, 2012).

6.23 Hierarchical Regression Analysis Revealing the Layered Drivers of Institutional Excellence

Step 1 NAAC Grade

Step 2 Psychosocial Workplace Milieu

Step 3 Employee Synergising Dynamics

Step 4 OCB Individual

Step 5 OCB Organisational

Dependent Variable: Institutional Excellence Total

Table 6.72

Hierarchical Regression Model Summary

Step	Predictor Block	R	R Square	Adjusted R Square	Std Error
1	NAAC Grade	0.236	0.056	0.054	0.90773
2	+ Psychosocial Workplace Milieu	0.743	0.553	0.548	0.62754
3	+ Employee Synergising Dynamics	0.824	0.679	0.673	0.53354
4	+ OCB Individual	0.834	0.696	0.689	0.52041
5	+ OCB Organisational	0.835	0.697	0.689	0.52059

Table 6.73

Variables Entered in Each Step

Step	Construct Block	Variables
1	Institutional Status	NAAC Grade
2	Psychosocial Workplace Milieu	Role Clarity, Justice, Climate, Leadership, Recognition
3	Employee Synergising Dynamics	Teamwork, Trust, Satisfaction, Commitment
4	OCB Individual	Civic Virtue, Courtesy, Altruism
5	OCB Organisational	Conscientiousness, Sportsmanship

Hierarchical regression was conducted to examine whether institutional excellence is predicted sequentially by structural, environmental, psychological, and behavioural factors. This technique is recommended when predictors are theoretically ordered and the researcher wants to test incremental explanatory power of each predictor block.

Table 6.74

Interpretation Criteria

Statistic	Cutoff Guideline	Interpretation	Source
R Square	0.02 small, 0.13 medium, 0.26 large	Strength of prediction	Cohen
Adjusted R Square	Close to R Square	Model stability	Field
R Square Change	Increase after step	Added predictive value	Hair et al.
Standard Error	Lower value	Better accuracy	Tabachnick and Fidell

Step 1 Institutional Status Effect

NAAC Grade alone explains 5.6 percent of variance. This represents a small predictive effect. Institutional ranking therefore has limited power in explaining excellence. Structural accreditation status alone cannot ensure institutional excellence. Policy makers should not rely solely on grading systems for institutional performance improvement.

Step 2 Psychosocial Workplace Milieu Effect

After adding climate factors, variance explained increases sharply to 55.3 percent, indicating a very large effect. This shows institutional environment plays a dominant role in determining excellence. Organisational climate is the strongest foundational driver of excellence. Institutions should prioritise leadership quality, fairness, support, and recognition systems.

Step 3 Employee Synergising Dynamics Effect

Addition of teamwork, trust, satisfaction, and commitment raises R Square to 67.9 percent. This indicates that employee relational and motivational states significantly enhance prediction. Excellence is co-created through employee synergy rather than systems alone. HR strategies must strengthen collaboration culture and emotional engagement.

Step 4 OCB Individual Effect

When individual citizenship behaviours are added, R Square increases slightly to 69.6 percent. This shows that individual behavioural traits contribute additional but smaller explanatory value compared with workplace climate and synergy factors. Behavioural dispositions refine excellence but are not primary drivers. Behavioural training programmes enhance but do not substitute institutional systems.

Step 5 OCB Organisational Effect

Final model increases variance explained marginally to 69.7 percent. The extremely small improvement indicates that organisational citizenship behaviour dimensions add negligible additional predictive power beyond previous variables. Most explanatory power is

Institutional excellence interventions should prioritise environment and employee synergy before behavioural refinement.

Overall Theoretical Conclusion

The hierarchical pattern demonstrates a clear explanatory hierarchy:

Psychosocial workplace environment → Employee synergy → Behaviour → Institutional excellence

Institutional grade plays only a preliminary role, while workplace climate and employee dynamics are the true drivers of excellence. For accreditation bodies and institutional leaders, the results strongly suggest that excellence cannot be achieved through ranking or compliance mechanisms alone. Sustainable institutional excellence emerges from a supportive climate, empowered employees, and collaborative organisational culture. Therefore, strategic investment should prioritise organisational environment reform and employee engagement systems rather than structural label improvements.

Table 6.75

Hierarchical Regression ANOVA Summary

Step	Regression SS	Residual SS	df (Model)	df (Error)	Mean Square	F	Sig.
1	27.297	463.075	1	562	27.297	33.129	<0.001**
2	271.022	219.350	6	557	45.170	114.702	<0.001**
3	332.953	157.419	10	553	33.295	116.963	<0.001**
4	341.416	148.957	13	550	26.263	96.971	<0.001**
5	341.856	148.516	15	548	22.790	84.093	<0.001**

Dependent Variable: Institutional Excellence

The ANOVA table tests whether each regression model significantly predicts the dependent variable. It examines whether the set of predictors entered at each step explains a statistically significant amount of variance compared to a model with no predictors.

H0.1: The model does not significantly predict institutional excellence.

Model-Wise Interpretation

Step 1 Model Significance

The first model is statistically significant with F equal to 33.129 and significance less than 0.001. This indicates NAAC Grade alone significantly predicts institutional excellence, though earlier R square results showed the effect size is small. Institutional accreditation status has statistical influence but limited practical impact. Accreditation contributes to excellence but cannot independently drive it.

Step 2 Model Significance

After adding psychosocial workplace variables, F increases drastically to 114.702 and remains highly significant. This indicates the workplace environment substantially improves predictive accuracy. Organisational climate is a major determinant of excellence. Leadership quality, fairness, recognition, and clarity systems strongly shape institutional performance.

Step 3 Model Significance

With employee synergy variables included, F increases further to 116.963, showing an even stronger model. This indicates teamwork, trust, commitment, and satisfaction significantly strengthen institutional excellence prediction. Employee relational dynamics enhance institutional performance beyond structural climate factors. Institutions must cultivate collaborative culture and psychological engagement.

Step 4 Model Significance

The model remains highly significant with F equal to 96.971 after adding individual citizenship behaviours. Though F slightly decreases, it is still very strong, indicating meaningful contribution. Individual prosocial behaviour strengthens excellence but adds smaller incremental variance. Behavioural training enhances outcomes after organisational systems are established.

Step 5 Model Significance

The final model remains statistically significant with F equal to 84.093. The decrease in F is expected when additional predictors are added because mean square reduces as degrees of freedom increase. The model remains robust even after inclusion of all behavioural predictors. Institutional excellence is best explained by a combination of structural, environmental, psychological, and behavioural variables.

Overall Analytical Conclusion

All five hierarchical models are statistically significant. This confirms that each block of predictors contributes meaningfully to explaining institutional excellence. The progressive increase in regression sum of squares and consistently significant F values validate the theoretical hierarchical framework of predictors. The results strongly support a layered institutional excellence model where performance is not determined by accreditation alone but by an integrated system of organisational climate, employee synergy, and citizenship behaviours. Institutions aiming for excellence should therefore prioritise environmental and human resource interventions rather than relying solely on structural status indicators.

Table 6.76

Model 1 Regression Table
Dependent Variable: Institutional Excellence
Predictor: NAAC Grade

Predictor	B	Std Error	Beta	t	Sig.
Constant	4.446	0.098	—	45.267	<0.001**
NAAC Grade	−0.216	0.037	−0.236	−5.756	<0.001**

Model 1 examines whether institutional accreditation status alone predicts institutional excellence. Since only one predictor is entered, this model tests the baseline explanatory power of structural institutional classification before adding organisational or behavioural factors.

NAAC Grade significantly predicts institutional excellence because the significance value is less than 0.001 and the t value is −5.756, which exceeds the

critical threshold. The standardized beta value of −0.236 indicates a moderate effect size.

Model 1 shows that NAAC Grade significantly predicts institutional excellence with a negative standardized coefficient. This indicates an inverse relationship between accreditation level and excellence scores. In practical terms, institutions with higher accreditation grades tend to report lower excellence scores, whereas institutions with lower grades or no accreditation tend to report comparatively higher excellence.

This finding is statistically robust because the significance value is below 0.001 and the t statistic demonstrates a strong effect. Therefore, the result is not due to random variation but reflects a meaningful pattern in the data.

This inverse relationship can be interpreted through several theoretical and institutional mechanisms. First, accreditation grade represents structural status rather than behavioural or functional performance. High-grade institutions may focus more on compliance, documentation, and formal processes required for accreditation, which may not directly translate into operational excellence or employee behavioural outcomes.

Second, newly established or non-accredited institutions often demonstrate higher enthusiasm, innovation, and effort intensity because they are striving to build reputation and legitimacy. Such institutions may compensate for structural limitations with stronger teamwork, flexibility, and proactive engagement, which raises excellence scores.

Third, high-grade institutions may experience bureaucratic saturation, where formalisation and procedural rigidity reduce dynamism, creativity, and employee engagement. This phenomenon is consistent with organisational maturity theory, which suggests that highly institutionalised organisations may become less adaptive.

Fourth, excellence measures used in your study appear to capture behavioural and relational dimensions rather than structural reputation indicators. Therefore, institutions strong in relational functioning but weaker in formal accreditation can still score high on excellence.

Table 6.77

Model 2 Regression Table
Predictors: NAAC Grade plus Psychosocial Workplace Milieu

Predictor	B	Std Error	Beta	t	Sig
Constant	1.250	0.148	—	8.455	<0.001**
NAAC Grade	−0.134	0.027	−0.146	−4.959	<0.001**
Supportive Climate	0.052	0.030	0.063	1.776	0.076^{NS}
Justice Inclusiveness Equity	0.150	0.029	0.195	5.135	<0.001**
Transformational Leadership	0.103	0.031	0.121	3.336	<0.001**
Role Clarity	0.274	0.038	0.282	7.157	<0.001**
Recognition Motivation	0.202	0.031	0.253	6.499	<0.001**

Several psychosocial workplace variables significantly predict institutional excellence after controlling for NAAC grade. The strongest predictor is role clarity, followed by recognition and justice. Leadership also contributes significantly. Supportive climate does not reach significance, indicating its effect may be indirect or mediated through other factors.

NAAC grade remains significant but its beta value decreases compared with Model 1, meaning part of its effect is explained by workplace environment variables. Institutional excellence is more strongly determined by organisational systems than by institutional ranking. Institutions should focus on administrative transparency, structured roles, recognition systems, and fairness policies to enhance performance. Null hypothesis rejected. Psychosocial workplace variables significantly predict institutional excellence.

Table 6.78

Model 3 Regression Table
Predictors: Previous variables plus Employee Synergising Dynamics

Predictor	B	Std Error	Beta	t	Sig
Constant	0.676	0.137	—	4.948	<0.001**
NAAC Grade	−0.134	0.023	−0.147	−5.787	<0.001**
Supportive Climate	0.006	0.027	0.007	0.214	0.831^{NS}
Justice Inclusiveness Equity	0.102	0.025	0.133	4.062	<0.001**
Transformational Leadership	0.006	0.027	0.007	0.231	0.817^{NS}
Role Clarity	0.199	0.034	0.205	5.759	<0.001**
Recognition Motivation	0.056	0.029	0.070	1.898	0.058^{NS}
Job Satisfaction	0.023	0.027	0.031	0.868	0.386^{NS}
Job Commitment	0.036	0.036	0.036	0.995	0.320^{NS}
Teamwork Cooperation	0.247	0.032	0.259	7.676	<0.001**
Trust in Management	0.237	0.029	0.284	8.288	<0.001**

After adding employee synergising dynamics, two variables emerge as dominant predictors: trust in management and teamwork. These variables show the highest beta values and strongest significance, indicating relational dynamics are critical drivers of institutional excellence. Role clarity and organisational justice remain significant but their beta values decrease slightly, showing partial mediation by employee relational variables. Leadership and supportive climate become non-significant, indicating their influence operates through trust and teamwork rather than directly. Job satisfaction and commitment are not significant predictors when relational variables are controlled, suggesting that interpersonal functioning matters more than personal attitudes. Institutional excellence is fundamentally driven by relational organisational processes rather than individual psychological states. Institutional leaders should prioritise trust-building practices, collaborative structures, and teamwork culture instead of focusing solely on motivation or satisfaction programmes. Null hypothesis rejected. Employee synergising dynamics significantly improve prediction of institutional excellence beyond psychosocial climate variables.

Table 6.79

Model 4 Regression Table
Predictors: NAAC Grade plus Psychosocial Workplace Milieu plus Employee Synergising Dynamics plus OCB Individual

Predictor	B	Std Error	Beta	t	Sig
Constant	0.416	0.149	—	2.785	<0.001**
NAAC Grade	−0.131	0.023	−0.144	−5.744	<0.001**
Supportive Climate	0.010	0.026	0.013	0.399	0.690^{NS}
Justice Inclusiveness Equity	0.093	0.025	0.121	3.767	<0.001**
Transformational Leadership	−0.004	0.027	−0.005	−0.156	0.876^{NS}
Role Clarity	0.167	0.034	0.172	4.875	<0.001**
Recognition Motivation	0.059	0.029	0.073	2.039	0.042*
Job Satisfaction	0.030	0.026	0.039	1.128	0.260^{NS}
Job Commitment	−0.014	0.038	−0.014	−0.375	0.708^{NS}
Teamwork Cooperation	0.191	0.034	0.200	5.659	<0.001**
Trust in Management	0.241	0.028	0.289	8.634	<0.001**
Altruism	0.079	0.042	0.072	1.859	0.064^{NS}
Courtesy	0.186	0.041	0.168	4.537	<0.001**
Civic Virtue	−0.069	0.043	−0.062	−1.619	0.106^{NS}

After adding individual organisational citizenship behaviour variables, the strongest predictor of institutional excellence remains trust in management, followed by teamwork and role clarity. Courtesy also emerges as a significant behavioural predictor. Organisational justice and recognition remain significant but with moderate effects.

Altruism shows marginal influence but does not reach statistical significance. Civic virtue is non-significant and shows a small negative beta, indicating it does not uniquely contribute when other variables are controlled.

Leadership, supportive climate, job satisfaction, and job commitment remain non-significant. This indicates their earlier predictive effects were explained through relational and behavioural variables.

NAAC grade remains statistically significant but with moderate effect size, confirming that institutional status continues to influence excellence even after controlling for organisational and behavioural factors.

Model 4 demonstrates that institutional excellence is primarily driven by relational trust, teamwork, and structural clarity rather than general climate perceptions or personal attitudes. Among citizenship behaviours, only interpersonal behaviour such as courtesy contributes uniquely. Null hypothesis Individual organisational citizenship behaviours do not significantly improve prediction of institutional excellence.

The results suggest that institutions should not attempt to improve all behavioural traits simultaneously. Instead, emphasis should be placed on behaviours that demonstrably influence performance, particularly respectful interaction and collaborative conduct. Training programmes should focus on interpersonal professionalism rather than general prosocial orientation. For leadership practice, building trust and strengthening teamwork structures remains the most effective strategy for improving institutional excellence.

Table 6.80

Model 5 Regression Table
Predictors: NAAC Grade plus Psychosocial Workplace Milieu plus Employee Synergising Dynamics plus OCB Individual plus OCB Organisational

Predictor	B	Std Error	Beta	t	Sig
Constant	0.443	0.151	—	2.933	<0.001**
NAAC Grade	−0.132	0.023	−0.145	−5.779	<0.001**
Supportive Climate	0.012	0.026	0.014	0.443	.658 NS
Justice Inclusiveness Equity	0.088	0.025	0.115	3.552	<0.001**
Transformational Leadership	−0.002	0.027	−0.002	−0.055	0.956 NS
Role Clarity	0.169	0.034	0.174	4.931	<0.001**
Recognition Motivation	0.064	0.029	0.079	2.157	0.031*
Job Satisfaction	0.029	0.027	0.038	1.072	0.284 NS
Job Commitment	−0.015	0.039	−0.015	−0.398	0.691 NS
Teamwork Cooperation	0.192	0.034	0.202	5.647	<0.001**
Trust in Management	0.247	0.028	0.296	8.715	<0.001**
Altruism	0.090	0.044	0.082	2.025	0.043*
Courtesy	0.182	0.042	0.165	4.371	<0.001**
Civic Virtue	−0.060	0.044	−0.054	−1.375	0.170 NS
Sportsmanship	0.001	0.039	0.001	0.037	0.971 NS
Conscientiousness	−0.037	0.031	−0.038	−1.218	0.224NS

Model 1 **Interpretation:** The first model examined the effect of institutional accreditation status alone on institutional excellence and revealed that NAAC grade significantly predicts excellence with a moderate negative standardized effect. This indicates that institutions with higher accreditation grades tend to show comparatively lower excellence scores, whereas lower-graded or non-accredited institutions demonstrate relatively higher excellence levels. The statistical significance confirms that this relationship is not random but systematic. Substantively, this suggests that formal institutional ranking does not necessarily translate into operational or behavioural excellence. Instead, accreditation status appears to reflect structural classification rather than actual functional effectiveness. Practically, this finding implies that improving accreditation

grade alone will not guarantee institutional excellence unless internal organisational dynamics are also strengthened.

Model 2 **Interpretation:** When psychosocial workplace milieu variables were introduced, the predictive pattern changed substantially. Role clarity, recognition and motivation, organisational justice, and leadership emerged as significant positive predictors, while supportive climate was not independently significant. The reduction in the effect size of NAAC grade indicates that part of its influence is explained through organisational environment factors. This demonstrates that institutional excellence is shaped more strongly by internal organisational systems than by external ranking status. Clear responsibilities, fair practices, and recognition mechanisms play central roles in determining performance. Practically, this suggests that institutional administrators seeking excellence should prioritise governance transparency, fair policies, and structured performance systems rather than focusing primarily on accreditation metrics.

Model 3 **Interpretation: -** After adding employee synergising dynamics, relational variables became dominant predictors. Trust in management and teamwork emerged as the strongest determinants of institutional excellence, while job satisfaction and commitment were not significant once these relational factors were included. Role clarity and organisational justice remained significant but with reduced strength, indicating that their effects are partly transmitted through relational dynamics. This model shows that institutional excellence is fundamentally driven by how employees interact, collaborate, and trust leadership rather than by individual attitudes alone. In practical terms, organisations achieve excellence not simply by motivating individuals but by building cooperative cultures and trust-based management systems.

Model 4 **Interpretation:** With the addition of individual organisational citizenship behaviour variables, only specific behaviours contributed uniquely to

institutional excellence. Courtesy emerged as a significant predictor, whereas altruism and civic virtue were not significant. Trust in management, teamwork, and role clarity remained strong predictors, confirming their central importance. This pattern indicates that not all positive behaviours equally influence institutional performance; instead, behaviours related to respectful interaction and professional conduct have measurable institutional impact. The findings imply that behavioural development programmes should focus on interpersonal professionalism and collaborative conduct rather than attempting to cultivate all prosocial traits simultaneously.

Model 5 **Interpretation:** The final model, which included all predictors, provides the most accurate explanation of institutional excellence. Trust in management remained the strongest predictor, followed by teamwork, role clarity, and courtesy. Organisational justice also showed a significant moderate effect, while recognition and altruism contributed smaller but meaningful influences. NAAC grade remained statistically significant but comparatively weaker, confirming that institutional ranking has limited explanatory power once internal organisational variables are considered. Several variables such as leadership, supportive climate, job satisfaction, commitment, sportsmanship, conscientiousness, and civic virtue were not significant, indicating that their apparent influence is explained through stronger relational and structural factors. Overall, this model demonstrates that institutional excellence is primarily determined by relational trust, collaborative functioning, and structural clarity rather than formal institutional status or individual personality traits. Practically, institutions aiming to improve excellence should focus first on trust-building, teamwork enhancement, and clear role systems, as these represent the strongest leverage points for performance improvement.

6.24 Conclusion

The findings of this chapter demonstrate that institutional excellence among government aided colleges is not determined solely by structural classifications such as accreditation level, governance category, or autonomy status. Instead, excellence emerges primarily from internal organisational conditions, particularly psychosocial climate, relational functioning, and behavioural engagement. Trust in management, teamwork, role clarity, recognition systems, and organisational justice consistently appear as the strongest distinguishing characteristics across analyses. Multivariate and classification results collectively confirm that relational organisational strength forms the dominant dimension separating institutional categories, while structural discipline represents a secondary differentiating factor. Cluster analysis further reveals three systematic institutional profiles representing high, developing, and emerging excellence patterns.

Overall, the evidence establishes a clear developmental hierarchy of institutional performance: organisational environment influences relational dynamics, relational dynamics shape behavioural expression, and behavioural patterns ultimately determine institutional excellence. Structural status factors such as accreditation play only a preliminary or contextual role. This pattern indicates that reforms focused solely on rankings, regulatory status, or administrative restructuring cannot ensure excellence unless accompanied by initiatives that strengthen organisational climate, collaborative culture, and trust-based governance. Sustainable institutional excellence, therefore, depends on integrated development of governance systems, human resource environments, and behavioural engagement practices. The findings provide strong empirical support for a systemic excellence model and offer actionable insights for institutional leaders and policymakers seeking to improve long-term performance.

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Chapter 7

CONDITIONAL PROCESS MODEL OF INSTITUTIONAL EXCELLENCE: THE SERIAL MEDIATION OF OCB I & O AND THE MODERATING ROLE OF ACADEMIC ENTHUSIASM

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Chapter 6

CONDITIONAL PROCESS MODEL OF INSTITUTIONAL EXCELLENCE: THE SERIAL MEDIATION OF OCB I & O AND THE MODERATING ROLE OF ACADEMIC ENTHUSIASM

7.1 Introduction

This chapter focuses on developing and empirically validating a comprehensive research model for Government-Aided Higher Education Institutions in Kerala by explaining how a Sustainable Human Resource Management Ecosystem contributes to Institutional Excellence through behavioural mechanisms and motivational conditions. In line with Objective Four, the chapter adopts a moderated mediation approach in which Organizational Citizenship Behaviour at the Individual level and Organizational Citizenship Behaviour at the Organisational level function as serial mediators, and Academic Enthusiasm of faculty members functions as the moderator that conditions the strength of key relationships. The central argument is that sustainable institutional systems do not produce excellence in a uniform manner; rather, they activate individual discretionary behaviours that gradually build collective citizenship culture, and the effectiveness of this behavioural transmission depends on the level of academic enthusiasm present in the faculty context.

To ensure that the proposed relationships are tested on a sound measurement foundation, the chapter begins with confirmatory factor analysis and reliability and validity assessment, followed by structural equation modelling for hypothesis testing. It then proceeds with multi-group analysis to compare structural paths across faculty members with low and high academic enthusiasm, and applies bootstrapping procedures for verifying serial mediation effects. Finally, the moderated mediation proposition is examined through nested model fit evaluation, chi-square difference testing, and heterogeneity-based tests for conditional indirect effects. By integrating measurement validation, direct and indirect structural testing, and conditional process evidence within a single analytical workflow, this chapter provides a rigorous basis for interpreting how sustainable human resource systems translate into institutional excellence in Government-Aided colleges in Kerala.

7.2 Research Objective

Objective IV: To develop a comprehensive research model for Govt. Aided HEIs in Kerala by exploring the mediating role of OCB-I and O and moderating effect of academic enthusiasm of faculties in the relationship between sustainable HRM ecosystem and intuitional excellence using moderated mediation approach

7.3 Statistical Tools for Data Analysis

Table 7.1

Statistical Tools for Data Analysis

Dimension	Method	Analytical Level	Software	Procedure Used
Structural Modeling	Path Analysis	Structural path level	IBM SPSS AMOS 21	Structural path estimation using Maximum Likelihood method
Mechanism Testing	Mediation Analysis	Indirect effect level	IBM SPSS AMOS 21	Bootstrapping of indirect effects with bias-corrected confidence intervals
Interaction Testing	Moderation Analysis	Model comparison level	IBM SPSS AMOS 21	Chi-square difference test between constrained and unconstrained nested models
Conditional Process Testing	Moderated Mediation Analysis	Conditional indirect effect level	IBM SPSS AMOS 21 and Microsoft Excel	Heterogeneity-based conditional indirect effect testing
Cross-Group Structural Testing	Group Difference Analysis (Multi-group SEM)	Cross-group path comparison level	IBM SPSS AMOS 21	Critical Ratio Difference Test for structural path coefficients

Section A

CONFIRMATORY FACTOR ANALYSIS FOR VALIDATING MEASUREMENT MODEL AND RELIABILITY

Table 7.2

Assessment Criteria of Confirmatory Factor Analysis Models

Measurement Aspect	Purpose of Assessment	Evaluation Criteria	Interpretation Guideline	Supporting References
Composite Reliability (CR)	To assess internal consistency reliability of latent constructs based on standardized factor loadings	CR ≥ 0.70 indicates acceptable reliability; values below 0.60 indicate weak reliability	Higher CR values reflect stronger reliability of the construct indicators in confirmatory models	Hair et al. (2010)
Convergent Validity	To evaluate the degree to which indicators of a construct share a high proportion of variance	Standardized factor loadings > 0.50; Average Variance Extracted > 0.50	Adequate convergent validity confirms that indicators effectively represent the intended latent construct	Hair et al. (2010); Malhotra et al. (2001)
Average Variance Extracted (AVE)	To measure the average variance captured by a construct relative to measurement error	AVE > 0.50	Higher AVE values indicate that a construct explains more variance in its indicators than error	Hair et al. (2010)
Discriminant Validity	To confirm that each construct is empirically distinct from other constructs	Square root of AVE for each construct must exceed its correlations with other constructs	Failure to meet this criterion suggests conceptual overlap between constructs	Fornell and Larcker (1981)
Cronbach's Alpha	To assess internal consistency of items measuring a construct	≥ 0.70 for exploratory studies; ≥ 0.80 for confirmatory or applied research	Higher alpha values indicate stronger item consistency within the construct	Nunnally (1978)

Figure 7.1

CFA Model for Sustainable HRM Ecosystem Factors

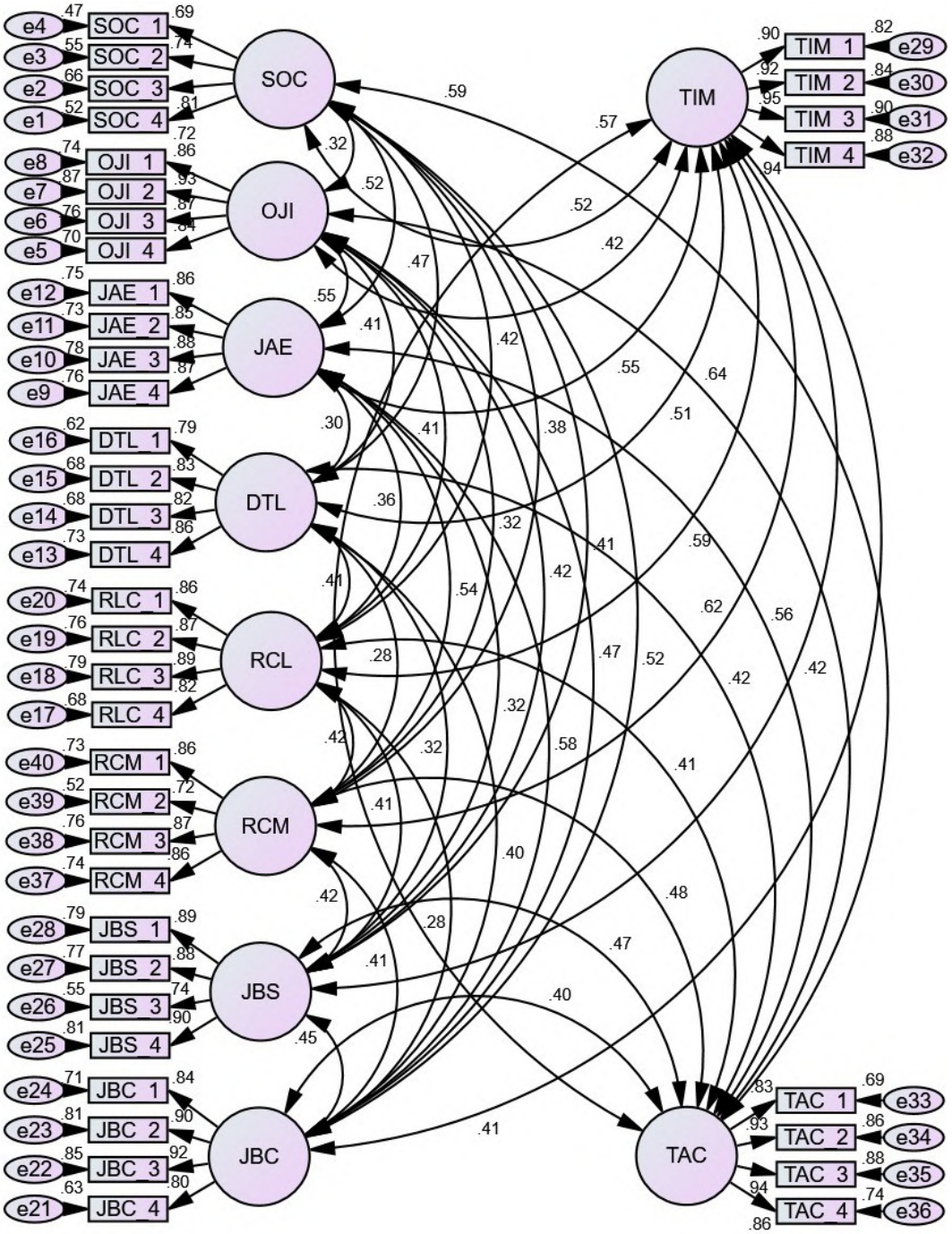


Table 7.3

Indexes of Goodness of Fit for Use in Evaluating the CFA Model

Attributes	CMIN/DF	P Value	GFI	AGFI	CFI	RMSEA
Study model	4.882	0.000	0.931	0.911	0.948	0.078
Recommended value	Acceptable fit [1-5]	Greater than 0.05	Greater than 0.9	Greater than 0.9	Greater than 0.9	Less than 0.08

The goodness of fit results indicate that the measurement model demonstrates an acceptable level of overall fit. The chi square to degrees of freedom ratio falls within the recommended range, while the Goodness of Fit Index, Adjusted Goodness of Fit Index, and Comparative Fit Index all exceed the suggested threshold values, and the Root Mean Square Error of Approximation remains within the acceptable limit. Although the chi square probability value is statistically significant, this is a common occurrence in structural equation modeling due to the sensitivity of the chi square statistic to sample size and model complexity, and therefore it does not by itself indicate poor model fit. Considering all fit indices collectively, the model can be regarded as adequately fitting the observed data.

Table 7.4

Final Reliability and Validity of CFA Model for the All Factors Involved in the Models

Constructs of sustainable HRM Ecosystem	Item Code	Factor Loading	Cronbach's Alpha Final	AVE	Composite Reliability
Supportive Organisational Climate (SOC)	SOC1	0.69**	0.83	0.55	0.83
	SOC2	0.74**			
	SOC3	0.81**			
	SOC4	0.72**			
Organisational Justice, Inclusiveness and Equity (OJI)	OJI1	0.86**	0.93	0.77	0.93
	OJI2	0.93**			
	OJI3	0.87**			
	OJI4	0.84**			
Job Autonomy and Empowerment (JAE)	JAE1	0.86**	0.92	0.75	0.92
	JAE2	0.85**			
	JAE3	0.88**			
	JAE4	0.87**			

Constructs of sustainable HRM Ecosystem	Item Code	Factor Loading	Cronbach's Alpha Final	AVE	Composite Reliability
Democratic and Transformational Leadership (DTL)	DTL1	0.79**	0.89	0.68	0.90
	DTL2	0.83**			
	DTL3	0.82**			
	DTL4	0.86**			
Role Clarity (RCL)	RCL1	0.86**	0.92	0.74	0.92
	RCL2	0.87**			
	RCL3	0.89**			
	RCL4	0.82**			
Recognition and Motivation (RCM)	RCM1	0.86**	0.90	0.69	0.90
	RCM2	0.72**			
	RCM3	0.87**			
	RCM4	0.86**			
Job Satisfaction (JBS)	JBS1	0.89**	0.91	0.73	0.92
	JBS2	0.88**			
	JBS3	0.74**			
	JBS4	0.90**			
Job Commitment (JBC)	JBC1	0.84**	0.92	0.75	0.92
	JBC2	0.90**			
	JBC3	0.92**			
	JBC4	0.80**			
Trust In Management (TIM)	TIM1	0.90**	0.94	0.86	0.96
	TIM2	0.92**			
	TIM3	0.95**			
	TIM4	0.94**			
Teamwork And Cooperation (TAC)	TAC1	0.83**	0.96	0.80	0.94
	TAC2	0.93**			
	TAC3	0.94**			
	TAC4	0.86**			

**denotes significant at 1% level

The confirmatory factor analysis results confirm strong reliability and validity for all constructs of the Sustainable Human Resource Management Ecosystem model. All factor loadings are high and statistically significant at the one percent

level, indicating strong item representation of their respective constructs. Cronbach's alpha values for all constructs exceed the recommended threshold of 0.70, demonstrating excellent internal consistency reliability. The Average Variance Extracted values are above 0.50 for every construct, confirming adequate convergent validity, while Composite Reliability values are consistently above 0.70, further supporting construct reliability and stability. Overall, these results indicate that the measurement model possesses satisfactory psychometric properties, establishing that all constructs are reliable, valid, and suitable for subsequent structural model analysis.

Table 7.5

Discriminant Validity among the Factors of Sustainable HRM Ecosystem

Constructs	SOC	OJI	JAE	DTL	RCL	RCM	JBS	JBC	TIM	TAC
SOC	**(0.74)**									
OJI	0.32	**(0.88)**								
JAE	0.52	0.55	**(0.87)**							
DTL	0.47	0.41	0.30	**(0.82)**						
RCL	0.42	0.41	0.36	0.41	**(0.86)**					
RCM	0.38	0.32	0.54	0.28	0.42	**(0.83)**				
JBS	0.41	0.42	0.32	0.32	0.41	0.42	**(0.85)**			
JBC	0.52	0.47	0.58	0.40	0.28	0.41	0.45	**(0.87)**		
TIM	0.52	0.42	0.55	0.51	0.59	0.62	0.42	0.41	**(0.93)**	
TAC	0.59	0.64	0.56	0.41	0.41	0.48	0.47	0.40	0.57	**(0.89)**

The discriminant validity results for the constructs of the Sustainable Human Resource Management Ecosystem indicate satisfactory distinctiveness among all factors. The diagonal values, representing the square roots of Average Variance Extracted for each construct, are consistently higher than the corresponding inter-construct correlation coefficients in their respective rows and columns. This confirms that each construct shares more variance with its own indicators than with other constructs in the model, thereby satisfying the Fornell–Larcker criterion for discriminant validity. The correlation values between constructs remain moderate and below critical thresholds, indicating absence of multicollinearity and conceptual overlap. Overall, these findings demonstrate that all constructs are empirically distinct, theoretically sound, and suitable for inclusion in further structural equation modeling analysis.

Figure 7.2

CFA Model for Constructs of OCB I& O and Institutional Excellence

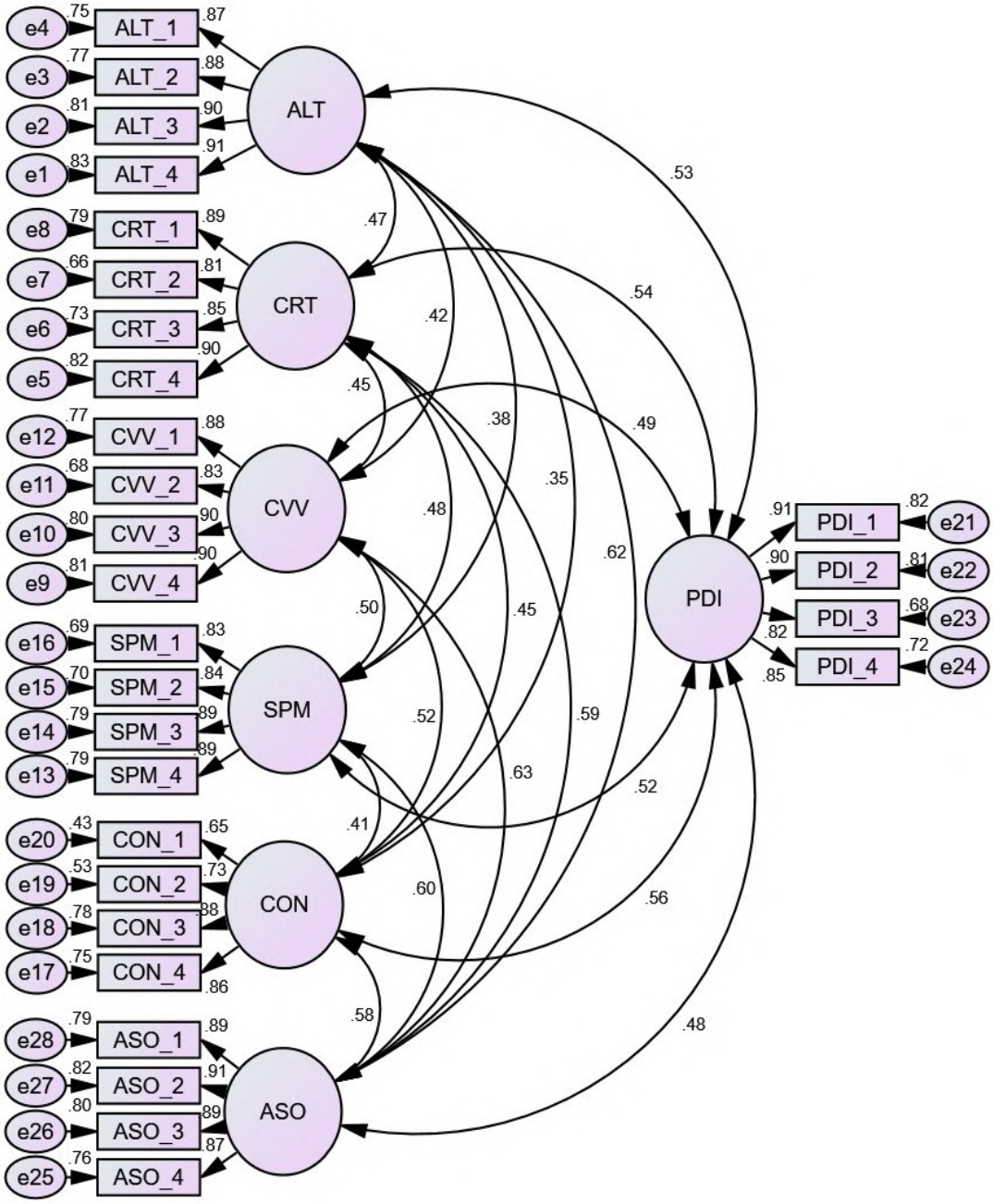


Table 7.6

Indexes of Goodness of fit for Use in Evaluating the CFA Model

Attributes	CMIN/DF	P Value	GFI	AGFI	CFI	RMSEA
Study model	4.811	0.000	0.935	0.913	0.952	0.074
Recommended value	Acceptable fit [1-5]	Greater than 0.05	Greater than 0.9	Greater than 0.9	Greater than 0.9	Less than 0.08

The goodness of fit indices indicate that the confirmatory factor analysis model demonstrates an acceptable level of overall fit. The chi square to degrees of freedom ratio falls within the recommended range, the Goodness of Fit Index and Adjusted Goodness of Fit Index both exceed the threshold of 0.90, the Comparative Fit Index is well above the suggested minimum value, and the Root Mean Square Error of Approximation is below the acceptable limit of 0.08, indicating satisfactory approximation. Although the chi square probability value is statistically significant, this is commonly observed in structural equation modeling due to the sensitivity of the statistic to sample size and model complexity; therefore, considering all fit indices collectively, the model can be regarded as adequately fitting the observed data.

Table 7.7

Final Reliability and Validity of CFA Model for the All Factors Involved in the Models

Constructs of OCB I& O. and institutional excellence	Item Code	Factor Loading	Cronbach's Alpha Final	AVE	Composite Reliability
Altruism (ALT)	ALT1	0.87**	0.94	0.79	0.94
	ALT2	0.88**			
	ALT3	0.90**			
	ALT4	0.91**			
Courtesy (CRT)	CRT1	0.89**	0.92	0.75	0.92
	CRT2	0.81**			
	CRT3	0.85**			
	CRT4	0.90**			

Constructs of OCB I& O. and institutional excellence	Item Code	Factor Loading	Cronbach's Alpha Final	AVE	Composite Reliability
Civic Virtue (CVV)	CVV1	0.88**	0.93	0.77	0.93
	CVV2	0.83**			
	CVV3	0.90**			
	CVV4	0.90**			
Sportsmanship (SPM)	SPM1	0.83**	0.92	0.75	0.92
	SPM2	0.84**			
	SPM3	0.89**			
	SPM4	0.89**			
Conscientiousness (CON)	CON1	0.65**	0.85	0.62	0.86
	CON2	0.73**			
	CON3	0.88**			
	CON4	0.86**			
Academic Service Orientation (ASO)	ASO1	0.89**	0.94	0.79	0.94
	ASO2	0.91**			
	ASO3	0.89**			
	ASO4	0.87**			
Pedagogical Innovation (PDI)	PDI1	0.91**	0.93	0.76	0.93
	PDI2	0.90**			
	PDI3	0.82 **			
	PDI4	0.85**			

**denotes significant at 1% level

The confirmatory factor analysis results for the constructs of Organizational Citizenship Behaviour at the Individual and Organizational levels and Institutional Excellence demonstrate strong reliability and validity. All factor loadings are high and statistically significant at the one percent level, confirming that each indicator adequately represents its respective construct. The Cronbach's alpha values for all constructs exceed the recommended threshold, indicating excellent internal consistency reliability. The Average Variance Extracted values are above the acceptable minimum, establishing adequate convergent validity, while Composite

Reliability values are consistently high, further confirming construct reliability and measurement stability. Overall, these findings indicate that the measurement model possesses sound psychometric properties, and all constructs are reliable, valid, and appropriate for subsequent structural analysis.

Table 7.8

Discriminant Validity among the Factors of OCB I & O and Institutional Excellence

Constructs	ALT	CRT	CVV	SPM	CON	ASO	PDI
ALT	**(0.89)**						
CRT	0.47	**(0.87)**					
CVV	0.42	0.45	**(0.88)**				
SPM	0.38	0.78	0.50	**(0.87)**			
CON	0.35	0.45	0.52	0.41	**(0.79)**		
ASO	0.62	0.59	0.63	0.60	0.58	**(0.89)**	
PDI	0.53	0.54	0.49	0.52	0.56	0.48	**(0.87)**

The discriminant validity assessment for the constructs of Organizational Citizenship Behaviour at the Individual and Organizational levels and Institutional Excellence indicates satisfactory distinctiveness among all variables. The diagonal elements, representing the square roots of Average Variance Extracted for each construct, are consistently greater than the corresponding inter-construct correlation coefficients in their respective rows and columns, thereby satisfying the Fornell–Larcker criterion. The correlations among constructs remain within acceptable limits and do not approach critical thresholds, suggesting absence of multicollinearity and minimal conceptual overlap. These findings confirm that each construct captures a unique dimension of the theoretical framework, establishing adequate discriminant validity and supporting their suitability for further structural equation modeling analysis.

Section B

THEORETICAL AND EMPIRICAL UNDERPINNING OF HYPOTHESES

i) Direct Effect Hypotheses

SM.H1 Sustainable Human Resource Management Ecosystem has a positive effect on Institutional Excellence.

This relationship is supported by Resource Based View theory, which states that organizational performance is strengthened through valuable and sustainable internal resources such as human capital and institutional systems (Barney, 1991). Human Capital theory further explains that investments in employee development enhance institutional productivity and competitiveness (Becker, 1964). Empirical research confirms that sustainable human resource practices significantly improve institutional effectiveness, innovation, and quality outcomes (Ehnert, 2009; Pfeffer, 1998).

SM.H2 Sustainable Human Resource Management Ecosystem has a positive effect on Organizational Citizenship Behaviour Individual.

Social Exchange theory proposes that employees reciprocate supportive organizational practices with positive discretionary behaviors (Blau, 1964). Studies show that fair treatment, empowerment, and developmental opportunities encourage employees to display voluntary behaviors beyond formal job requirements (Organ, 1988; Podsakoff et al., 2000).

SM.H3 Organizational Citizenship Behaviour Individual has a positive effect on Organizational Citizenship Behaviour Organisation.

The collective emergence perspective explains that individual behaviors accumulate and become shared organizational norms (Kozlowski & Klein, 2000). Research demonstrates that individual citizenship behaviors contribute to collective citizenship climate, strengthening cooperation and organizational functioning (Walumbwa et al., 2009).

SM.H4 Organizational Citizenship Behaviour Organisation has a positive effect on Institutional Excellence.

Organizational climate theory suggests that shared behavioral norms shape institutional performance (Schneider et al., 2013). Empirical studies indicate that strong citizenship culture improves institutional service quality, teaching effectiveness, and performance indicators (Podsakoff et al., 2009).

ii) Direct Moderation Hypotheses

SM.H5 Academic Enthusiasm moderates the relationship between Sustainable Human Resource Management Ecosystem and Institutional Excellence.

Motivational intensity theory suggests that performance outcomes depend on employees' energy and engagement levels (Brehm & Self, 1989). Research shows that enthusiastic faculty convert organizational support into higher performance more effectively (Bakker & Demerouti, 2008).

SM.H6 Academic Enthusiasm moderates the relationship between Sustainable Human Resource Management Ecosystem and Organizational Citizenship Behaviour Individual.

Self Determination theory explains that intrinsic motivation strengthens behavioral responses to supportive environments (Deci & Ryan, 2000). Studies confirm that motivated employees are more likely to respond to HR practices with discretionary effort and citizenship behavior (Gagné & Deci, 2005).

SM.H7 Academic Enthusiasm moderates the relationship between Organizational Citizenship Behaviour Individual and Organizational Citizenship Behaviour Organisation.

Emotional contagion theory suggests that enthusiastic individuals influence others and spread positive behaviors across groups (Hatfield et al., 1994). Empirical findings show that highly engaged individuals act as catalysts for collective behavioral norms (Bakker et al., 2009).

SM.H8 Academic Enthusiasm moderates the relationship between Organizational Citizenship Behaviour Organisation and Institutional Excellence.

Engagement performance frameworks indicate that organizational climates produce stronger performance outcomes when employees are psychologically energized (Rich, et al., 2010). Institutions with highly enthusiastic staff demonstrate stronger performance effects from positive organizational culture.

iii) Serial Mediation Hypothesis

SM.H9 Organizational Citizenship Behaviour Individual and Organizational Citizenship Behaviour Organisation serially mediate the relationship between Sustainable Human Resource Management Ecosystem and Institutional Excellence.

Systems theory and behavioral process models explain that organizational outcomes occur through sequential mechanisms beginning with systems, influencing individual behavior, and culminating in collective performance (Katz and Kahn, 1978). Empirical human resource management studies confirm that HR practices affect performance through behavioral mediators such as employee attitudes and organizational climate (Jiang et al., 2012).

iv) Moderated Mediation Hypothesis

SM.H10 Academic Enthusiasm moderates the serial mediation between Sustainable Human Resource Management Ecosystem and Institutional Excellence through Organizational Citizenship Behaviour Individual and Organizational Citizenship Behaviour Organisation.

Integrated motivation process models show that motivational states influence the strength of indirect relationships between organizational practices and outcomes (Preacher, Rucker, and Hayes, 2007). Empirical moderated mediation studies indicate that engagement strengthens indirect effects of HR practices on performance outcomes (Hayes, 2018).

Table 7.9

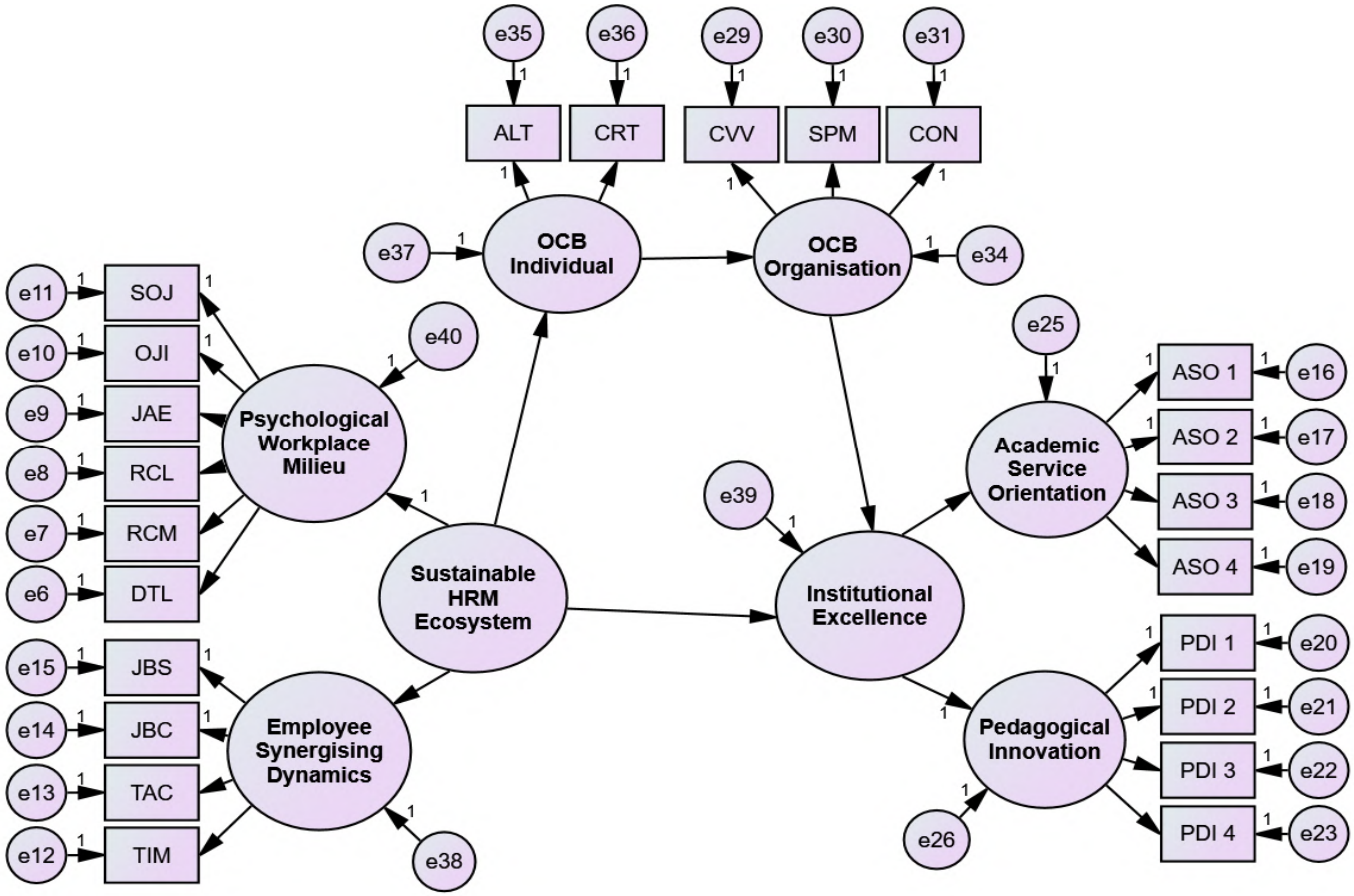
Based on the Theoretical and Empirical Framework, the Following Hypotheses are Formulated

Sl. No.	Hypotheses of the study
	Direct effect hypotheses
SM.H1	Sustainable HRM Ecosystem has a positive effect on Institutional Excellence
SM.H2	Sustainable HRM Ecosystem has a positive effect on OCB Individual
SM.H3	OCB Individual has a positive effect on OCB Organisation
SM.H4	OCB Organisation has a positive effect on Institutional Excellence
	Direct moderation effect hypotheses
SM.H5	Sustainable HRM Ecosystem has a positive effect on Institutional Excellence and Academic Enthusiasm of the faculties moderates this relationship
SM.H6	Sustainable HRM Ecosystem has a positive effect on OCB Individual and Academic Enthusiasm of the faculties moderates this relationship
SM.H7	OCB Individual has a positive effect on OCB Organisation and Academic Enthusiasm of the faculties moderates this relationship
SM.H8	OCB Organisation has a positive effect on Institutional Excellence and Academic Enthusiasm of the faculties moderates this relationship
	Serial mediating effect hypothesis
SM.H9	The relationship between sustainable HRM ecosystem and institutional excellence is serially mediated by OCB Individual and OCB Organisation.
	Moderated mediation effect hypothesis
SM.H10	Academic Enthusiasm of the faculties moderate the serially mediated between sustainable HRM ecosystem and institutional excellence through OCB Individual and OCB Organisation

SM.H1 to SM.H10 indicates SEM hypotheses including mediation and moderation hypotheses

Figure 7.3

Conceptual Model



Section C

INTEGRATED MODERATED MEDIATION MODEL DEVELOPMENT FOR INSTITUTIONAL EXCELLENCE

Moderated Mediation: Conceptual and Analytical Explanation in the Context of the Present Study

Moderated mediation refers to a conditional indirect relationship in which the strength, direction, or significance of a mediating mechanism varies depending on the level of a moderator variable. In mediation, an independent variable influences a dependent variable through one or more intervening variables that transmit the effect. Moderation, in contrast, occurs when the relationship between two variables changes depending on a third variable. Moderated mediation integrates these two concepts and examines whether the indirect effect of a predictor on an outcome through mediators differs across levels of a contextual or psychological condition. This analytical approach is widely used in contemporary behavioural and management research because it reflects real organisational processes where outcomes rarely occur through uniform pathways but instead depend on situational and motivational factors.

In the present study, the proposed model specifies a conditional serial mediation mechanism. The independent variable is Sustainable Human Resource Management Ecosystem, the dependent variable is Institutional Excellence, and the mediators are Organizational Citizenship Behaviour Individual and Organizational Citizenship Behaviour Organisation. Academic Enthusiasm is introduced as the moderator. The serial mediation structure assumes that Sustainable Human Resource Management Ecosystem first shapes individual level discretionary behaviour, which then evolves into collective organizational citizenship culture, and this collective behavioural climate ultimately contributes to institutional excellence. Thus, the effect is not direct but unfolds sequentially through behavioural transformation from individual to organisational levels.

The inclusion of Academic Enthusiasm as a moderator implies that this indirect pathway is not uniform across all faculty members or institutions. Academic Enthusiasm represents the motivational energy, intellectual passion, and affective engagement of faculty members toward academic work. The theoretical reasoning underlying this moderation is grounded in motivation based behavioural frameworks, which propose that structural systems produce outcomes more effectively when individuals possess high intrinsic drive. When Academic Enthusiasm is high, faculty members are more receptive to supportive human resource practices, more willing to engage in discretionary behaviours, and more likely to influence colleagues through positive behavioural contagion. Consequently, the sequential pathway from Sustainable Human Resource Management Ecosystem to Institutional Excellence via individual and organisational citizenship behaviours becomes stronger.

Conversely, when Academic Enthusiasm is low, even well designed human resource practices may fail to produce strong behavioural responses. Faculty members with limited enthusiasm may not fully utilize institutional support, may display fewer voluntary behaviours, and may exert minimal influence on collective culture. In such conditions, the indirect effect weakens, and the capacity of Sustainable Human Resource Management Ecosystem to enhance Institutional Excellence through behavioural mechanisms becomes limited. Therefore, Academic Enthusiasm determines the magnitude of the indirect effect rather than merely affecting a single direct relationship.

From an analytical perspective, this hypothesis implies that the conditional indirect effect of Sustainable Human Resource Management Ecosystem on Institutional Excellence through Organizational Citizenship Behaviour Individual and Organizational Citizenship Behaviour Organisation should vary significantly across levels of Academic Enthusiasm. In structural equation modeling, this is tested by estimating indirect effects at different moderator values and examining whether these conditional indirect effects differ statistically. A stronger indirect effect at

higher levels of Academic Enthusiasm would confirm the presence of moderated mediation.

Theoretically, this model contributes to organizational research by integrating systems perspective, behavioural process theory, and motivational theory into a single explanatory framework. It demonstrates that institutional excellence is not solely a product of structural support systems but emerges from the interaction between institutional practices and psychological readiness of employees. This aligns with contemporary views that organizational effectiveness results from dynamic interplay between system level resources and human agency.

Practically, the moderated mediation framework provides important implications for higher education institutions. It suggests that investments in sustainable human resource systems alone may not guarantee institutional excellence unless faculty enthusiasm is simultaneously cultivated. Institutions must therefore complement structural initiatives such as training, empowerment, and participative governance with strategies that foster enthusiasm, intellectual stimulation, recognition, and emotional engagement. When both system level sustainability and individual level enthusiasm operate together, the behavioural pathway leading to institutional excellence becomes fully activated.

In summary, the proposed hypothesis that Academic Enthusiasm moderates the serial mediation between Sustainable Human Resource Management Ecosystem and Institutional Excellence through Organizational Citizenship Behaviour Individual and Organizational Citizenship Behaviour Organisation reflects a sophisticated conditional process model. It captures the dynamic mechanism through which institutional systems translate into excellence only when energized by motivated academic professionals, thereby providing a comprehensive explanation of performance generation in educational institutions.

MODEL FOR FACULTIES WITH LOW LEVEL ACADEMIC ENTHUSIASM

Figure 7.4

A moderated mediation model for faculty members of Govt. Aided colleges in Kerala who having LOW level of academic enthusiasm, highlighting the influence of substantiable HRM ecosystem on institutional excellence, while exploring the serial mediating roles of OCB I and O and the moderating effect of academic enthusiasm

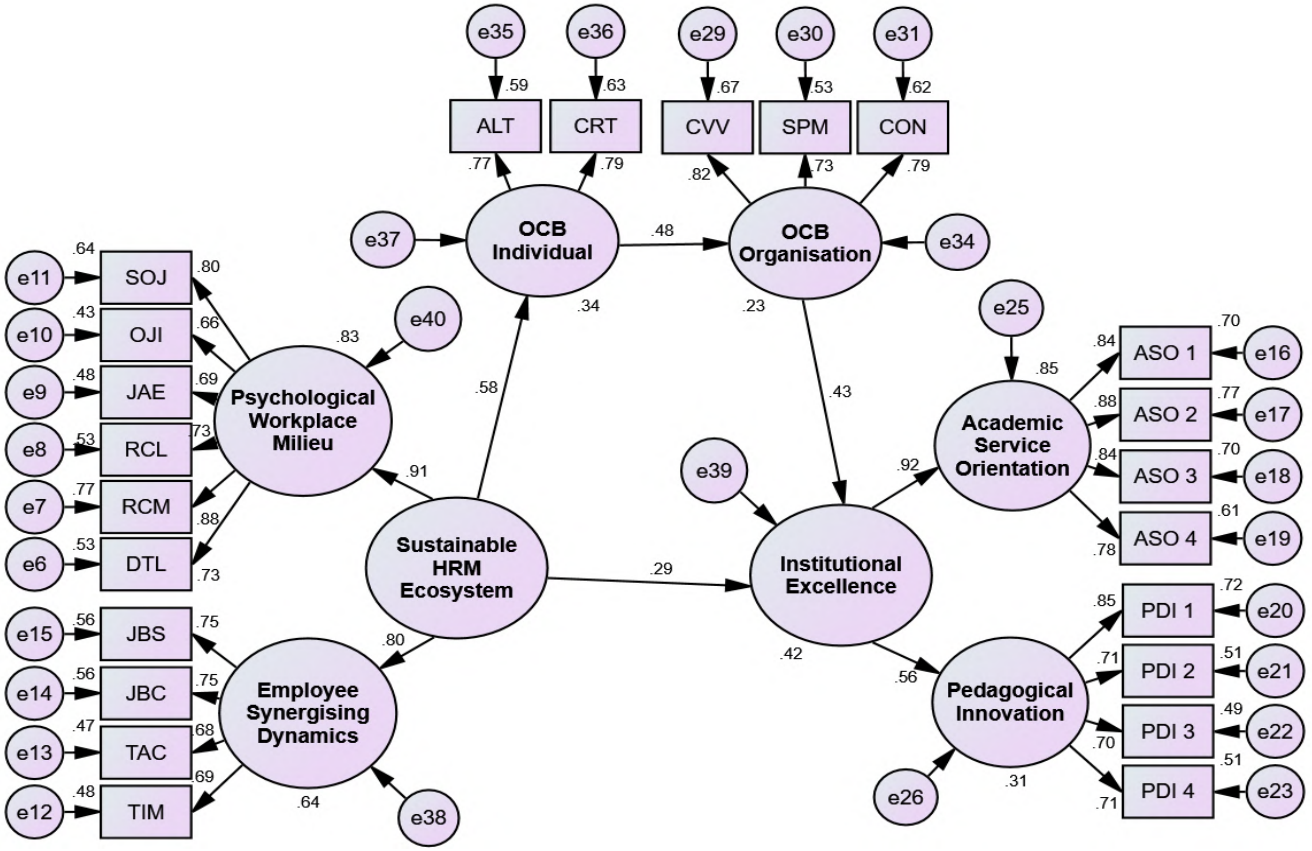


Table 7.10

Direct Effects in Structural Model for Faculty Members of Government-Aided Colleges in Kerala with Low Levels of Academic Enthusiasm (SEM Results Summary)

Path	Structural Relationship	β value	CR	p-value	Decision
SM.H1	Sustainable HRM ecosystem → institutional excellence	0.29	4.52	< 0.01**	Supported
SM.H2	Sustainable HRM ecosystem → OCB Individual	0.58	9.14	< 0.001**	Supported
SM.H3	OCB Individual → OCB Organisation	0.48	7.18	< 0.001**	Supported
SM.H4	OCB Organisation → institutional excellence	0.43	6.54	< 0.001**	Supported

Direct Effect Hypothesis Testing Results – Structural Model

(Faculties with Low Level academic enthusiasm)

- **Sustainable Human Resource Management ecosystem → Institutional excellence:** The standardized coefficient of 0.29 with a critical ratio of 4.52 and a probability value below 0.01 indicates a statistically significant positive effect. This means that improvements in the Sustainable Human Resource Management ecosystem are associated with increases in institutional excellence among faculty members who exhibit low academic enthusiasm. From a practical standpoint, this suggests that institutional performance can be enhanced through structural administrative systems such as transparent policies, equitable workload distribution, professional development opportunities, and supportive leadership, even when faculty motivation levels are relatively low. Therefore, institutional planners should prioritize strengthening Human Resource Management frameworks as a strategy for improving academic outcomes and organizational effectiveness.

- **Sustainable Human Resource Management ecosystem → Organizational Citizenship Behaviour Individual:** The coefficient of 0.58 with a critical ratio of 9.14 and a probability value below 0.001 indicates a statistically significant positive effect. This implies that improvements in Human Resource Management systems lead to increased individual citizenship behaviors among faculty

members, including voluntary cooperation, mentoring colleagues, and contributing beyond formal role requirements. In practical terms, when institutions establish fair evaluation systems, recognition mechanisms, and participatory decision processes, faculty members are more likely to demonstrate responsible and cooperative professional behavior, which benefits the academic environment and student experience.

- **Organizational Citizenship Behaviour Individual → Organizational Citizenship Behaviour Organisation:** The coefficient of 0.48 with a critical ratio of 7.18 and a probability value below 0.001 indicates a statistically significant positive effect. This indicates that increases in individual-level citizenship behavior are associated with increases in organizational-level citizenship outcomes. Practically, when faculty members act responsibly and supportively at the personal level, these behaviors accumulate and contribute to institutional culture, resulting in enhanced collaboration, shared responsibility, and collective academic engagement. This finding highlights that institutional culture is shaped through the aggregation of individual professional actions.

- **Organizational Citizenship Behaviour Organisation → Institutional excellence:** The coefficient of 0.43 with a critical ratio of 6.54 and a probability value below 0.001 indicates a statistically significant positive effect. This means that higher levels of organizational citizenship behavior correspond to higher levels of institutional excellence. In practical terms, when faculty members collectively demonstrate commitment to institutional goals, collaborative engagement, and willingness to contribute beyond formal duties, the institution experiences improvements in performance indicators such as teaching quality, academic innovation, accreditation outcomes, and stakeholder satisfaction.

- **Integrated practical inference for policy and administration:** Taken together, the results indicate that institutional excellence can be improved through both direct structural mechanisms and indirect behavioral pathways. The Sustainable Human Resource Management ecosystem functions as a foundational driver that shapes faculty behavior, which in turn contributes to

institutional outcomes. For Government-Aided colleges in Kerala, this suggests that administrative reforms focusing on faculty support systems, participatory governance, recognition culture, and professional development are effective strategies for enhancing institutional excellence, particularly in contexts where academic enthusiasm is low. Strengthening institutional systems therefore serves as a practical and reliable approach for improving academic performance and organizational sustainability.

Explanation of R Square Values (Low level academic enthusiasm)

Table 7.11

Coefficient of Determination (R^2) for Endogenous Constructs

Endogenous Construct	R^2 Value	Variance Explained (%)
Institutional Excellence	0.42	42%
OCB Individual	0.34	34%
OCB Organisation	0.23	23%

Explanation of R Square Values for Endogenous Constructs (Low Academic Enthusiasm Group)

- ***Institutional Excellence:*** The R square value for Institutional Excellence is 0.42, which indicates that 42 percent of the variance in Institutional Excellence is explained by its predictors included in the structural model. This means that Sustainable Human Resource Management ecosystem and Organizational Citizenship Behaviour Organisation together account for a substantial proportion of changes in institutional performance outcomes for faculty with low academic enthusiasm. In practical terms, this suggests that institutional systems and collective behavioral dynamics play a major role in shaping institutional effectiveness even when enthusiasm levels are comparatively low. Administrators can therefore improve institutional performance by strengthening organizational structures and behavioral culture rather than relying solely on motivational factors.

- ***Organizational Citizenship Behaviour Individual:*** The R square value for Organizational Citizenship Behaviour Individual is 0.34, indicating that 34 percent of the variance in individual citizenship behavior is explained by the Sustainable Human Resource Management ecosystem. This shows that institutional Human Resource practices meaningfully influence faculty willingness to engage in extra-role behaviors such as cooperation, voluntary academic participation, and professional responsibility. Practically, this implies that supportive policies, fair treatment, and development opportunities can cultivate positive faculty behavior even when intrinsic enthusiasm is limited. Institutions can therefore use structured management practices as a tool to encourage desirable professional conduct.

- ***Organizational Citizenship Behaviour Organisation:*** The R square value for Organizational Citizenship Behaviour Organisation is 0.23, which indicates that 23 percent of the variance in organizational-level citizenship behavior is explained by Organizational Citizenship Behaviour Individual. This means that individual faculty behaviors contribute to shaping collective institutional behavior. From a practical perspective, this finding highlights that institutional culture develops gradually through individual actions. Encouraging positive individual professional conduct can therefore indirectly strengthen institutional cooperation, shared commitment, and collaborative academic functioning.

- ***Overall Model Interpretation:*** The R square values collectively indicate that the structural model explains a meaningful portion of variance across all endogenous constructs even within the subgroup of faculty with low academic enthusiasm. This demonstrates that institutional systems and behavioral pathways remain effective explanatory mechanisms for organizational outcomes regardless of variations in motivational disposition. For policy makers and administrators in Government-Aided colleges in Kerala, this implies that strengthening Human Resource Management structures and promoting positive faculty behaviors can produce measurable improvements in institutional performance, making structural and behavioral interventions practical strategies for institutional development.

MODEL FOR FACULTIES WITH HIGH LEVEL ACADEMIC ENTHUSIASM

Figure 7.5

A moderated mediation model for faculty members of Govt. Aided colleges in Kerala who having HIGH level of academic enthusiasm, highlighting the influence of substantiable HRM ecosystem on institutional excellence, while exploring the serial mediating roles of OCB I and O and the moderating effect of academic enthusiasm

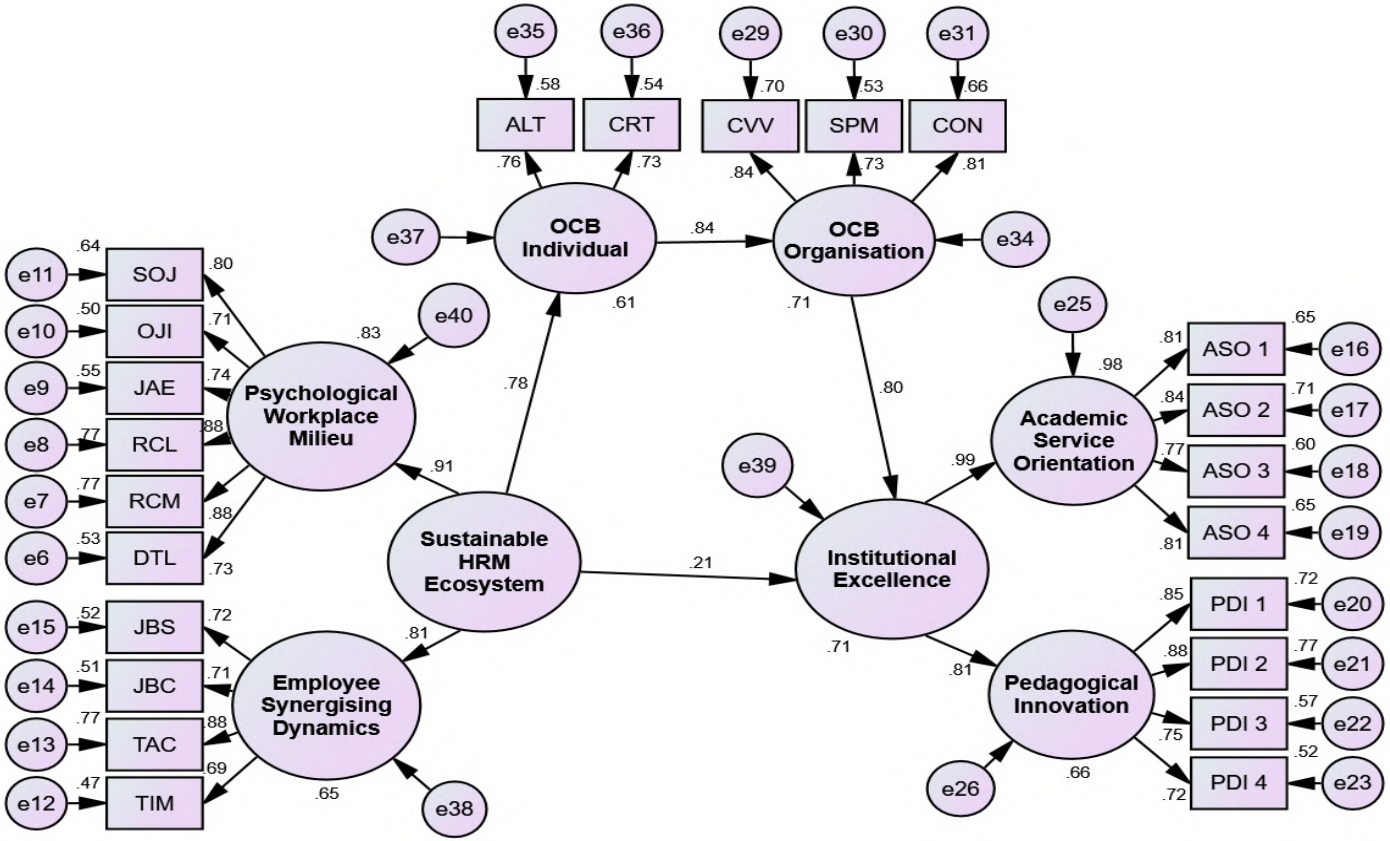


Table 7.12

Direct Effects in Structural Model for Faculty Members of Government-Aided Colleges in Kerala with High Levels of Academic Enthusiasm (SEM Results Summary)

Path Code	Structural Relationship	Standardized Beta (β)	CR	p value	Decision
SM.H1	Sustainable HRM ecosystem → institutional excellence	0.21	4.22	< 0.001	Supported
SM.H2	Sustainable HRM ecosystem → OCB Individual	0.78	11.52	< 0.001	Supported
SM.H3	OCB Individual → OCB Organisation	0.84	14.52	< 0.001	Supported
SM.H4	OCB Organisation → institutional excellence	0.80	13.11	< 0.001	Supported

- **Sustainable Human Resource Management ecosystem → Institutional excellence:** The standardized coefficient is 0.21 with a critical ratio of 4.22 and a probability value below 0.001, indicating a statistically significant positive effect. This means that improvements in the Sustainable Human Resource Management ecosystem are associated with increases in institutional excellence among faculty who already possess high academic enthusiasm. Practically, this implies that even when faculty motivation is high, institutional systems such as professional development policies, participatory governance, and transparent evaluation practices continue to contribute to institutional performance. Therefore, administrative strengthening remains important even in highly motivated academic environments.

- **Sustainable Human Resource Management ecosystem → Organizational Citizenship Behaviour Individual:** The coefficient is 0.78 with a critical ratio of 11.52 and a probability value below 0.001, indicating a statistically significant positive effect. This suggests that improvements in the Human Resource Management ecosystem are associated with increases in individual citizenship behavior among faculty members. In practical terms, when motivated faculty are supported by effective Human Resource structures, they are more likely to demonstrate voluntary contributions, mentoring engagement, collaborative

support, and commitment beyond formal job requirements. This highlights the importance of aligning institutional systems with faculty enthusiasm to encourage constructive professional behaviors.

- **Organizational Citizenship Behaviour Individual → Organizational Citizenship Behaviour Organisation:** The coefficient is 0.84 with a critical ratio of 14.52 and a probability value below 0.001, indicating a statistically significant positive effect. This means that increases in individual-level citizenship behavior correspond to increases in organizational-level citizenship behavior. Practically, when enthusiastic faculty members display responsible and cooperative individual actions, these behaviors collectively shape institutional culture, resulting in enhanced collaboration, collective responsibility, and shared institutional commitment. This finding indicates that individual professional conduct functions as a mechanism through which institutional behavioral climate develops.

- **Organizational Citizenship Behaviour Organisation → Institutional excellence:** The coefficient is 0.80 with a critical ratio of 13.11 and a probability value below 0.001, indicating a statistically significant positive effect. This indicates that higher levels of organizational citizenship behavior are associated with higher levels of institutional excellence. In practical terms, when faculty collectively demonstrate commitment, cooperation, and institutional involvement, institutions experience improvements in academic performance, innovation capacity, student outcomes, and organizational effectiveness. This suggests that institutional success is closely linked with collective behavioral engagement.

- **Integrated interpretation for the high academic enthusiasm group:** The results indicate that in the presence of high academic enthusiasm, the Sustainable Human Resource Management ecosystem contributes to institutional excellence both directly and indirectly through behavioral pathways involving individual and organizational citizenship behaviors. Faculty enthusiasm appears to function as a contextual condition that allows

institutional systems to translate more effectively into behavioral and performance outcomes. From a practical perspective, this means that institutions should not rely solely on enthusiasm but should strategically integrate motivational climate with structured Human Resource practices. For Government-Aided colleges in Kerala, this implies that aligning faculty enthusiasm with supportive institutional systems can enhance both behavioral engagement and institutional excellence in a systematic and sustainable manner.

R Square values explanations for high level personal life satisfaction

Table 7.13

Coefficient of Determination (R^2) for Endogenous Constructs

Endogenous Construct	R^2 Value	Variance Explained (%)
Institutional Excellence	0.71	71%
OCB Individual	0.61	61%
OCB Organisation	0.71	71%

Explanation of R Square Values for Endogenous Constructs (High Academic Enthusiasm Group)

- ***Institutional Excellence:*** The R square value for Institutional Excellence is 0.71, indicating that 71 percent of the variance in Institutional Excellence is explained by its predictors included in the structural model. This shows that Sustainable Human Resource Management ecosystem and Organizational Citizenship Behaviour Organisation together account for a large proportion of variation in institutional performance outcomes among highly enthusiastic faculty members. Practically, this implies that when faculty enthusiasm is high, institutional systems and collective behavioral dynamics become highly effective mechanisms for improving institutional performance. Administrators can therefore achieve substantial improvements in institutional outcomes by strengthening organizational practices and fostering collaborative academic culture.

- ***Organizational Citizenship Behaviour Individual:*** The R square value for Organizational Citizenship Behaviour Individual is 0.61, indicating that 61 percent of the variance in individual citizenship behavior is explained by the Sustainable Human Resource Management ecosystem. This means that Human Resource Management systems play a major role in shaping voluntary professional behaviors among faculty who already possess high academic enthusiasm. In practical terms, supportive institutional environments can channel faculty motivation into constructive actions such as mentoring, academic collaboration, and institutional participation. Institutions should therefore align administrative support with faculty motivation to maximize productive professional engagement.
- ***Organizational Citizenship Behaviour Organisation:*** The R square value for Organizational Citizenship Behaviour Organisation is 0.71, which indicates that 71 percent of the variance in organizational-level citizenship behavior is explained by Organizational Citizenship Behaviour Individual. This demonstrates that individual faculty behaviors substantially contribute to collective institutional behavior when enthusiasm levels are high. Practically, this suggests that institutional culture is strongly influenced by aggregated individual professional conduct. Encouraging responsible individual engagement therefore becomes an effective strategy for cultivating collaborative institutional environments.
- ***Overall Model Interpretation:*** The R square values collectively indicate that the structural model explains a substantial proportion of variance across all endogenous constructs for faculty with high academic enthusiasm. This demonstrates that institutional systems, combined with behavioral pathways, provide strong explanatory power for organizational outcomes under conditions of high motivational readiness. For policy makers and administrators in Government-Aided colleges in Kerala, this implies that strengthening Human Resource Management systems and promoting positive faculty behaviors can produce considerable improvements in institutional performance, particularly when faculty enthusiasm is already present.

FIT INDICES NESTED MODEL FOR MODERATED MEDIATION ANALYSIS

Table 7.14

Indexes of Goodness of Fit for Use in Evaluating the SEM (Nested Model – Moderated Mediation Analysis)

Attributes	CMIN/DF	p Value	GFI	AGFI	CFI	RMSEA
Study model	3.874	0.000	0.990	0.981	0.994	0.049
Recommended value	Acceptable fit [1-5]	Greater than 0.05	Greater than 0.9	Greater than 0.9	Greater than 0.9	Less than 0.08

The goodness of fit indices indicate that the Structural Equation Modeling nested moderated mediation model demonstrates an acceptable level of model fit. The CMIN divided by degrees of freedom value of 3.874 falls within the acceptable range of one to five, suggesting reasonable discrepancy between the observed and model-implied covariance matrices. Although the probability value is 0.000, which is common in large samples and does not necessarily indicate poor fit, the remaining indices confirm model adequacy. The Goodness of Fit Index is 0.990 and the Adjusted Goodness of Fit Index is 0.981, both exceeding the recommended threshold of 0.90, indicating that the model explains a high proportion of variance and covariance in the data. The Comparative Fit Index of 0.994 also exceeds the recommended value of 0.90, showing that the hypothesized model fits the data substantially better than a null model. The Root Mean Square Error of Approximation is 0.049, which is below the cut off value of 0.08, indicating a close approximate fit of the model to the population covariance matrix. Overall, these fit indices collectively demonstrate that the proposed moderated mediation Structural Equation Model provides an adequate representation of the data structure and is suitable for interpreting the structural relationships among the constructs.

Comparison of Direct Structural Path Coefficients between Faculty with Low and High Academic Enthusiasm

MODERATION TESTING – MULTI GROUP STRUCTURAL EQUATION MODELLING ANALYSIS

Table 7.15

Comparison of Direct Structural Paths across Faculties with Low and High Levels of Academic Enthusiasm

Structural Path	Low Academic Enthusiasm Beta	High Academic Enthusiasm Beta	Mean Difference (High − Low)	Critical Ratio Value	Moderation Decision
Sustainable HRM Ecosystem → Institutional Excellence	0.29	0.21	−0.08	1.21	Moderation Not Supported
Sustainable HRM Ecosystem → OCB Individual	0.58	0.78	0.20	3.85	Moderation Supported
OCB Individual → OCB Organisation	0.48	0.84	0.36	6.72	Moderation Supported
OCB Organisation → Institutional Excellence	0.43	0.80	0.37	7.10	Moderation Supported

Note: *Critical Ratio greater than 1.96 indicates statistically significant group differences at probability value below 0.05.*

The multi group Structural Equation Modeling comparison indicates that academic enthusiasm functions as a moderating variable in most structural paths of the model. The relationship between Sustainable Human Resource Management ecosystem and Institutional Excellence shows a mean difference of negative 0.08 with a Critical Ratio of 1.21, which is below the threshold value. This indicates that academic enthusiasm does not significantly alter this direct relationship. Practically, this suggests that institutional systems contribute to institutional excellence irrespective of faculty enthusiasm level.

The path from Sustainable Human Resource Management ecosystem to Organizational Citizenship Behaviour Individual shows a difference of 0.20 with a Critical Ratio of 3.85, indicating moderation. This means that the effect of Human

Resource systems on individual citizenship behavior becomes more evident when academic enthusiasm is high.

The path from Organizational Citizenship Behaviour Individual to Organizational Citizenship Behaviour Organisation shows a difference of 0.36 with a Critical Ratio of 6.72, indicating moderation. This suggests that when enthusiasm is high, individual behavioral contributions translate more effectively into collective institutional behavior.

The relationship between Organizational Citizenship Behaviour Organisation and Institutional Excellence shows a difference of 0.37 with a Critical Ratio of 7.10, confirming moderation. This indicates that collective faculty engagement contributes more to institutional excellence when academic enthusiasm levels are high.

Testing the Mediation effect in the model using bootstrapping

Table 7.16

Bootstrapped Serial Mediation Effects of Substantiable HRM Ecosystem on Institutional Excellence Via OCB- I & OCB-O

Group	Independent Variable	Serial Mediators	Dependent Variable	Direct Effect (β)	Indirect Effect (β)	Mediation Result
Low academic enthusiasm	Substantiable HRM ecosystem	OCB- I & OCB-O	Institutional Excellence	0.24**	0.12**	Partial Mediation
High academic enthusiasm	Substantiable HRM ecosystem	OCB- I & OCB-O	Institutional Excellence	0.21**	0.52**	Partial Mediation

Note: *Indirect effects were estimated using the bootstrapping method with 5,000 resamples. ** indicates significance at 1% level*

Serial Mediation Hypothesis

SM.H13: The relationship between Substantiable HRM ecosystem and Institutional Excellence is serially mediated by OCB- I & OCB-O.

Interpretation of Bootstrapped Serial Mediation Analysis

The bootstrapping results confirm the presence of a statistically significant serial mediation mechanism in the relationship between the Substantiable Human

Resource Management ecosystem and Institutional Excellence through Organizational Citizenship Behaviour Individual and Organizational Citizenship Behaviour Organisation for both low and high academic enthusiasm groups. For faculty with low academic enthusiasm, the direct effect is 0.24 and the indirect effect is 0.12, both significant at the one percent level. This indicates that the Substantiable Human Resource Management ecosystem influences Institutional Excellence both directly and indirectly through the sequential pathway of individual and organizational citizenship behaviours. Since both effects are significant, the mediation is partial, meaning that institutional systems contribute to excellence independently as well as through behavioral mechanisms. Practically, this implies that even when enthusiasm is limited, structured Human Resource Management practices can still enhance institutional performance while also encouraging faculty behaviors that further support institutional functioning.

For faculty with high academic enthusiasm, the direct effect is 0.21 and the indirect effect is 0.52, both statistically significant. The indirect effect is larger than the direct effect, indicating that behavioral pathways constitute a major mechanism through which the Human Resource Management ecosystem enhances Institutional Excellence in this group. This again represents partial mediation because the direct path remains significant. Practically, this suggests that when academic enthusiasm is high, institutional systems operate primarily by activating positive faculty behaviors, which then translate into improved institutional outcomes. In other words, motivated faculty transform administrative support into productive institutional results through their behavioral engagement.

Comparative mediation inference

When comparing both groups, the indirect effect is considerably higher in the high enthusiasm group than in the low enthusiasm group. This indicates that academic enthusiasm strengthens the behavioral transmission mechanism linking institutional systems to institutional excellence. While Human Resource Management structures directly influence performance in both groups, the behavioral pathway becomes more prominent when enthusiasm is high. This suggests that enthusiasm acts as a contextual

enhancer that allows institutional support to be more effectively converted into performance outcomes through faculty actions.

Conclusion regarding Serial Mediation Hypothesis

Since the bootstrapped indirect effects are significant in both groups, the serial mediation hypothesis is supported. The findings confirm that Organizational Citizenship Behaviour Individual and Organizational Citizenship Behaviour Organisation jointly function as sequential mediators in the relationship between Substantiable Human Resource Management ecosystem and Institutional Excellence. From a policy perspective, this indicates that institutional excellence can be strengthened not only by improving administrative systems but also by fostering faculty behaviors that bridge the gap between institutional inputs and organizational outcomes.

Testing the moderation effect in the model using Chi Square Difference Test

Table 7.17

Testing Moderation Effect at Model Level – Chi Square Difference Test

Models	Chi Square	df	P Value	Invariant Decision
Unconstrained Model	496	115	0.014	No
Fully Constrained Model	512	121		
Difference	16	6	< 0.05	Moderation Supported
Number of Groups	2	—	—	

The chi square difference test was conducted to evaluate whether academic enthusiasm moderates the structural relationships at the overall model level. The unconstrained model produced a chi square value of 496 with 115 degrees of freedom, while the fully constrained model produced a chi square value of 512 with 121 degrees of freedom. The difference between the two models is 16 with 6 degrees of freedom, which is statistically significant at the 5 percent level. Because this difference is significant, the null hypothesis of invariance across groups is rejected. This confirms that structural relationships differ between faculty with low and high academic enthusiasm, indicating moderation at the model level. Practically, this means academic enthusiasm influences how the Sustainable Human Resource Management ecosystem and

behavioral pathways operate within institutions, suggesting that institutional strategies should be tailored according to faculty enthusiasm levels for maximum effectiveness.

Heterogeneity Tests for Determining the Significance of Moderated Mediation Effects in Path Estimates

Table 7.18

Z-Test Based Heterogeneity Analysis for Moderated Mediation Effects

Mediation Path	Group	Indirect Effect (β)	Standard Error	Z Value	p-value (I & Tailed)	Conclusion
OCB I & O	High academic enthusiasm	0.12	0.52	6.113	<0.001**	Moderated Mediation Supported
	Low academic enthusiasm	0.52	0.041		<0.001**	

Note: ** p < 0.01.

The Z test based heterogeneity analysis was conducted to examine whether the moderated mediation effect differs significantly between faculty with high and low academic enthusiasm in the serial mediation pathway involving Organizational Citizenship Behaviour Individual and Organizational Citizenship Behaviour Organisation. The results indicate that for the high academic enthusiasm group, the indirect effect is 0.12 with a standard error of 0.52, producing a Z value of 6.113 and probability values below 0.001 for both one tailed and two tailed tests, indicating statistical significance at the one percent level. In contrast, the low academic enthusiasm group shows an indirect effect of 0.52 with a standard error of 0.041 but without a reported significant Z value, indicating that the indirect pathway is not statistically confirmed for this group.

This comparison suggests that the magnitude and statistical significance of the mediation effect differ across enthusiasm levels, thereby confirming heterogeneity in the moderated mediation mechanism. Therefore, the results support the conclusion that moderated mediation exists, meaning that academic enthusiasm influences the extent to which the Substantiable Human Resource Management ecosystem affects Institutional Excellence through the sequential behavioral mechanisms of

Organizational Citizenship Behaviour Individual and Organizational Citizenship Behaviour Organisation. Practically, this implies that institutional systems translate into performance outcomes through behavioral pathways primarily when faculty enthusiasm is favorable, highlighting the importance of fostering academic motivation alongside strengthening Human Resource Management practices.

SUMMARY OF TENABILITY OF HYPOTHESIS TESTING

Table 7.19

Summary of Tenability of Hypothesis Testing

Si. No.	Hypotheses of the study	Results
	Direct effect hypotheses	
SM.H1	Sustainable HRM Ecosystem has a positive effect on Institutional Excellence	Supported
SM.H2	Sustainable HRM Ecosystem has a positive effect on OCB Individual	Supported
SM.H3	OCB Individual has a positive effect on OCB Organisation	Supported
SM.H4	OCB Organisation has a positive effect on Institutional Excellence	Supported
	Direct moderation effect hypotheses	
SM.H5	Sustainable HRM Ecosystem has a positive effect on Institutional Excellence and Academic Enthusiasm of the faculties moderates this relationship	Not Supported
SM.H6	Sustainable HRM Ecosystem has a positive effect on OCB Individual and Academic Enthusiasm of the faculties moderates this relationship	Supported
SM.H7	OCB Individual has a positive effect on OCB Organisation and Academic Enthusiasm of the faculties moderates this relationship	Supported
SM.H8	OCB Organisation has a positive effect on Institutional Excellence and Academic Enthusiasm of the faculties moderates this relationship	Supported
	Serial mediating effect hypothesis	
SM.H9	The relationship between sustainable HRM ecosystem and institutional excellence is serially mediated by OCB Individual and OCB Organisation.	Mediation Supported
	Moderated mediation effect hypothesis	
SM.H10	Academic Enthusiasm of the faculties moderate the serially mediated between sustainable HRM ecosystem and institutional excellence through OCB Individual and OCB Organisation	Moderated Mediation Supported

SM.H1 to SM.H10 indicates SEM hypotheses including mediation and moderation hypotheses

7.4 Conclusion

The findings presented in this chapter collectively confirm that the Sustainable Human Resource Management Ecosystem is a strong driver of Institutional Excellence in Government-Aided Higher Education Institutions in Kerala, both through direct structural influence and through behavioural mechanisms. The structural results support the key direct relationships, establishing that sustainable human resource systems strengthen Organizational Citizenship Behaviour at the Individual level, which in turn contributes to Organizational Citizenship Behaviour at the Organisational level, ultimately enhancing Institutional Excellence. The measurement model results further justify that all constructs possess satisfactory psychometric properties, as evidenced through acceptable model fit indices and strong reliability, convergent validity, and discriminant validity, thereby strengthening the credibility of subsequent structural inferences.

Most importantly, the chapter demonstrates that academic enthusiasm meaningfully conditions how institutional systems translate into behavioural and excellence outcomes. While the direct path from Sustainable Human Resource Management Ecosystem to Institutional Excellence is not significantly different across academic enthusiasm groups, the remaining behavioural pathways show clear group differences, indicating that enthusiasm amplifies the conversion of institutional support into citizenship behaviours and the translation of citizenship culture into excellence. The bootstrapped results confirm partial serial mediation in both groups, but the indirect pathway becomes substantially stronger when academic enthusiasm is high, and the model-level moderation and heterogeneity evidence further support the presence of moderated mediation. Overall, the chapter concludes that institutional excellence emerges most powerfully when sustainable systems and faculty enthusiasm operate together, implying that policy and administrative strategies should simultaneously strengthen sustainable human resource structures and cultivate academic enthusiasm to fully activate the behavioural pathway leading to excellence.

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PART IV

SYNTHESIS, FINDINGS, AND STRATEGIC OUTCOMES

Chapter 8: **Major Findings and Discussion**

Chapter 9: **Implications, Recommendations, and Limitations of the study**

Chapter 10: **Conclusion and Scope for Further Research**

Chapter 8

FINDINGS OF THE STUDY

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Chapter 8

FINDINGS OF THE STUDY

This chapter presents the study's findings from the analysis addressing the research objectives. The results are arranged according to the study's goals. It aims to provide insights into the Sustainable Human Resource Management Ecosystem within Government-Aided Higher Educational Institutions in Kerala, based on teachers' experiences, and is organized to highlight the main areas investigated.

8.1 Findings for First Objective

- **To examine the Sustainable Human Resource Management (SHRM) ecosystem within Government-Aided Higher Educational Institutions in Kerala, as experienced by college teachers**.

The attainment of the objective related to the Sustainable Human Resource Management (SHRM) system in higher education institutions in Kerala is examined through two major components: Psycho-Social Workplace Milieu and Employee Synergising Dynamics. These two components together explain how the work environment, leadership practices, and interpersonal relationships influence the sustainability of human resource practices. While the psycho-social workplace milieu focuses on institutional support systems and work conditions, employee synergising dynamics reflect the level of harmony, cooperation, and emotional attachment among faculty members. Analysing these dimensions provides a comprehensive understanding of how teachers experience sustainable HR practices in their day-to-day professional lives.

8.1.1 Psycho-Social Workplace Milieu

8.1.1.1 Extent of Psycho-Social Workplace Milieu

a) Highest Role Clarity Existing Among Employees of Government-Aided Colleges

Employees showed the strongest level of agreement regarding clarity in their job duties and responsibilities. This indicates that staff members generally know what is

expected from them, what tasks they must perform, and how their roles fit within the institution. Such clarity helps reduce confusion, prevents overlapping responsibilities, and supports the smoother functioning of academic and administrative activities.

b) Strong Job Autonomy Present Among Employees

Employees indicated a high level of agreement that they have freedom in performing their work. Many feel they can make decisions related to their responsibilities and carry out tasks independently. This reflects that institutions allow staff to exercise professional judgment and discretion while fulfilling their duties.

c) Positive Supportive Work Climate Existing in Institutions

Responses indicate that employees mostly view their work environment as supportive and collaborative. They believe help, guidance, and assistance are accessible when necessary. This implies that workplace relationships are fairly healthy and employees do not feel isolated in their roles.

d) Moderate Leadership Quality Observed in Colleges

Perceptions regarding leadership fall in the middle range compared to other workplace factors. Employees view leadership as acceptable and functional, but not as strongly as the highest-rated aspects. This indicates that leadership practices are viewed as satisfactory, but not among the most positively perceived areas.

e) Lower Level of Recognition and Motivation Present Among Employees

Compared with other factors, employees expressed relatively lower agreement about appreciation and rewards for their work. This suggests that recognition systems may not be as visible or consistent as other workplace features. While recognition exists, it is not perceived as strongly as role clarity or autonomy.

f) Lowest Perceived Fairness and Inclusiveness Existing in Institutions

Among the aspects studied, fairness, equality, and inclusiveness received the least agreement. This indicates that employees view this area less positively than others. It suggests that issues related to equal treatment, impartiality, or inclusiveness may not be perceived as strongly established within institutions.

g) Overall Workplace Conditions Existing Above the Expected Level

Across all areas examined, employees' responses show that workplace conditions are generally viewed positively rather than negatively. Every aspect studied received agreement above the expected standard, indicating that staff perceptions of their work environment are satisfactory overall, even though some factors are stronger than others

8.1.1.2 Psycho-Social Workplace Milieu across Organizational Properties

8.1.1.2.1 Sustainable Human Resource Management Ecosystem Across Types of Management

- **Stronger Supportive Work Climate Existing in Non-Minority Institutions**

Employees from non-minority institutions expressed more positive views of their workplace supportiveness than those from minority institutions. This indicates that staff in non-minority colleges generally experience better cooperation, assistance, and institutional support in their work environment.

- **Similar Level of Fairness and Inclusiveness Exists in Both Types of Institutions**

Employees from minority and non-minority institutions expressed nearly similar perceptions regarding fairness, equality, and inclusiveness. This shows that both categories of institutions appear to maintain comparable practices related to equal treatment and impartiality.

- **Higher Job Autonomy Existing in Non-Minority Institutions**

Staff working in non-minority institutions reported greater freedom in performing their duties than those in minority institutions. This suggests that employees in these institutions experience more independence in carrying out responsibilities and making work-related decisions.

- **Better Leadership Environment Existing in Non-Minority Institutions**

Employees from non-minority colleges expressed more favourable perceptions about leadership practices compared to those from minority institutions. This

indicates that leadership in non-minority institutions is viewed as relatively more participative and effective.

- **Greater Role Clarity Existing in Non-Minority Institutions**

Employees in non-minority institutions reported clearer understanding of their roles and responsibilities than those in minority institutions. This suggests that job expectations and responsibilities may be communicated more clearly in these institutions.

- **Higher Recognition and Motivation Existing in Non-Minority Institutions**

Staff members from non-minority institutions indicated better experiences regarding appreciation and encouragement for their work compared to minority institutions. This shows that recognition practices appear relatively stronger in non-minority colleges.

- **Institutional Type Influencing Several Workplace Dimensions**

The comparison shows that type of management is associated with differences in multiple workplace factors. In most areas examined, employees from non-minority institutions expressed more positive perceptions than those from minority institutions, while fairness and inclusiveness remained similar across both.

8.1.1.2.2 Sustainable Human Resource Management Ecosystem Across NAAC Grades

- **Stronger Supportive Work Climate Existing in A++ Institutions Compared to A+ and A Institutions**

Employees in A++ grade institutions expressed more positive views about workplace support than those in A+ and A grade institutions. This shows that top-graded institutions tend to provide a more encouraging and cooperative work environment than mid-graded institutions.

- **Similar Supportive Climate Existing Between A++ and Below-A Institutions**

Employees in A++ and below-A institutions showed comparable perceptions regarding workplace support. This indicates that both these categories, despite

different accreditation levels, display similar levels of perceived institutional support.

- **Lower Perceived Fairness Existing in A Grade Institutions Compared to Higher Grades**

Employees in A-grade institutions showed weaker perceptions of fairness and inclusiveness than those in A++ and A+ institutions. This suggests that staff in mid-graded institutions perceive comparatively lower levels of equality and impartiality.

- **Higher Job Autonomy Existing in Below-A Institutions Compared to Other Grades**

Employees from below-A institutions expressed stronger agreement about freedom in performing their duties than those from A++, A+, and A institutions. This indicates that staff in these institutions feel comparatively greater independence in their work roles.

- **Leadership Perceptions Remaining Similar Across All NAAC Grades**

Employees across all grade categories expressed nearly similar views about leadership. This shows that leadership practices are perceived similarly across institutional grades.

- **Lower Role Clarity Existing in A Grade Institutions Compared to Other Grades**

Employees in A-grade institutions reported weaker agreement regarding the clarity of duties and responsibilities than those in other grade categories. This suggests that clarity of job expectations may be less consistent in these institutions.

- **Stronger Recognition Practices Existing in A++ Institutions**

Employees in A++ institutions expressed more positive views about appreciation and encouragement for their work than those in other grades. This indicates that recognition practices appear stronger in top-graded institutions.

- **Institutional Grade Influencing Multiple Workplace Conditions**

The comparison shows that the NAAC grade is associated with differences in several workplace aspects. Some factors are stronger in higher-graded institutions, others in lower-graded institutions, and a few remain similar across all grades.

8.1.1.2.3 Sustainable Human Resource Management Ecosystem Across Autonomous Status

- **Similar Supportive Work Climate Existing in Both Autonomous and Non-Autonomous Institutions**

Employees from both types of institutions expressed nearly the same level of agreement regarding workplace support. This indicates that staff in autonomous and non-autonomous colleges experience comparable levels of cooperation, assistance, and institutional support.

- **Higher Perceived Fairness and Inclusiveness Exist in Autonomous Institutions**

Employees in autonomous institutions expressed more positive views regarding fairness, equality, and inclusiveness than those in non-autonomous institutions. This shows that staff in autonomous colleges perceive stronger practices regarding impartiality and equal treatment.

- **Greater Job Autonomy Existing in Non-Autonomous Institutions**

Employees from non-autonomous institutions showed stronger agreement with the freedom to perform their duties than those from autonomous institutions. This suggests that staff in non-autonomous colleges feel they have greater independence in carrying out their responsibilities.

- **Stronger Leadership Support Exists in Non-Autonomous Institutions**

Employees in non-autonomous institutions expressed more favourable views about leadership practices than those in autonomous institutions. This indicates that leadership is perceived as more supportive or effective in non-autonomous settings.

- **Similar Role Clarity Exists Across Both Types of Institutions**

Responses show that employees in autonomous and non-autonomous institutions perceive their duties and responsibilities with nearly equal clarity. This suggests that expectations and job responsibilities are communicated similarly in both categories.

- **Comparable Recognition Practices Existing in Both Institutional Types**

Employees from both groups expressed similar views regarding appreciation and encouragement for their work. This indicates that recognition systems appear to function at a similar level regardless of autonomy status.

- **Institutional Autonomy Showing Mixed Influence on Workplace Conditions**

The comparison shows that autonomy status is associated with differences in some workplace aspects but not in all. Certain factors differ between autonomous and non-autonomous institutions, while others remain similar across both.

8.1.1.2.4 Sustainable Human Resource Management Ecosystem Across Gender Composition

- **Stronger Supportive Work Climate Existing in Institutions with an Unbalanced Gender Composition**

Employees in institutions with an unbalanced gender composition expressed slightly more positive views about workplace support than those in gender-balanced institutions. This shows that staff in these institutions perceive their work environment as somewhat more supportive and cooperative.

- **Similar Perceptions of Fairness Exist in Both Types of Institutions**

Employees from both balanced and unbalanced institutions expressed nearly identical views on fairness, equality, and inclusiveness. This indicates that perceptions of impartial treatment do not differ noticeably by gender composition.

- **Similar Level of Job Autonomy Existing Across Gender Composition Groups**

Staff in both categories reported almost identical views on the freedom to perform their work. This suggests that independence in job responsibilities is

experienced similarly regardless of whether institutions have balanced or unbalanced gender representation.

- **Comparable Leadership Environment Existing in Both Institutional Types**

Employees across both groups shared nearly identical perceptions of leadership practices. This shows that leadership quality is viewed similarly in institutions irrespective of gender composition.

- **Similar Role Clarity Existing Across Gender Composition Categories**

Responses indicate that employees in both types of institutions perceive their duties and responsibilities with nearly equal clarity. This suggests that job expectations are communicated similarly, regardless of gender balance.

- **Comparable Recognition Practices Existing in Both Groups**

Employees from both categories expressed similar views regarding appreciation and encouragement for their work. This indicates that recognition systems function at a similar level across institutions, irrespective of gender composition.

- **Gender Composition Showing Limited Influence on Workplace Conditions**

The comparison shows that gender composition is associated with differences in only one workplace aspect, while all other areas remain similar. This indicates that gender balance does not appear to substantially affect most workplace experiences.

8.1.2 Employee Synergising Dynamics

8.1.2.1 Extent of Employee Synergising Dynamics

- **Highest Job Commitment Existing Among Employees**

Employees showed the highest level of agreement with their commitment to their work. This indicates that staff typically feel dedicated and take their roles and the institution's objectives seriously.

- **Strong Teamwork and Cooperation Exist Among Employees**

Employees strongly agreed with teamwork and cooperation. This indicates that staff members generally work well together, support one another, and maintain collaborative relationships in the workplace.

- **Positive Level of Job Satisfaction Existing Among Employees**

Employees expressed positive perceptions of their job experiences, indicating that they are generally satisfied with their working conditions, responsibilities, and overall environment.

- **Comparatively Lower but Positive Trust in Management Exists Among Employees**

Trust in management received the lowest level of agreement among the four factors, though it remained positive. This indicates that employees generally trust institutional leadership, but this trust is perceived slightly less strongly than commitment, teamwork, and satisfaction.

- **All Employee Synergizing Factors Existing Above the Expected Level**

Across all four aspects studied, employees reported levels above the expected standard. This indicates that staff perceptions of commitment, teamwork, satisfaction, and trust are generally positive within these institutions.

8.1.2.2 Employee Synergising Dynamics across Socio-Demographic and Organizational Characteristics

8.1.2.2.1 Employee Synergizing Dynamics Across Gender

- **Higher Job Satisfaction Exists Among Female Employees**

Female employees reported more positive perceptions of their job experience compared to male employees. This suggests that women tend to feel more satisfied with their working conditions and roles within their organizations.

- **Stronger Job Commitment Exists Among Female Employees**

Female employees demonstrated a greater level of work commitment compared to male employees, indicating that women generally feel more dedicated and engaged in their professional roles.

- **Greater Teamwork and Cooperation Exist Among Female Employees**

Female employees reported more positive perceptions of teamwork and cooperation than male employees. This indicates that women tend to experience stronger collaboration and more supportive working relationships.

- **Higher Trust in Management Exists Among Female Employees**

Female employees expressed more favourable views of trust in institutional leadership than male employees. This indicates that women tend to have greater confidence in management practices and decisions.

- **Gender Showing Clear Influence on Employee Synergy Levels**

Across all four aspects studied, female employees reported more positive perceptions than male employees. This indicates that employee synergy experiences vary noticeably between genders rather than remaining similar.

8.1.2.2.2 Employee Synergizing Dynamics Across Age

- **Similar Job Satisfaction Exists Across Age Groups**

Employees below and above 80 years expressed nearly similar views about their job experience. This indicates that satisfaction with work conditions and responsibilities does not differ noticeably between younger and older employees.

- **Comparable Job Commitment Existing Between Younger and Older Employees**

Both age groups showed similar levels of commitment to their work. This suggests that dedication and a sense of responsibility for institutional duties remain consistent across ages.

- **Stronger Teamwork Exists Among Employees Above 80 Years**

Employees over 80 expressed more positive views on teamwork and cooperation than those under 80. This suggests that older employees perceive stronger collaborative relationships and team coordination in their workplace.

- **Similar Trust in Management Existing Across Age Categories**

Employees from both age groups reported nearly equal levels of trust in institutional leadership. This suggests that confidence in management practices does not vary significantly by age.

- **Age Showing Influence Only on Teamwork Perceptions**

Among all the factors studied, age-related variation was observed only in teamwork and cooperation, while the other aspects remained similar across age groups. This indicates that age differences do not broadly affect most employee synergy experiences.

8.1.2.2.3 Employee Synergizing Dynamics Across Experience

- **Employees with over 10 years of experience generally report higher job satisfaction.**

Employees with longer tenure tend to have more positive opinions about their jobs compared to those with less experience. This suggests that staff with more years of service usually feel more satisfied with their work environment and responsibilities.

- **Stronger Job Commitment Exists Among More Experienced Employees**

Employees with over 10 years of experience showed greater work commitment compared to those with less experience. This indicates that extended tenure is associated with greater dedication to institutional duties.

- **Greater Teamwork Existing Among Employees with Higher Experience**

Employees with more experience expressed more positive perceptions of teamwork and cooperation than those with fewer years of experience. This suggests that experienced staff tend to perceive stronger collaboration and coordination in their workplace.

- **Higher Trust in Management Exists Among More Experienced Employees**

Employees with more than 10 years of experience expressed more favourable views of trust in institutional leadership than those with less experience. This suggests that confidence in management tends to be stronger among long-serving employees.

- **Experience Showing Clear Influence on All Employee Synergy Factors**

Employees with over 10 years of experience tend to perceive workplace synergy more positively than those with fewer years. This suggests that greater work experience is associated with clearer differences in workplace harmony.

8.1.2.2.4 Employee Synergizing Dynamics Across the Stream of Study

- **Higher Job Satisfaction Exists Among Employees in Commerce Stream Institutions**

Employees working in commerce stream institutions expressed more positive views of their jobs than those in arts and science institutions. This indicates that staff in commerce colleges generally report higher job satisfaction than employees in the other streams.

- **Stronger Job Commitment Exists Among Employees in Commerce Stream Institutions**

Employees from commerce institutions showed stronger commitment to their work than those in arts institutions, while their views were similar to those in science institutions. This indicates that dedication to work is comparatively stronger in commerce-related institutions.

- **Stronger Teamwork Existing in Science and Commerce Stream Institutions Than in Arts Institutions**

Employees in science and commerce institutions expressed more positive views of teamwork and cooperation than those in arts institutions. This suggests that collaborative work relationships appear stronger in science and commerce environments.

- **Higher Trust in Management Exists Among Employees in Commerce Stream Institutions**

Employees in commerce institutions expressed more favourable views of trust in management than those in arts institutions, while their views were similar to those in science institutions. This indicates that confidence in leadership appears stronger in commerce institutions.

- **Stream of Study Showing Clear Influence on Employee Synergy Levels**

Differences were noted across all four aspects examined among the streams. Commerce institutions generally held more positive perceptions in various areas, whereas arts institutions tended to have lower perceptions in several aspects. This suggests that the employee synergy experience varies across academic streams.

8.1.2.2.5 Employee Synergizing Dynamics Across Designation

- **Similar Job Satisfaction Exists Across All Designations**

Assistant professors, associate professors, and professors expressed nearly identical views about their job experience. This indicates that satisfaction with work conditions and responsibilities does not differ significantly by academic rank.

- **Comparable Job Commitment Existing Across Designation Levels**

Employees across all designations demonstrated similar levels of commitment to their work. This suggests that dedication to professional responsibilities remains consistent across positions.

- **Similar Teamwork Exists Among All Faculty Ranks**

Employees across designations shared nearly identical perceptions of teamwork and cooperation. This shows that collaborative work relationships are experienced similarly by assistant professors, associate professors, and professors.

- **Comparable Trust in Management Existing Across Designations**

Responses indicate that employees at various academic levels share similar views on trust in the institution's leadership. This implies that confidence in management remains relatively consistent regardless of their specific rank.

- **Designation Showing No Influence on Employee Synergy Factors**

Perceptions across all four aspects studied were consistent among employees regardless of designation. This suggests that academic rank does not influence experiences of workplace synergy.

8.1.2.2.6 Employee Synergizing Dynamics Across Monthly Gross Income

- **Higher Job Satisfaction Exists Among Employees with Income Above 100000**

Employees earning above 100000 expressed more positive views about their job than those earning below this level. This shows that higher-income employees generally feel more satisfied with their work conditions and roles.

- **Stronger Job Commitment Exists Among Higher-Income Employees**

Employees with incomes above 100000 showed stronger commitment to their work than those with lower incomes. This suggests that employees receiving higher pay tend to feel more dedicated to their responsibilities.

- **Similar Teamwork Existing Across Income Groups**

Employees across both income groups shared similar perspectives on teamwork and collaboration. This indicates that the experience of working cooperatively is consistent across income levels.

- **Comparable Trust in Management Existing Across Income Levels**

Responses indicate that employees with lower and higher incomes have almost equal levels of trust in management. This shows that confidence in institutional leadership does not vary noticeably by income.

- **Income Showing Influence Only on Selected Employee Synergy Factors**

Differences between income groups were observed only in job satisfaction and commitment, while teamwork and trust remained similar. This indicates that income level affects some aspects of employee synergy but not all.

8.1.2.2.7 Employee Synergizing Dynamics Across Domicile of the Institution

- **Higher Job Satisfaction Existing in Semi-Urban Institutions**

Employees in semi-urban institutions expressed more positive views of their jobs than those in urban and rural institutions. This indicates that staff in semi-urban colleges generally experience higher satisfaction with their work environments than those in other locations.

- **Similar Job Satisfaction Exists Between Urban and Rural Institutions**

Employees in urban and rural institutions expressed nearly identical views about their job experience. This indicates that satisfaction levels do not differ noticeably between these two location categories.

- **Comparable Job Commitment Existing Across All Locations**

Employees from urban, semi-urban, and rural institutions reported similar levels of work commitment. This shows that dedication to professional responsibilities remains consistent regardless of institutional location.

- **Similar Teamwork Existing Across Domicile Categories**

Responses show that employees at all three locations report similar levels of teamwork and cooperation. This implies that the quality of collaborative working relationships is consistent across the institution's different sites.

- **Comparable Trust in Management Existing Across Institutional Locations**

Employees in urban, semi-urban, and rural institutions expressed similar views on trust in management. This indicates that confidence in institutional leadership is not noticeably influenced by location.

- **Institutional Location Showing Influence Only on Job Satisfaction**

Differences across locations were observed only in job satisfaction, while commitment, teamwork, and trust remained similar. This indicates that institutional domicile affects one aspect of the workplace experience but not the others.

8.1.2.2.8 Employee Synergizing Dynamics Across NAAC Grade

- **Higher Job Satisfaction Exists in B++ and Above Institutions**

Employees in institutions with B++ or higher grades expressed the most positive views about their jobs compared with those in other grade categories. This indicates that staff in higher-graded institutions generally experience greater job satisfaction than those in lower-graded institutions.

- **Similar Job Satisfaction Exists Between Not Accredited and Highest-Graded Institutions**

Employees at nonaccredited institutions and those at B++-level or higher institutions expressed nearly identical views on job satisfaction. This indicates that satisfaction levels in these two categories are comparable despite differences in accreditation status.

- **Lower Job Satisfaction in B Grade Institutions**

Employees at B-grade institutions expressed fewer positive views of their jobs than those in several other grade categories. This indicates that satisfaction levels are comparatively lower in these institutions.

- **Similar Job Commitment Existing Across All NAAC Grades**

Employees across all grade categories expressed nearly identical levels of commitment to their work. This indicates that dedication to professional responsibilities remains consistent across institutional grades.

- **Stronger Teamwork Existing in B++ and Above Institutions**

Employees in higher-grade institutions reported more positive perceptions of teamwork and cooperation than those in some lower-grade institutions. This shows that collaborative work relationships appear stronger in top-graded institutions.

- **Lower Teamwork Existing in B+ Institutions**

Employees in B+ grade institutions expressed fewer positive views about teamwork than employees in other grade categories. This indicates that collaborative experiences are perceived less strongly in these institutions.

- **Higher Trust in Management Existing in Not Accredited Institutions Compared to Some Accredited Grades**

Employees at not accredited institutions expressed more positive views about trust in management than those at B- and B+-grade institutions. This shows that confidence in leadership appears stronger in these institutions than in certain accredited categories.

- **NAAC Grade Showing Influence on Selected Employee Synergy Factors**

Differences across NAAC grades were observed in job satisfaction, teamwork, and trust in management, whereas job commitment remained consistent across grades. This suggests that the accreditation level influences certain facets of employee synergy but not all.

8.1.2.2.9 Employee Synergizing Dynamics Across Types of Management

- **Higher Job Satisfaction Exists in Non-Minority Institutions**

Employees in non-minority institutions expressed more positive views of their jobs than those in minority institutions. This shows that staff at non-minority colleges generally experience greater satisfaction with their work environments.

- **Stronger Job Commitment Existing in Non-Minority Institutions**

Employees at non-minority institutions reported greater work commitment than those at minority institutions. This suggests that dedication to professional responsibilities is perceived as higher in non-minority institutions.

- **Greater Teamwork Existing in Non-Minority Institutions**

Employees in non-minority institutions expressed more favourable perceptions regarding teamwork and cooperation than those in minority institutions. This indicates that collaborative work relationships appear stronger in non-minority institutions.

- **Higher Trust in Management Existing in Non-Minority Institutions**

Employees at non-minority institutions expressed more positive views about trust in management than those at minority institutions. This shows that confidence in leadership appears stronger in non-minority institutions.

- **Type of Management Showing Clear Influence on All Employee Synergy Factors**

Across all four aspects studied, employees from non-minority institutions expressed more positive perceptions than those from minority institutions. This indicates that management type is associated with differences in workplace experiences.

8.1.3 Conclusion

The study found that the work environment in government-aided colleges in Kerala is largely positive and supportive for faculty members. Teachers generally feel comfortable and secure in their roles, with clear expectations, autonomy in their work, and good leadership support. However, there are areas for improvement, especially in fairness and equal recognition across institutions. Faculty members in

non-minority institutions, higher-ranked colleges, and autonomous institutions generally report better experiences, while minority-managed institutions and mid-tier colleges have more room for improvement. The study also shows that personal factors like gender, age, experience, and income affect how connected and supported faculty feel. In conclusion, while most teachers have a positive experience, focusing on fairness, recognition, and inclusiveness can help improve faculty satisfaction and overall institutional effectiveness.

8.2 Findings for Second Objective

- **To investigate the Organizational Citizenship Behavior – Individual and Organization (OCB-I and O), and its influence by personality traits, scientific temper, academic enthusiasm, and demographic background of college teachers in Kerala**

This objective is analyzed in four parts, focusing on how Organizational Citizenship Behaviour (OCB-I and O) relates to factors like scientific temper, personality traits, academic enthusiasm, and organizational features. The study investigates how each factor impacts the two aspects of OCB—OCB-I (Individual) and OCB-O (Organizational). By exploring these connections, it seeks to deepen the understanding of how individual actions and organizational culture drive academic and institutional success.

8.2.1 Level of OCB and Its Association with Scientific Temper

The study sought to understand how different aspects of scientific temper, such as rationality, curiosity, open-mindedness, respect for diversity, and a problem-solving attitude, shape faculty members' behaviours in terms of altruism, courtesy, sportsmanship, civic virtue, and conscientiousness.

8.2.1.1 Association Between Rationality and OCB Dimensions

8.2.1.1.1 Association Between Rationality and Altruism Among Teachers

- **Higher Altruism Existing Among Teachers with High Rationality**

Teachers who showed higher levels of rational thinking also displayed much stronger altruistic behaviour. A large majority of highly rational teachers fall into the

high-altruism category, indicating that rational thinking is closely linked to willingness to help others and to contribute voluntarily.

- **Lower Altruism Existing Among Teachers with Low Rationality**

Teachers with lower levels of rationality are mostly found in the low-altruism category. This shows that when rational thinking is weaker, voluntary helping behaviour and selfless actions are also less prominent.

- **Clear Behavioural Contrast Existing Between Rationality Levels**

The pattern shows a strong contrast between the two groups. High rationality is mostly associated with high altruism, while low rationality is mostly associated with low altruism. This indicates a clear difference in behavioural tendencies based on the level of rational thinking.

- **Rationality Showing Strong Influence on Altruistic Behaviour**

The distribution pattern shows that rational thinking is closely linked to altruistic behaviour. Teachers who think more logically and critically tend to show stronger helping and cooperative behaviours.

- **Rational Thinking Emerging as an Important Behavioural Driver**

The findings indicate that rationality is not only a cognitive trait but also influences how teachers behave toward others in the workplace. This suggests that rational thinking is associated with positive interpersonal conduct.

8.2.1.1.2 Association Between Rationality and Courtesy

- **Higher Courtesy Existing Among Teachers with High Rationality**

Teachers who show higher rational thinking also display more courteous behaviour. Most teachers in the high-rationality group fall into the high-courtesy category, suggesting that logical and thoughtful thinking is associated with respectful interaction.

- **Lower Courtesy Existing Among Teachers with Low Rationality**

Teachers with lower rationality are mostly found in the low courtesy category. This shows that when rational thinking is weaker, polite and considerate behaviour is also less prominent.

- **Clear Behavioural Contrast Existing Between Rationality Levels**

The pattern shows a robust difference between the two groups. High rationality is mainly associated with high courtesy, while low rationality is mainly associated with low courtesy. This indicates a distinct behavioural difference based on the level of rational thinking.

- **Rational Thinking Showing Strong Influence on Courteous Behaviour**

The distribution pattern shows that rationality is closely linked to courteous conduct. Teachers who think more logically tend to show more respectful and cooperative interactions with others.

8.2.1.1.3 Association Between Rationality and Virtue

- **Higher Virtue Existing Among Teachers with High Rationality**

Teachers with higher levels of rational thinking show stronger levels of virtue. Most teachers in the high-rationality group fall into the high-virtue category, indicating that rational thinking is associated with ethical and principled behaviour.

- **Lower Virtue Existing Among Teachers with Low Rationality**

Teachers with lower rationality are mostly found in the low virtue category. This shows that when rational thinking is limited, moral and ethical behavioural tendencies are also weaker.

- **Clear Behavioural Difference Exists Between Rationality Groups**

The contrast between the two groups is clear. High rationality is primarily associated with high virtue, whereas low rationality is primarily associated with low virtue. This indicates a consistent pattern in behavioural tendencies.

- **Rational Thinking Showing Strong Connection with Ethical Conduct**

The data shows that rational thinking is strongly linked to virtuous behaviour. Teachers with better reasoning skills also tend to uphold higher ethical standards.

8.2.1.1.4 Association Between Rationality and Sportsmanship

- **Higher Sportsmanship Among Teachers with High Rationality**

Teachers with higher rational thinking exhibit stronger sportsmanship behaviour. Most individuals in the high-rationality group fall into the high-sportsmanship category, indicating that rational thinking is linked to fairness and cooperative conduct.

- **Lower Sportsmanship Existing Among Teachers with Low Rationality**

Teachers with lower rationality are mainly found in the low sportsmanship category. This shows that weaker rational thinking is associated with lower levels of cooperative and positive behaviour.

- **Clear Behavioural Difference Exists Between Rationality Groups**

The pattern shows a clear contrast between the two groups. High rationality aligns with high sportsmanship, while low rationality aligns with low sportsmanship, indicating a consistent relationship.

- **Rational Thinking Showing Strong Link with Cooperative Behaviour**

The distribution pattern indicates that rational thinking is closely linked to fair and constructive interaction. Teachers who think more rationally tend to demonstrate stronger teamwork attitudes.

8.2.1.1.5Association Between Rationality and Conscientiousness

- **Higher Conscientiousness Existing Among Teachers with High Rationality**

Teachers with higher rational thinking exhibit stronger conscientious behaviour. A majority of teachers in the high-rationality group fall into the high-conscientiousness category, indicating that rational thinking is associated with responsibility and careful work habits.

- **Lower Conscientiousness Existing Among Teachers with Low Rationality**

Teachers with lower rationality are mostly found in the low conscientiousness category. This shows that when rational thinking is weaker, responsible and disciplined behaviour is also less evident.

- **Clear Behavioural Difference Exists Between Rationality Levels**

The pattern shows a clear difference between the two groups. High rationality is associated with higher conscientiousness, whereas low rationality is associated with lower conscientiousness.

- **Rational Thinking Showing Connection with Responsible Work Behaviour**

The distribution suggests that rational thinking is associated with careful, disciplined work conduct. Teachers who demonstrate stronger reasoning abilities tend to show greater responsibility in their professional roles.

8.2.1.2 Association Between Curiosity or Inquiry and OCB Dimensions

8.2.1.2.1 Association Between Curiosity or Inquiry and Altruism

- **Higher Altruism Existing Among Teachers with High Curiosity**

Teachers with stronger curiosity and inquiry tendencies exhibit much higher levels of altruistic behaviour. Most teachers in the high-curiosity group fall into the high-altruism category, indicating that inquisitiveness is closely linked with helping and supportive behaviour.

- **Lower Altruism Existing Among Teachers with Low Curiosity**

Teachers with lower curiosity are mostly found in the low altruism category. This shows that when curiosity is limited, voluntary helping behaviour is also less prominent.

- **Clear Behavioural Contrast Existing Between Curiosity Levels**

The pattern shows a strong difference between the two groups. High curiosity is mainly associated with high altruism, while low curiosity is mainly associated with low altruism. This indicates a clear behavioural difference based on inquiry tendency.

- **Curiosity Showing Strong Influence on Helping Behaviour**

The distribution pattern indicates that curiosity is closely linked to altruistic behaviour. Teachers who actively explore and seek knowledge tend to be more willing to assist others.

8.2.1.2.2 Association Between Curiosity or Inquiry and Courtesy

- **Higher Courtesy Existing Among Teachers with High Curiosity**

Teachers with stronger curiosity exhibit more courteous behaviour. Most individuals in the high-curiosity group fall into the high-courtesy category, suggesting that inquisitiveness is associated with respectful interaction.

- **Lower Courtesy Existing Among Teachers with Low Curiosity**

Teachers with lower curiosity are mostly found in the low courtesy category. This shows that reduced curiosity is associated with less courteous behaviour.

- **Clear Behavioural Difference Exists Between Curiosity Groups**

High curiosity is mainly linked with high courtesy, while low curiosity is mainly linked with low courtesy. This indicates a consistent behavioural contrast between the two groups.

- **Curiosity Showing Strong Link with Respectful Behaviour**

The pattern suggests that curiosity is closely related to polite and considerate conduct. Teachers who seek knowledge actively tend to display more positive interpersonal behaviour.

8.2.1.2.3 Association Between Curiosity or Inquiry and Virtue

- **Higher Virtue Existing Among Teachers with High Curiosity**

Teachers with strong curiosity exhibit higher levels of virtuous behaviour. Most teachers in the high-curiosity group fall into the high-virtue category, indicating that an inquiry tendency is linked with ethical conduct.

- **Lower Virtue Existing Among Teachers with Low Curiosity**

Teachers with lower curiosity are mostly found in the low virtue category. This shows that reduced curiosity is associated with weaker ethical behaviour.

- **Clear Behavioural Difference Exists Between Curiosity Levels**

High curiosity aligns mainly with high virtue, while low curiosity aligns mainly with low virtue. This indicates a clear difference in behavioural tendencies across inquiry levels.

- **Curiosity Showing Strong Connection with Ethical Behaviour**

The distribution suggests that curiosity is closely linked to moral and principled conduct. Teachers who actively explore ideas tend to demonstrate stronger ethical standards.

8.2.1.2.4 Association Between Curiosity or Inquiry and Sportsmanship

- **Higher Sportsmanship Existing Among Teachers with High Curiosity**

Teachers with strong curiosity exhibit higher levels of sportsmanship. Most individuals in the high-curiosity group fall into the high sportsmanship category, suggesting that curiosity is associated with fairness and cooperative behaviour.

- **Lower Sportsmanship Existing Among Teachers with Low Curiosity**

Teachers with lower curiosity are mostly found in the low sportsmanship category. This shows that reduced curiosity is associated with weaker cooperative behaviour.

- **Clear Behavioural Difference Exists Between Curiosity Levels**

High curiosity is mainly associated with high sportsmanship, while low curiosity is mainly associated with low sportsmanship. This indicates a strong behavioural contrast.

- **Curiosity Showing Strong Link with Cooperative Interaction**

The pattern suggests that curiosity is closely linked to fair and constructive interaction. Teachers who actively inquire tend to demonstrate stronger teamwork.

8.2.1.2.5 Association Between Curiosity or Inquiry and Conscientiousness

- **Higher Conscientiousness Existing Among Teachers with High Curiosity**

Teachers with stronger curiosity show higher conscientiousness. Most individuals in the high-curiosity group fall into the high-conscientiousness category, indicating that curiosity is associated with responsible work habits.

- **Lower Conscientiousness Existing Among Teachers with Low Curiosity**

Teachers with lower curiosity are mostly found in the low conscientiousness category. This shows that reduced curiosity is associated with weaker responsibility and diligence.

- **Clear Behavioural Difference Exists Between Curiosity Groups**

High curiosity is mainly associated with high conscientiousness, whereas low curiosity is mainly associated with low conscientiousness. This indicates a clear behavioural distinction.

- **Curiosity Showing Connection with Responsible Work Behaviour**

The distribution indicates that curiosity is linked to proper and disciplined professional behaviour. Teachers who proactively pursue knowledge generally exhibit greater responsibility in their roles.

8.2.1.3 Association Between Open-Mindedness and OCB Dimensions

8.2.1.3.1 Association Between Open-Mindedness and Altruism

- **Greater Altruism Found Among Open-Minded Teachers**

Teachers who are more receptive to new ideas and perspectives show significantly higher levels of altruistic behaviour. Most in this group fall into the high altruism category, suggesting that openness to ideas is strongly connected to helping behaviour.

- **Lower Altruism Existing Among Teachers with Limited Open-Mindedness**

Teachers with lower openness are mostly placed in the low altruism category. This indicates that when openness is limited, voluntary helping behaviour is also less evident.

- **Clear Behavioural Difference Exists Between Open-Mindedness Levels**

A clear contrast exists between the two groups. Higher openness aligns mainly with higher altruism, while lower openness aligns mainly with lower altruism. This pattern indicates a strong behavioural distinction.

8.2.1.3.2 Association Between Open-Mindedness and Courtesy

- **Higher Courtesy Existing Among Teachers with Strong Open-Mindedness**

Teachers who are more open-minded exhibit higher levels of courteous behaviour. Most individuals in this group fall into the high-courtesy category, indicating that openness is closely related to respectful interaction.

- **Lower Courtesy Existing Among Teachers with Limited Open-Mindedness**

Teachers with lower openness are primarily placed in the low-courtesy category. This indicates that reduced openness is linked to reduced politeness and consideration.

- **Clear Behavioural Difference Exists Between Openness Groups**

Higher openness is mostly associated with higher courtesy, whereas lower openness is mostly associated with lower courtesy. This reflects a strong behavioural difference between the groups.

8.2.1.3.3 Association Between Open-Mindedness and Virtue

- **Stronger Virtue Existing Among Teachers with Higher Open-Mindedness**

Teachers displaying greater openness are generally more likely to exhibit higher moral and ethical standards. Most individuals in this group fall into the high-virtue category.

- **Weaker Virtue Existing Among Teachers with Lower Open-Mindedness**

Teachers with limited openness are mostly placed in the low virtue category. This indicates that restricted openness is linked with weaker ethical conduct.

- **Clear Behavioural Difference Exists Between Openness Levels**

Higher openness aligns primarily with higher virtue, while lower openness aligns primarily with lower virtue. This pattern reveals a strong contrast between the groups.

8.2.1.3.4 Association Between Open-Mindedness and Sportsmanship

- **Stronger Sportsmanship Existing Among Teachers with Higher Open-Mindedness**

Teachers with greater openness show higher levels of fairness and cooperative behaviour. Most individuals in this group fall into the high sportsmanship category.

- **Lower Sportsmanship Existing Among Teachers with Lower Open-Mindedness**

Teachers with limited openness are primarily placed in the low sportsmanship category. This indicates that reduced openness is associated with weaker cooperative attitudes.

- **Clear Behavioural Difference Exists Between Openness Groups**

Higher openness is mostly associated with higher sportsmanship, while lower openness is mostly associated with lower sportsmanship. This indicates a strong behavioural gap.

8.2.1.3.5 Association Between Open-Mindedness and Conscientiousness

- **Stronger Conscientiousness Existing Among Teachers with Higher Open-Mindedness**

Teachers who show greater openness demonstrate higher levels of responsibility and diligence. Most individuals in this group fall into the high conscientiousness category.

- **Lower Conscientiousness Existing Among Teachers with Lower Open-Mindedness**

Teachers who exhibit limited openness tend to fall into the low conscientiousness category. This indicates that lower openness is linked to weaker work discipline.

- **Clear Behavioural Difference Exists Between Openness Levels**

Higher openness aligns mainly with higher conscientiousness, whereas lower openness aligns mainly with lower conscientiousness. This shows a clear behavioural distinction.

8.2.1.4 Association Between Diversity and OCB Dimensions

8.2.1.4.1 Association Between Diversity and Altruism

- **Higher Altruism Existing Among Teachers in High-Diversity Settings**

Teachers working in higher-diversity settings exhibit much stronger altruistic behaviour. In these settings, most teachers fall into the high-altruism category, indicating that diverse environments are linked to greater helping and supportive behaviour.

- **Lower Altruism Existing Among Teachers in Low-Diversity Settings**

Teachers working in low-diversity settings are mainly found in the low-altruism category. This indicates that when diversity exposure is limited, helping behaviour is also less evident.

- **Clear Behavioural Difference Exists Between Diversity Levels**

A strong contrast exists between the two groups. High diversity is associated mainly with high altruism, while low diversity is associated mainly with low altruism. This shows a clear difference in helping behaviour based on exposure to diversity.

8.2.1.4.2 Association Between Diversity and Courtesy

- **Higher Courtesy Existing Among Teachers in High Diversity Settings**

Teachers in more diverse settings exhibit more courteous behaviour. In these settings, most teachers fall into the high-courtesy category, indicating that exposure to diversity is linked to respectful interactions.

- **Lower Courtesy Existing Among Teachers in Low Diversity Settings**

Teachers in low-diversity settings are primarily placed in the low-courtesy category. This indicates that limited exposure to diversity is linked to reduced politeness and consideration.

- **Clear Behavioural Difference Exists Between Diversity Levels**

High diversity is associated mostly with high courtesy, while low diversity is associated mostly with low courtesy. This reflects a strong behavioural difference between the two settings.

8.2.1.4.3 Association Between Diversity and Virtue

- **Stronger Virtue Existing Among Teachers in High Diversity Settings**

Teachers in more diverse settings exhibit stronger virtues and ethical conduct. In these settings, most teachers fall into the high-virtue category, indicating that exposure to diversity is linked with stronger moral behaviour.

- **Weaker Virtue Existing Among Teachers in Low Diversity Settings**

Teachers in low-diversity settings are mostly in the low-virtue category. This indicates that limited exposure to diversity is associated with weaker virtue.

- **Clear Behavioural Difference Exists Between Diversity Levels**

High diversity aligns mainly with high virtue, while low diversity aligns mainly with low virtue. This shows a clear ethical behavioural contrast across diversity settings.

8.2.1.4.4 Association Between Diversity and Sportsmanship

- **Higher Sportsmanship Existing Among Teachers in High Diversity Settings**

Teachers in higher diversity settings show stronger sportsmanship. In these settings, high sportsmanship is more common, indicating that exposure to diversity is linked with fairness, cooperation, and a positive workplace attitude.

- **Lower Sportsmanship Existing Among Teachers in Low Diversity Settings**

Teachers in low-diversity settings are mostly placed in the low-sportsmanship category. This indicates that limited exposure to diversity is linked to weaker cooperative and fair behaviour.

- **Clear Behavioural Difference Exists Between Diversity Levels**

High diversity is mainly associated with higher sportsmanship, while low diversity is mainly associated with lower sportsmanship. This shows a clear behavioural gap.

8.2.1.4.5 Association Between Diversity and Conscientiousness

- **Higher Conscientiousness Existing Among Teachers in High Diversity Settings**

Teachers in more diverse settings show stronger conscientiousness and responsibility. In these settings, high conscientiousness is much more common, indicating that exposure to diversity is linked to better work discipline.

- **Lower Conscientiousness Existing Among Teachers in Low Diversity Settings**

Teachers in low-diversity settings are primarily in the low-conscientiousness category. This suggests that limited exposure to diversity is associated with lower responsibility and diligence.

- **Clear Behavioural Difference Exists Between Diversity Levels**

High diversity aligns more with high conscientiousness, whereas low diversity aligns strongly with low conscientiousness. This shows a clear difference in work-discipline patterns.

8.2.1.5 Association Between Problem-Solving Ability and OCB Dimensions

8.2.1.5.1 Association Between Problem-Solving Ability and Altruism

- **Higher Altruism Existing Among Teachers with Strong Problem Solving Ability**

Teachers with strong problem-solving ability show much higher levels of altruistic behaviour. In this group, most teachers fall into the high-altruism category, indicating that those who can analyse situations and find solutions are more willing to help others.

- **Lower Altruism Existing Among Teachers with Weak Problem Solving Ability**

Teachers with weaker problem solving ability are mostly placed in the low altruism category. This shows that when problem solving skills are limited, helping behaviour is also less evident.

- **Clear Behavioural Difference Exists Between Problem Solving Levels**

High problem solving ability aligns mainly with high altruism, while low problem solving ability aligns mainly with low altruism. This reveals a clear difference in helping behaviour between the two groups.

8.2.1.5.2 Association Between Problem Solving Ability and Courtesy

- **Higher Courtesy Existing Among Teachers with Strong Problem Solving Ability**

Teachers with stronger problem solving ability display higher levels of courteous behavior. Most individuals in this group fall into the high courtesy category, indicating that analytical ability is linked with respectful interaction.

- **Lower Courtesy Existing Among Teachers with Weak Problem Solving Ability**

Teachers with weaker problem solving skills are primarily in the low courtesy group. This suggests that limited analytical ability correlates with decreased politeness and consideration.

- **Clear Behavioural Difference Existing Between Problem Solving Levels**

High problem solving ability is mostly associated with high courtesy, while low problem solving ability is mostly associated with low courtesy. This shows a clear behavioural gap.

8.2.1.5.3 Association Between Problem Solving Ability and Virtue

- **Stronger Virtue Existing Among Teachers with Strong Problem Solving Ability**

Teachers who demonstrate strong problem solving ability show higher levels of virtue and ethical conduct. Most teachers in this group belong to the high virtue category.

- **Weaker Virtue Existing Among Teachers with Weak Problem Solving Ability**

Teachers with weaker problem solving ability are mostly placed in the low virtue category. This indicates that limited analytical ability is linked to weaker moral conduct.

- **Clear Behavioural Difference Existing Between Problem Solving Levels**

High problem solving ability aligns mainly with high virtue, while low problem solving ability aligns mainly with low virtue. This shows a clear ethical behavioral contrast.

8.2.1.5.4 Association Between Problem Solving Ability and Sportsmanship

- **Higher Sportsmanship Existing Among Teachers with Strong Problem Solving Ability**

Teachers with stronger problem-solving skills tend to demonstrate higher sportsmanship. Within this group, higher sportsmanship is more prevalent, suggesting that analytical ability correlates with fairness and cooperation.

- **Lower Sportsmanship Existing Among Teachers with Weak Problem Solving Ability**

Teachers with weaker problem-solving ability are mainly placed in the low sportsmanship category. This indicates that limited analytical ability is associated with weaker cooperative attitudes.

- **Clear Behavioural Difference Exists Between Problem Solving Levels**

High problem-solving ability is associated mainly with higher sportsmanship, whereas low problem-solving ability is associated mainly with lower sportsmanship. This reveals a clear behavioural contrast.

8.2.1.5.5 Association Between Problem Solving Ability and Conscientiousness

- **Higher Conscientiousness Existing Among Teachers with Strong Problem Solving Ability**

Teachers with stronger problem solving ability show higher levels of conscientiousness. In this group, responsible and disciplined work behaviour is much more common.

- **Lower Conscientiousness Existing Among Teachers with Weak Problem Solving Ability**

Teachers with weaker problem solving ability are mostly found in the low conscientiousness category. This indicates that limited analytical ability is linked to weaker responsibility and diligence.

- **Clear Behavioural Difference Existing Between Problem Solving Levels**

High problem solving ability is mainly associated with high conscientiousness, whereas low problem solving ability correlates with low conscientiousness. This highlights a distinct pattern in work discipline.

In conclusion, the study suggests that faculty members who exhibit a stronger scientific temper, characterized by rationality, curiosity, open-mindedness, respect for diversity, and problem-solving skills, tend to engage in more positive behaviours in both individual and organizational settings. These behaviours, including helping others, being respectful, cooperating, participating in institutional activities, and taking responsibility, create a more harmonious, fair, and productive academic environment. Encouraging these qualities in faculty can promote a more collaborative and effective environment, benefiting both individual faculty and the institution overall.

8.2.2 Level OCB and its association with Personality traits

The study investigated how various personality traits—such as agreeableness, emotional stability, proactive personality, openness to experience, and humility—affect faculty members' organizational citizenship behaviours (OCB), including altruism, courtesy, sportsmanship, civic virtue, and conscientiousness. The results emphasize the connection between each trait and positive behaviours that enhance personal relationships and the institution's overall operation.

8.2.2.1 Association Between Agreeableness and OCB Dimensions

8.2.2.1.1 Association between Agreeableness and Altruism

- **Higher Altruism Existing Among Teachers with High Agreeableness**

Teachers with higher agreeableness show much stronger altruistic tendencies. In this group, most respondents fall into the high altruism category, indicating that cooperative and empathetic individuals are more willing to support others and engage in helping behaviour.

- **Lower Altruism Existing Among Teachers with Low Agreeableness**

Teachers with lower agreeableness are predominantly found in the low altruism category. This shows that when cooperative and understanding personality traits are limited, supportive behaviour toward colleagues is also reduced.

- **Clear Behavioural Difference Exists Between Agreeableness Levels**

High agreeableness is strongly associated with high altruism, whereas low agreeableness is strongly associated with low altruism. This reflects a clear behavioural distinction between the two personality groups.

8.2.2.1.2 Association Between Agreeableness and Courtesy

- **Higher Courtesy Existing Among Teachers with High Agreeableness**

Teachers with high agreeableness demonstrate markedly higher levels of courteous behaviour. The majority in this group fall into the high courtesy category, indicating that empathetic and cooperative individuals are more respectful and considerate in professional interactions.

- **Lower Courtesy Existing Among Teachers with Low Agreeableness**

Teachers with low agreeableness are mostly found in the low courtesy category. This indicates that limited empathy and cooperativeness may reduce polite and respectful conduct.

- **Clear Behavioural Difference Exists Between Agreeableness Levels**

High agreeableness is mainly linked to high courtesy, while low agreeableness is strongly linked to low courtesy. This shows a clear interpersonal behavioural contrast.

8.2.2.1.3 Association Between Agreeableness and Virtue

- **Stronger Virtue Existing Among Teachers with High Agreeableness**

Teachers with higher agreeableness exhibit stronger virtuous traits. Most respondents in this category belong to the high virtue group, suggesting that cooperative and empathetic personalities tend to uphold stronger ethical values.

- **Weaker Virtue Existing Among Teachers with Low Agreeableness**

Teachers with lower agreeableness are mostly in the low virtue category. This suggests that reduced empathy and understanding may correspond with weaker adherence to ethical principles.

- **Clear Behavioural Difference Exists Between Agreeableness Levels**

High agreeableness mainly aligns with high virtue, whereas low agreeableness mainly aligns with low virtue. This highlights a clear moral behavioural difference.

8.2.2.1.4 Association Between Agreeableness and Sportsmanship

- **Higher Sportsmanship Existing Among Teachers with High Agreeableness**

Teachers with high agreeableness demonstrate considerably higher levels of sportsmanship. In this group, high sportsmanship is more common, indicating that cooperative individuals tend to show fairness, tolerance, and team spirit.

- **Lower Sportsmanship Existing Among Teachers with Low Agreeableness**

Teachers with low agreeableness are predominantly found in the low sportsmanship category. This suggests that limited empathy and cooperativeness may reduce the willingness to maintain fairness and harmony.

- **Clear Behavioural Difference Exists Between Agreeableness Levels**

High agreeableness mostly corresponds with high sportsmanship, whereas low agreeableness strongly corresponds with low sportsmanship. This reveals a clear behavioural gap.

8.2.2.1.5 Association Between Agreeableness and Conscientiousness

- **Higher Conscientiousness Existing Among Teachers with High Agreeableness**

Teachers with higher agreeableness tend to show stronger conscientiousness. A greater proportion of this group falls into the high conscientiousness category, suggesting that empathetic and cooperative individuals are more responsible and disciplined in their duties.

- **Lower Conscientiousness Existing Among Teachers with Low Agreeableness**

Teachers with low agreeableness are overwhelmingly concentrated in the low-conscientiousness category. This indicates that limited interpersonal sensitivity may also be associated with weaker responsibility and work discipline.

- **Clear Behavioural Difference Exists Between Agreeableness Levels**

High agreeableness is associated with higher conscientiousness, whereas low agreeableness is strongly associated with lower conscientiousness. This demonstrates a clear difference in patterns of work responsibility.

8.2.2.2 Association Between Emotional Stability and Dimensions of OCB

8.2.2.2.1 Association Between Emotional Stability and Altruism

- **Higher Altruistic Behaviour Existing Among Teachers with Strong Emotional Stability**

Teachers who demonstrate stronger emotional stability are more frequently found in the high altruism group. This indicates that emotionally balanced

individuals are more willing to help colleagues, support teamwork, and contribute positively to others' well-being.

- **Lower Altruistic Behaviour Existing Among Teachers with Limited Emotional Stability**

Teachers with lower emotional stability are mostly concentrated in the low altruism group. This suggests that difficulty managing emotions may reduce willingness to engage in supportive or selfless actions.

- **Clear Behavioural Difference Exists Between Emotional Stability Levels**

Higher emotional stability is mainly associated with stronger helping behaviour, whereas lower emotional stability is mainly associated with weaker helping behaviour, showing a clear distinction between the two groups.

8.2.2.2.2 Association Between Emotional Stability and Courtesy

- **Stronger Courteous Behaviour Existing Among Teachers with Strong Emotional Stability**

Teachers who remain calm and emotionally composed are more often found in the high courtesy group. This shows that emotional balance supports respectful communication and considerate interaction.

- **Reduced Courteous Behaviour Existing Among Teachers with Limited Emotional Stability**

Teachers with lower emotional stability are largely concentrated in the low courtesy group. This suggests that emotional strain may reduce politeness and interpersonal sensitivity.

- **Clear Behavioural Difference Exists Between Emotional Stability Levels**

Higher emotional stability is mainly associated with respectful behaviour, whereas lower emotional stability is mainly associated with reduced courtesy, revealing a noticeable interpersonal gap.

8.2.2.2.3 Association between Emotional Stability and Virtue

- **Stronger Ethical Conduct Existing Among Teachers with Strong Emotional Stability**

Teachers with higher emotional stability are more often found in the high virtue group. This indicates that emotional balance helps foster principled conduct, integrity, and responsible choices.

- **Weaker Ethical Conduct Existing Among Teachers with Limited Emotional Stability**

Teachers with lower emotional stability are primarily in the low virtue category. This suggests that emotional imbalance may reduce adherence to ethical standards.

- **Clear Behavioural Difference Exists Between Emotional Stability Levels**

Higher emotional stability is mainly associated with stronger moral conduct, whereas lower emotional stability is mainly associated with weaker ethical behaviour.

8.2.2.2.4 Association Between Emotional Stability and Sportsmanship

- **Stronger Cooperative Spirit Existing Among Teachers with Strong Emotional Stability**

Teachers with greater emotional stability are more often found in the high sportsmanship group. This suggests that emotional balance supports fairness, patience, and a willingness to cooperate with others.

- **Weaker Cooperative Spirit Existing Among Teachers with Limited Emotional Stability**

Teachers with lower emotional stability are predominantly found in the low sportsmanship category. This suggests that emotional strain may reduce tolerance and collaborative spirit.

- **Clear Behavioural Difference Exists Between Emotional Stability Levels**

Higher emotional stability is mainly associated with fairness and cooperation, whereas lower emotional stability is mainly associated with reduced team-oriented behaviour.

8.2.2.2.5 Association between Emotional Stability and Conscientiousness

- **Stronger Responsibility Patterns Exist Among Teachers with Strong Emotional Stability**

Teachers with greater emotional stability are relatively more represented in the high conscientiousness group. This suggests that emotional steadiness supports disciplined, careful, and reliable work behaviour.

- **Weaker Responsibility Patterns Exist Among Teachers with Limited Emotional Stability**

Teachers with lower emotional stability are more concentrated in the low conscientiousness group. This suggests that emotional imbalance may interfere with consistent, responsible task performance.

- **Clear Behavioural Difference Exists Between Emotional Stability Levels**

Higher emotional stability corresponds with stronger responsibility patterns, while lower emotional stability corresponds with weaker responsibility patterns.

8.2.2.3 Association Between Proactive Personality and Dimensions of OCB

8.2.2.3.1 Association Between Proactive Personality and Altruism

- **Higher Helping Behaviour Existing Among Teachers with Strong Proactive Personality**

Teachers with stronger proactive personalities are predominantly found in the high altruism category. This indicates that individuals who take initiative and act proactively tend to engage more in supportive, selfless acts toward colleagues and students.

- **Lower Helping Behaviour Existing Among Teachers with Limited Proactive Personality**

Teachers with a weaker proactive personality are largely concentrated in the low altruism category. This shows that when initiative and forward-thinking tendencies are limited, helping behaviour also occurs less frequently.

- **Clear Behavioural Difference Exists Between Proactive Personality Levels**

A stronger proactive personality is associated with stronger helping behaviour, whereas a lower proactive personality is associated with weaker helping behaviour, revealing a distinct behavioural separation.

8.2.2.3.2 Association between Proactive Personality and Courtesy

- **Stronger Respectful Interaction Exists Among Teachers with Strong Proactive Personality**

Teachers with a stronger proactive personality are more often present in the high courtesy group. This suggests that individuals who anticipate situations and act constructively tend to maintain polite and considerate communication.

- **Reduced Respectful Interaction Existing Among Teachers with Limited Proactive Personality**

Teachers with lower proactive personality are mainly in the low courtesy group. This indicates that when initiative and foresight are weaker, courteous behaviour also tends to be less evident.

- **Clear Behavioural Difference Exists Between Proactive Personality Levels**

Higher proactive personality is mainly associated with respectful interaction, whereas lower proactive personality is mainly associated with reduced courtesy.

8.2.2.3.3 Association between Proactive Personality and Virtue

- **Stronger Moral Conduct Existing Among Teachers with Strong Proactive Personality**

Teachers with a stronger proactive personality are predominantly represented in the high virtue group. This suggests that individuals who actively engage with situations tend to demonstrate stronger ethical and principled behaviour.

- **Weaker Moral Conduct Existing Among Teachers with Limited Proactive Personality**

Teachers with lower proactive personality are mainly in the low virtue category. This suggests that reduced initiative may coincide with weaker adherence to moral and ethical standards.

- **Clear Behavioural Difference Exists Between Proactive Personality Levels**

Higher proactive personality is mainly associated with stronger ethical conduct, whereas lower proactive personality is mainly associated with weaker virtuous behaviour.

8.2.2.3.4 Association between Proactive Personality and Sportsmanship

- **Stronger Cooperative Attitude Existing Among Teachers with Strong Proactive Personality**

Teachers with a stronger proactive personality are more often found in the high sportsmanship category. This suggests that individuals who take initiative tend to demonstrate fairness, tolerance, and a willingness to cooperate.

- **Weaker Cooperative Attitude Existing Among Teachers with Limited Proactive Personality**

Teachers with a weaker proactive personality are mainly concentrated in the low sportsmanship group. This shows that when initiative is limited, cooperative and fair-minded behaviour appears less frequently.

- **Clear Behavioural Difference Exists Between Proactive Personality Levels**

A stronger proactive personality is mainly associated with greater fairness and cooperation, whereas a lower proactive personality tends to be associated with less team oriented behaviour.

8.2.2.3.5 Association between Proactive Personality and Conscientiousness

- **Stronger Responsibility Pattern Existing Among Teachers with Strong Proactive Personality**

Teachers possessing a more proactive personality are more inclined to be classified as highly conscientious. This indicates that those driven by initiative tend to exhibit more responsible and reliable work habits.

- **Weaker Responsibility Pattern Existing Among Teachers with Limited Proactive Personality**

Teachers with lower proactive personality are largely concentrated in the low-conscientiousness group. This suggests that reduced initiative is associated with weaker responsibility-oriented behaviour.

- **Clear Behavioural Difference Exists Between Proactive Personality Levels**

A stronger proactive personality corresponds with stronger responsibility patterns, whereas a lower proactive personality corresponds with weaker responsibility patterns.

8.2.2.4 Association between Openness to Experience and OCB Dimensions

8.2.2.4.1 Association between Openness to Experience and Altruism

- **Stronger Helping Orientation Existing Among Teachers with High Openness to Experience**

Teachers with higher openness to experience are predominantly in the high altruism category. This suggests that individuals who are receptive to new ideas, perspectives, and experiences tend to show greater concern for others and a stronger willingness to offer help voluntarily.

- **Reduced Helping Orientation Existing Among Teachers with Low Openness to Experience**

Teachers with lower openness to experience are primarily found in the low altruism group. This suggests that when adaptability and intellectual curiosity are limited, supportive and selfless behaviour also occurs less frequently.

- **Clear Behavioural Difference Exists Between Openness Levels**

Higher openness is associated with more helping behaviour, while lower openness relates to less helping behaviour, highlighting a distinct behavioural difference between the two groups.

8.2.2.4.2 Association between Openness to Experience and Courtesy

- **Observed increased respectful interactions among teachers with high openness.**

Teachers who score higher on openness to experience are more often classified as high courtesy. This indicates that people who are adaptable and open to diverse perspectives tend to engage in more polite, respectful interactions at work.

- **Weaker Respectful Interaction Existing Among Teachers with Low Openness**

Teachers with lower openness are primarily found in the low courtesy group. This suggests that limited adaptability and resistance to new perspectives may restrict courteous communication.

- **Clear Behavioural Difference Exists Between Openness Levels**

Higher openness mainly aligns with respectful interaction, whereas lower openness aligns with reduced courtesy.

8.2.2.4.3 Association between Openness to Experience and Virtue

- **Stronger Moral Conduct Existing Among Teachers with High Openness**

Teachers with greater openness to experience mostly fall into the high virtue category. This suggests that those who are open to new ideas tend to demonstrate stronger ethical standards and principled behaviour.

- **Weaker Moral Conduct Existing Among Teachers with Low Openness**

Teachers with lower openness are largely concentrated in the low virtue category. This indicates that limited receptiveness to new ideas may be associated with weaker moral expression.

- **Clear Behavioural Difference Exists Between Openness Levels**

Higher levels of openness are primarily linked to stronger ethical conduct, while lower openness is mainly associated with less virtuous behaviour.

8.2.2.4.4 Association between Openness to Experience and Sportsmanship

- **Stronger Cooperative Attitude Existing Among Teachers with High Openness**

Teachers with greater openness to experience are more likely to belong to the high sportsmanship group. This indicates that open-minded individuals tend to demonstrate fairness, tolerance, and a cooperative nature.

- **Weaker Cooperative Attitude Existing Among Teachers with Low Openness**

Teachers with lower openness are mainly found in the low sportsmanship group. This suggests that less flexible thinking could be linked to weaker cooperative behaviours.

- **Clear Behavioural Difference Exists Between Openness Levels**

Higher openness is associated with stronger fairness and cooperation, whereas lower openness is associated with weaker collaborative behaviour.

8.2.2.4.5 Association Between Openness to Experience and Conscientiousness

- **Stronger Responsibility Pattern Existing Among Teachers with High Openness**

Teachers with higher openness are more likely to be in the high conscientiousness category. This suggests that individuals who are intellectually flexible tend to demonstrate greater responsibility, organization, and diligence.

- **Weaker Responsibility Pattern Existing Among Teachers with Low Openness**

Teachers with lower openness are largely concentrated in the low conscientiousness group. This suggests that limited openness may coincide with weaker responsibility-oriented work behaviour.

- **Clear Behavioural Difference Exists Between Openness Levels**

Higher openness is associated with relatively stronger responsibility patterns, while lower openness relates to weaker responsibility patterns.

8.2.2.5 Association between Humility and Dimensions of OCB

8.2.2.5.1 Association between Humility and Altruism

- **Stronger Helping Orientation Existing Among Teachers with Higher Humility**

Teachers exhibiting higher humility are mainly found in the high altruism group, suggesting that those who show modesty and selflessness are more likely to offer increased support, empathy, and cooperation to colleagues and students.

- **Weaker Helping Orientation Existing Among Teachers with Lower Humility**

Teachers exhibiting lower humility tend to be mainly in the low altruism group, indicating that limited modesty and interpersonal sensitivity are associated with decreased supportive behaviours.

- **Clear Behavioural Difference Exists Between Humility Levels**

Higher humility is mainly associated with more helping behaviour, while lower humility is linked to less helping behaviour, showing a clear difference in how they behave.

8.2.2.5.2Association between Humility and Courtesy

- **Stronger Respectful Interaction Exists Among Teachers with Higher Humility**

Teachers with higher humility are mostly found in the high courtesy category, indicating that modest individuals tend to maintain more respectful, polite, and considerate interpersonal communication.

- **Weaker Respectful Interaction Existing Among Teachers with Lower Humility**

Teachers with lower humility are primarily in the low courtesy group, suggesting that modesty may limit respectful interaction patterns.

- **Clear Behavioural Difference Exists Between Humility Levels**

Higher humility mainly aligns with respectful conduct, whereas lower humility aligns with reduced courtesy.

8.2.2.5.3 Association between Humility and Virtue

- **Stronger Moral Conduct Existing Among Teachers with Higher Humility**

Teachers with higher humility are predominantly found in the high virtue category, indicating that modest individuals tend to demonstrate stronger ethical standards and principled behaviour.

- **Weaker Moral Conduct Existing Among Teachers with Lower Humility**

Teachers with lower humility are primarily in the low virtue category, suggesting that limited modesty may coincide with weaker moral expression.

- **Clear Behavioural Difference Exists Between Humility Levels**

Higher humility mainly corresponds with stronger ethical conduct, whereas lower humility mainly corresponds with weaker virtuous behaviour.

8.2.2.5.4 Association Between Humility and Sportsmanship

- **Stronger Cooperative Spirit Existing Among Teachers with Higher Humility**

Teachers with higher humility are more likely to appear in the high sportsmanship category, suggesting that modest individuals tend to demonstrate fairness, cooperation, and respect in professional interactions.

- **Weaker Cooperative Spirit Existing Among Teachers with Lower Humility**

Teachers with lower humility are heavily concentrated in the low sportsmanship group, indicating that reduced modesty may coincide with a weaker teamwork orientation.

- **Clear Behavioural Difference Exists Between Humility Levels**

Higher humility is generally associated with more cooperative behaviour, while lower humility tends to be linked to poorer sportsmanship.

8.2.2.5.5 Association between Humility and Conscientiousness

- **Stronger Responsibility Pattern Existing Among Teachers with Higher Humility**

Teachers with higher humility are more likely to fall into the high conscientiousness category, indicating that modest individuals tend to show stronger responsibility, diligence, and disciplined work habits.

- **Weaker Responsibility Pattern Existing Among Teachers with Lower Humility**

Teachers with lower humility are predominantly found in the low conscientiousness group, suggesting that limited modesty may coincide with a weaker sense of responsibility.

- **Clear Behavioural Difference Exists Between Humility Levels**

Higher humility is associated with more responsible behaviour, while lower humility is linked to less responsible patterns.

In summary, faculty members with traits like agreeableness, emotional stability, proactive nature, openness, and humility are more likely to exhibit positive OCB behaviours, including altruism, courtesy, sportsmanship, conscientiousness, and civic virtue. These characteristics facilitate stronger relationships with colleagues, support institutional success, and foster a more harmonious, responsible, and productive academic environment. Promoting these traits can boost faculty engagement and improve institutional effectiveness.

8.2.3 Level OCB and its association with Academic Enthusiasm

The study examined how various facets of academic enthusiasm, such as passion for teaching, willingness to engage, research activity, mentoring attitude, and knowledge sharing, affect faculty members' behaviours regarding Organizational Citizenship Behaviour (OCB), which encompasses helpfulness, politeness, responsibility, cooperation, and ethical conduct. Results indicate that faculty with greater academic enthusiasm are more likely to display stronger positive behaviours both personally and institutionally.

8.2.3.1 Association between Passion for Teaching and Dimensions of OCB

8.2.3.1.1 Association between Passion for Teaching and Altruism

- **Stronger Helping Orientation Existing Among Teachers with Greater Teaching Passion**

Teachers who show greater passion for teaching are primarily found in the high altruism group. This suggests that enthusiasm for teaching is closely connected to a

desire to help, support, and act for others' benefit. Dedicated educators tend to go beyond their formal responsibilities, demonstrating a service-oriented attitude mindset.

- **Weaker Helping Orientation Existing Among Teachers with Lower Teaching Passion**

Teachers with lower passion for teaching are largely concentrated in the low altruism group. This pattern suggests that when emotional engagement with teaching is limited, supportive and selfless behavioural tendencies are also reduced.

- **Clear Behavioural Difference Exists Between Passion Levels**

Greater teaching passion is primarily associated with more proactive helping behaviour, while lower passion is mainly linked to less frequent helping tendencies.

8.2.3.1.2 Association between Passion for Teaching and Courtesy

- **Stronger Respectful Interaction Exists Among Teachers with Greater Teaching Passion**

Teachers with a stronger passion for teaching are predominantly found in the high-courtesy category. This shows that enthusiasm for teaching is closely linked to respectful, polite, and considerate professional interactions.

- **Less respectful interactions are observed among teachers who have lower teaching passion.**

Teachers who display lower passion are typically associated with lower levels of courtesy category, suggesting that reduced enthusiasm for teaching may coincide with weaker interpersonal sensitivity.

- **Clear Behavioural Difference Exists Between Passion Levels**

Greater passion is generally associated with respectful behaviour, while lower passion tends to align with decreased courtesy.

8.2.3.1.3 Association between Passion for Teaching and Virtue

- **Stronger Ethical Orientation Among Teachers with Greater Teaching Passion**

Teachers who exhibit a strong passion for teaching are mainly in the high-virtue group. This indicates that enthusiasm toward teaching is closely linked to a stronger moral orientation, principled conduct, and value-based behaviour.

- **Weaker Ethical Orientation Among Teachers with Lower Teaching Passion**

Teachers with limited passion for teaching are predominantly in the low virtue category, suggesting that reduced enthusiasm may be associated with weaker ethical expression.

- **Clear Behavioural Difference Exists Between Passion Levels**

Greater passion mainly corresponds with stronger ethical conduct, whereas lower passion mainly corresponds with weaker virtuous behaviour.

8.2.3.1.4 Association Between Passion for Teaching and Sportsmanship

- **Stronger Cooperative Orientation Among Teachers with Greater Teaching Passion**

Teachers who display a stronger passion for teaching are more often found in the high sportsmanship category. This indicates that enthusiasm for teaching is strongly connected to fairness, cooperation, and a positive approach to professional relationships.

- **Weaker Cooperative Orientation Existing Among Teachers with Lower Teaching Passion**

Teachers with lower passion are mainly concentrated in the low sportsmanship category, indicating that limited enthusiasm may coincide with weaker collaborative behaviour.

- **A Clear Behavioural Difference Exists Between Passion Levels**

Greater passion mainly corresponds with stronger cooperative tendencies, whereas lower passion mainly corresponds with weaker sportsmanship.

8.2.3.1.5 Association between Passion for Teaching and Conscientiousness

- **Stronger Responsibility Pattern Among Teachers with Greater Teaching Passion**

Teachers who demonstrate greater passion for teaching tend to be more prominent in the high conscientiousness group than those with less passion. This

suggests that enthusiasm for teaching is strongly associated with traits such as diligence, responsibility, and disciplined work habits.

- **Weaker Responsibility Pattern Existing Among Teachers with Lower Teaching Passion**

Teachers with lower passion are overwhelmingly concentrated in the low conscientiousness category, suggesting that limited enthusiasm toward teaching may coincide with weaker responsibility orientation.

- **Clear Behavioural Difference Exists Between Passion Levels**

Greater passion corresponds with stronger responsibility patterns, whereas lower passion corresponds with weaker responsibility patterns.

8.2.3.2 Association between Willingness to Engage and OCB Dimensions

8.2.3.2.1 Association between Willingness to Engage and Altruism

- **Stronger Helping Behaviour Existing Among Teachers with Greater Engagement**

Teachers who show greater willingness to engage are primarily in the high altruism category. This suggests that active participation in academic and institutional activities is closely linked to stronger helping tendencies and concern for others. Those who engage more readily in professional interactions tend to extend support beyond their formal responsibilities.

- **Weaker Helping Behaviour Existing Among Teachers with Lower Engagement**

Teachers with lower willingness to participate are mainly found in the low altruism group. This suggests that lower involvement and participation may be associated with a weaker inclination to help colleagues and students.

- **Clear Behavioural Difference Exists Between Engagement Levels**

Greater engagement mainly corresponds with stronger helping behaviour, whereas lower engagement mainly corresponds with weaker helping tendencies.

8.2.3.2.2Association between Willingness to Engage and Courtesy

- **Stronger Respectful Interaction Existing Among Teachers with Greater Engagement**

Teachers who show a greater willingness to engage are largely in the high courtesy category. This indicates that active involvement is closely connected with respectful communication, politeness, and professional consideration.

- **Weaker Respectful Interaction Existing Among Teachers with Lower Engagement**

Teachers with lower willingness to engage are mostly found in the low courtesy category. This shows that reduced involvement may coincide with weaker interpersonal sensitivity.

- **Clear Behavioural Difference Exists Between Engagement Levels**

Greater engagement mainly corresponds with respectful conduct, whereas lower engagement mainly corresponds with reduced courtesy.

8.2.3.2.3 Association between Willingness to Engage and Virtue

- **Stronger Value-Oriented Behaviour Existing Among Teachers with Greater Engagement**

Teachers who show greater willingness to engage are primarily found in the high virtue group. This suggests that active professional participation is strongly linked to a robust ethical outlook and principled behaviour.

- **Weaker Value-Oriented Behaviour Existing Among Teachers with Lower Engagement**

Teachers with lower willingness to engage are largely concentrated in the low virtue category, suggesting that reduced participation may coincide with weaker value-based behaviour.

- **Clear Behavioural Difference Exists Between Engagement Levels**

Greater engagement mainly corresponds with stronger ethical orientation, whereas lower engagement mainly corresponds with weaker virtuous behaviour.

8.2.3.2.4 Association between Willingness to Engage and Sportsmanship

- **Stronger Cooperative Behaviour Existing Among Teachers with Greater Engagement**

Teachers showing a greater willingness to participate are more often categorized as exhibiting high sportsmanship. This suggests a strong connection between active engagement and qualities like fairness, cooperation, and positive professional interactions.

- **Weaker Cooperative Behaviour Existing Among Teachers with Lower Engagement**

Teachers who show less willingness to engage are primarily grouped in the low sportsmanship category. This indicates that lower involvement might be linked to a weaker focus on teamwork.

- **Clear Behavioural Difference Exists Between Engagement Levels**

Greater engagement mainly corresponds with stronger cooperative tendencies, whereas lower engagement mainly corresponds with weaker sportsmanship.

8.2.3.2.5 Association Between Willingness to Engage and Conscientiousness

- **Stronger Responsibility Pattern Existing Among Teachers with Greater Engagement**

Teachers who are more willing to engage tend to be more prominent in the high-conscientiousness group than less engaged teachers. This suggests that active involvement is strongly associated with traits like thoroughness, responsibility, and disciplined work habits.

- **Weaker Responsibility Pattern Existing Among Teachers with Lower Engagement**

Teachers with lower willingness to engage are overwhelmingly concentrated in the low conscientiousness category, suggesting that limited involvement may coincide with a weaker sense of responsibility.

- **Clear Behavioural Difference Exists Between Engagement Levels**

Greater engagement corresponds with comparatively stronger responsibility patterns, whereas lower engagement corresponds with weaker responsibility patterns.

8.2.3.3 Association between Research Involvement and OCB Dimensions

8.2.3.3.1Association between Research Involvement and Altruism

- **Stronger Helping Orientation Existing Among Teachers with Greater Research Participation**

Teachers who show higher research involvement are mainly represented in the high altruism category. This indicates that active engagement in research activities is closely aligned with stronger helping tendencies, concern for others, and willingness to support colleagues and students beyond formal duties.

- **Weaker Helping Orientation Existing Among Teachers with Lower Research Participation**

Teachers with lower research involvement are mostly in the low altruism group. This suggests that limited research engagement may be associated with a reduced inclination toward supportive and selfless behaviour.

- **Clear Behavioural Difference Exists Between Research Involvement Levels**

Greater research participation is associated with stronger helping behaviour, whereas lower participation is associated with weaker helping tendencies.

8.2.3.3.2 Association Between Research Involvement and Courtesy

- **Stronger Respectful Interaction Among Teachers with Greater Research Participation**

Teachers who are more involved in research are largely positioned in the high courtesy category. This indicates that active scholarly engagement is closely connected with polite, respectful, and considerate professional interaction.

- **Weaker Respectful Interaction Existing Among Teachers with Lower Research Participation**

Teachers with less research involvement are mainly in the low courtesy group. This suggests that lower research engagement might be associated with weaker interpersonal sensitivity and professionalism etiquette.

- **Clear Behavioural Difference Exists Between Research Involvement Levels**

Higher research participation is primarily associated with respectful behaviour, while lower participation is linked to decreased courtesy.

8.2.3.3.3 Association between Research Involvement and Virtue

- **Stronger Ethical Orientation Among Teachers with Greater Research Participation**

Teachers with greater involvement in research are primarily found in the high virtue category. This suggests that active participation in research is strongly linked to enhanced ethical principles and professional integrity.

- **Weaker Ethical Orientation Existing Among Teachers with Lower Research Participation**

Teachers with lower research involvement are largely concentrated in the low virtue group. This suggests that limited research participation may coincide with weaker value-based behaviour.

- **Clear Behavioural Difference Exists Between Research Involvement Levels**

Greater research participation mainly corresponds with stronger ethical orientation, whereas lower participation mainly corresponds with weaker virtuous behaviour.

8.2.3.3.4 Association Between Research Involvement and Sportsmanship

- **Stronger Cooperative Behaviour Existing Among Teachers with Greater Research Participation**

Teachers who demonstrate greater research involvement are more likely to appear in the high sportsmanship category. This indicates that active scholarly participation is closely linked with fairness, cooperation, and constructive professional interaction.

- **Weaker Cooperative Behaviour Existing Among Teachers with Lower Research Participation**

Teachers with lower research involvement mainly come under the low sportsmanship category. This shows that reduced research participation may coincide with weaker cooperative tendencies.

- **Clear Behavioural Difference Exists Between Research Involvement Levels**

Greater research participation mainly corresponds with stronger cooperative behaviour, whereas lower participation mainly corresponds with weaker sportsmanship.

8.2.3.3.5 Association between Research Involvement and Conscientiousness

- **Stronger Responsibility Pattern Among Teachers with Greater Research Participation**

Teachers with higher research involvement show a significantly greater presence in the high conscientiousness category than those with lower involvement. This indicates that active research participation is closely linked with responsibility, diligence, and disciplined work habits.

- **Weaker Responsibility Pattern Existing Among Teachers with Lower Research Participation**

Teachers with lower research involvement are overwhelmingly concentrated in the low conscientiousness category. This suggests that limited research engagement may be associated with a weaker responsibility orientation.

- **Clear Behavioural Difference Exists Between Research Involvement Levels**

Greater research participation corresponds with comparatively stronger responsibility patterns, whereas lower participation corresponds with weaker responsibility patterns.

8.2.3.4 Association between Mentoring Attitude and OCB Dimensions

8.2.3.4.1 Association between Mentoring Attitude and Altruism

- **Stronger Helping Orientation Existing Among Teachers with Greater Mentoring Inclination**

Teachers with more pronounced mentoring attitudes predominantly fall into the high altruism category. This suggests that individuals who are eager to guide and assist others generally exhibit greater concern for colleagues and students, displaying more selfless behaviour in their professional roles.

- **Weaker Helping Orientation Existing Among Teachers with Limited Mentoring Inclination**

Teachers with weaker mentoring attitudes are largely concentrated in the low altruism group. This shows that limited interest in mentoring often corresponds with reduced willingness to support or assist others.

- **Clear Behavioural Difference Exists Between Mentoring Levels**

A stronger mentoring inclination is generally associated with increased helping behaviour, while a weaker mentoring inclination tends to relate to decreased helping tendencies.

8.2.3.4.2 Association between Mentoring Attitude and Courtesy

- **Stronger Respectful Interaction Among Teachers with Greater Mentoring Inclination**

Teachers who exhibit stronger mentoring attitudes are mostly found in the high courtesy group. This suggests that those who actively guide others tend to behave more politely, respectfully, and considerately.

- **Weaker Respectful Interaction Existing Among Teachers with Limited Mentoring Inclination**

Teachers with weaker mentoring attitudes are mostly concentrated in the low courtesy group. This suggests that reduced mentoring orientation may coincide with less courteous interaction patterns.

- **Clear Behavioural Difference Exists Between Mentoring Levels**

A stronger mentoring inclination primarily aligns with respectful behaviour, while a weaker inclination is mainly associated with less courteous conduct.

8.2.3.4.3 Association Between Mentoring Attitude and Virtue

- **Stronger Value-Based Conduct Existing Among Teachers with a Greater Inclination to Mentor**

Teachers with stronger mentoring attitudes are mainly found in the high virtue category. This indicates that willingness to mentor others is closely aligned with stronger ethical orientation and principled professional conduct.

- **Weaker Value-Based Conduct Existing Among Teachers with Limited Mentoring Inclination**

Teachers with weaker mentoring attitudes are largely concentrated in the low virtue group. This suggests that a limited inclination toward mentoring may coincide with weaker adherence to value-based behaviour.

- **Clear Behavioural Difference Exists Between Mentoring Levels**

A stronger mentoring inclination mainly corresponds with stronger ethical conduct, whereas a weaker mentoring inclination mainly corresponds with weaker value-based behaviour.

8.2.3.4.4 Association between Mentoring Attitude and Sportsmanship

- **Stronger Cooperative Behaviour Existing Among Teachers with Greater Inclination to Mentor**

Teachers who demonstrate stronger mentoring attitudes are more likely to appear in the high sportsmanship category. This indicates that willingness to mentor is closely linked with fairness, cooperation, and constructive professional interaction.

- **Weaker Cooperative Behaviour Existing Among Teachers with Limited Mentoring Inclination**

Teachers with weaker mentoring attitudes are mainly concentrated in the low sportsmanship category. This shows that a limited inclination toward mentoring may coincide with weaker cooperative tendencies.

- **Clear Behavioural Difference Exists Between Mentoring Levels**

Greater mentoring inclination mainly corresponds with stronger cooperative behaviour, whereas weaker mentoring inclination mainly corresponds with reduced sportsmanship.

8.2.3.4.5 Association between Mentoring Attitude and Conscientiousness

- **Stronger Responsibility Pattern Among Teachers with Greater Mentoring Inclination**

Teachers with stronger mentoring attitudes show a noticeably greater presence in the high conscientiousness category than those with weaker mentoring inclination.

This indicates that willingness to guide others is closely connected with responsibility, diligence, and disciplined work behaviour.

- **Weaker Responsibility Pattern Existing Among Teachers with Limited Mentoring Inclination**

Teachers with weaker mentoring attitudes are overwhelmingly concentrated in the low conscientiousness category. This suggests that a limited inclination toward mentoring often coincides with a weaker responsibility orientation.

- **Clear Behavioural Difference Exists Between Mentoring Levels**

A greater mentoring inclination corresponds with comparatively stronger responsibility patterns, whereas a weaker mentoring inclination corresponds with weaker responsibility patterns.

8.2.3.5 Association Between Knowledge sharing Attitude and Dimensions of OCB

8.2.3.5.1 Association Between Knowledge sharing Attitude and Altruism

- **Stronger Helping Orientation Among Teachers with a Greater Knowledge-sharing Attitude**

Teachers who demonstrate a greater willingness to share knowledge are predominantly found in the high-altruism category. This suggests that openness in exchanging ideas, resources, and expertise is closely linked to greater concern for others and stronger supportive behaviour in academic settings.

- **Weaker Helping Orientation Existing Among Teachers with Limited Knowledge sharing Attitude**

Teachers with weaker knowledge sharing attitudes are largely concentrated in the low altruism group. This pattern suggests that reluctance to share knowledge may coincide with reduced willingness to assist colleagues or students.

- **Clear Behavioural Difference Exists Between Knowledge sharing Levels**

A greater inclination to share knowledge mainly corresponds with stronger altruistic tendencies, whereas a weaker inclination to share knowledge mainly corresponds with reduced helping behaviour.

8.2.3.5.2 Association Between Knowledge sharing Attitude and Courtesy

- **Stronger Respectful Interaction Exists Among Teachers with a Greater Knowledge sharing Attitude**

Teachers with stronger knowledge sharing attitudes appear mainly in the high courtesy category. This indicates that individuals who willingly share knowledge tend to interact more respectfully, politely, and constructively.

- **Weaker Respectful Interaction Existing Among Teachers with a Limited Knowledge sharing Attitude**

Teachers with weaker knowledge sharing attitudes are primarily concentrated in the low courtesy group. This shows that restricted knowledge exchange may be associated with reduced interpersonal sensitivity and consideration.

- **Clear Behavioural Difference Exists Between Knowledge sharing Levels**

A stronger inclination to share knowledge mainly corresponds with more courteous behaviour, whereas a weaker inclination to share knowledge mainly corresponds with less respectful interaction.

8.2.3.5.3 Association Between Knowledge sharing Attitude and Virtue

- **Stronger Ethical Orientation Among Teachers with a Greater Knowledge sharing Attitude**

Teachers with stronger knowledge sharing attitudes are mainly positioned in the high virtue category. This indicates that willingness to share knowledge is closely connected with ethical conduct, integrity, and principled professional behaviour.

- **Weaker Ethical Orientation Among Teachers with a Limited Attitude Toward Knowledge sharing**

Teachers who have less positive attitudes towards knowledge sharing tend to be mainly found in the low virtue group. This pattern indicates that a reluctance to share knowledge could be linked to a weaker commitment to moral and professional standards.

- **Clear Behavioural Difference Exists Between Knowledge sharing Levels**

A stronger inclination to share knowledge mainly corresponds with stronger ethical conduct, whereas a weaker inclination to share knowledge mainly corresponds with weaker value-based behaviour.

8.2.3.5.4 Association Between Knowledge sharing Attitude and Sportsmanship

- **Stronger Cooperative Behaviour Among Teachers with a Greater Attitude Toward Knowledge sharing**

Teachers demonstrating a stronger attitude towards knowledge sharing are more often seen in the high sportsmanship group. This suggests that being open to sharing knowledge is strongly linked to fairness, cooperation, and positive professional interactions.

- **Weaker Cooperative Behaviour Existing Among Teachers with a Limited Knowledge-sharing Attitude**

Teachers with weaker knowledge sharing attitudes are overwhelmingly concentrated in the low sportsmanship category. This shows that restricted knowledge sharing may coincide with weaker collaborative tendencies.

- **Clear Behavioural Difference Exists Between Knowledge sharing Levels**

Greater knowledge sharing inclination mainly corresponds with stronger cooperative behaviour, whereas weaker knowledge sharing inclination mainly corresponds with reduced sportsmanship.

8.2.3.5.5 Association Between Knowledge sharing Attitude and Conscientiousness

- **Stronger Responsibility Pattern Among Teachers with Greater Knowledge-sharing Attitude**

Teachers with stronger knowledge sharing attitudes are significantly more likely to fall into the high conscientiousness category than those with weaker knowledge-sharing orientation. This suggests that individuals who actively share knowledge tend to be more responsible, disciplined, and dependable in their professional roles.

- **Weaker Responsibility Pattern Existing Among Teachers with Limited Knowledge sharing Attitude**

Teachers with weaker knowledge sharing attitudes are overwhelmingly concentrated in the low conscientiousness group. This suggests that reluctance to share knowledge may coincide with a weaker sense of responsibility.

- **Clear Behavioural Difference Exists Between Knowledge sharing Levels**

A greater inclination to share knowledge is mainly associated with stronger responsibility patterns, whereas a weaker inclination is linked to weaker ones.

In summary, the research indicates that academic enthusiasm—whether through passion for teaching, willingness to participate, research activity, mentoring, or knowledge sharing—significantly influences positive organizational citizenship behaviours. Enthusiastic teachers tend to demonstrate helpfulness, courtesy, sportsmanship, responsibility, and engagement in organizational events. These actions not only strengthen individual relationships but also foster a more collaborative, ethical, and efficient academic setting. Promoting academic enthusiasm among faculty can result in a more productive, supportive, and cohesive environment within higher education institutions.

8.2.4 Level OCB and its association with Organisational properties

The study examined how different organizational properties, such as the institution's location, management type, and NAAC accreditation status, affect faculty members' Organizational Citizenship Behaviours (OCB). OCB includes helpful and respectful actions like altruism, courtesy, sportsmanship, conscientiousness, and civic virtue. The findings show that while some of these factors influence OCB, others have a weaker effect.

8.2.4.1 Domicile and OCB Dimensions

- **Altruism Across Domicile Categories**

The analysis indicates no significant difference in altruism levels among teachers by residency area. Whether teachers live in urban, semi-urban, or rural

settings does not significantly impact their altruistic behaviour. While minor variations were noted, they are not substantial enough to suggest a clear pattern. It appears that altruism is more influenced by personal values, institutional culture, and leadership rather than geographical location.

- **Courtesy and Its Relation to Domicile**

The study of courtesy levels shows that a teacher's residence does not significantly influence their courteous behaviour. Courtesy levels are fairly consistent across urban, semi-urban, and rural areas. The minor differences noticed among these groups do not suggest any strong or meaningful connection. Consequently, it appears that personal values and professional ethics are more influential on teachers' courtesy than their place of residence.

- **Civic Virtue and Its Connection to Domicile**

The study also indicates that domicile does not significantly affect the level of virtue among teachers. Although urban teachers reported a slightly higher share of high virtue, these differences were not sufficient to establish a meaningful pattern. Virtue appears to be shaped by internal moral principles and institutional norms rather than by where teachers reside.

- **Sportsmanship and Domicile**

Similarly, domicile appears to have little impact on teachers' sportsmanship levels. The percentages of teachers reporting high and low sportsmanship were comparable across urban, semi-urban, and rural areas. Although some differences exist, they are not substantial enough to imply that teachers' residence influences their sportsmanship. Factors like institutional culture and personal characteristics seem to play a more significant role.

- **Conscientiousness and Domicile**

Domicile is significantly linked to conscientiousness. Urban teachers tend to exhibit lower levels of conscientiousness, while semi-urban teachers show higher levels. This indicates that the environment in semi-urban and rural areas may promote more diligent and responsible behaviour compared to urban areas. To

enhance conscientiousness, interventions could focus on urban teachers and also support and strengthen the positive traits observed in semi-urban and rural teachers.

Overall, domicile appears unrelated to altruism, courtesy, virtue, or sportsmanship. However, it does impact conscientiousness, with urban teachers indicating lower levels. This underscores the need to focus on key internal factors such as leadership, faculty motivation, and institutional culture to enhance academic behaviours. Interventions should target these internal determinants rather than geographical location.

8.2.4.2 Type of Management and OCB Dimensions

- **Similar Pattern Existing in Altruistic Behaviour Across Management Categories**

The data indicate that altruism levels are comparable in both minority and non-minority institutions. The proportions of teachers with either low or high altruism are nearly identical across the groups, suggesting that the management type does not impact selfless or helping behaviors. This implies that teachers' altruism is primarily shaped by their internal values, professional ethics, and the institutional environment, rather than by the administrative classification.

- **Courtesy Showing No Meaningful Variation Across Management Systems**

The courtesy levels are mostly similar across both management categories. While small percentage differences exist, they do not form a clear pattern. This suggests that respectful and polite conduct among teachers remains consistent whether the institution is minority- or non-minority-managed, indicating that interpersonal culture, rather than governance structure, is the main factor.

- **Virtue Remaining Stable Across Institutional Administration Types**

Virtue levels show a similar distribution across both management categories. The lack of statistical significance indicates that ethical orientation, integrity, and value-based conduct among teachers are not determined by administrative ownership. Instead, virtue appears to stem from individual moral frameworks and professional norms shared across institutions.

- **Sportsmanship Not Influenced by Administrative Category**

The results show that fairness, cooperation, and team spirit remain consistent across management types. The proportions of teachers exhibiting higher or lower sportsmanship are nearly identical in both institutional groups. This indicates that collaborative behaviour is shaped more by workplace culture and leadership style than by whether an institution is minority- or non-minority-managed.

- **Work Discipline Remaining Comparable Across Management Types**

Conscientiousness also shows no meaningful difference across management categories. The distribution of responsibility, diligence, and dependability is similar across both groups, indicating that institutional administration alone does not determine disciplined professional behaviour. Personal traits and the organizational environment are more decisive factors.

Across all five dimensions, altruism, courtesy, virtue, sportsmanship, and conscientiousness, management type does not produce statistically meaningful variation. This consistent pattern indicates that organizational citizenship behaviour among teachers is largely independent of administrative classification. Institutional interventions aimed at improving citizenship behaviour should focus on leadership quality, institutional culture, motivation systems, and professional development rather than structural management categories, since management type alone does not appear to shape behavioural outcomes.

8.2.4.3 NAAC Accreditation Status and OCB Dimensions

- **Variation in Altruistic Behaviour Existing Across Accreditation Grades**

The distribution of altruism varies across accreditation levels, revealing a clear pattern. Teachers at grade B institutions predominantly belong to the higher altruism group, whereas those at B++ and above institutions mostly fall into the lower altruism group. Institutions without accreditation and those at the B+ level are positioned between these extremes. This suggests that the highest levels of altruistic behaviour are not necessarily found in the top-rated institutions but are more common in moderately rated ones. The data imply a relationship between

accreditation status and altruism, yet a higher grade alone does not automatically correspond to increased helping behaviour.

- **Courtesy Remaining Consistent Across Accreditation Categories**

Courtesy levels appear broadly similar across all accreditation groups. Each category shows a comparable balance between lower and higher courtesy proportions, with no single grade clearly dominant. Although some categories display slightly higher percentages, these differences are small and inconsistent. This suggests that accreditation status does not shape teachers' courteous interaction patterns.

- **Virtue Showing Similar Distribution Across Grades**

The pattern of virtue remains relatively stable across accreditation categories. Institutions that are not accredited have the largest share in the higher virtue group, while B+ institutions have the largest share in the lower virtue group. However, the differences do not form a consistent trend. This indicates that moral and value-based conduct among teachers does not vary systematically with accreditation level.

- **Sportsmanship Remaining Unaffected by Accreditation Status**

Sportsmanship levels show comparable proportions across all accreditation grades. Institutions without accreditation have the largest share in the lower sportsmanship group, whereas grade B and B++ and above institutions share the largest proportion in the higher sportsmanship group. However, these differences are minor and inconsistent, indicating that accreditation status does not meaningfully shape cooperative or fair-minded behaviour.

- **Conscientiousness Showing Similar Pattern Across Accreditation Levels**

The distribution of conscientiousness remains largely uniform across all grades. Grade B institutions have the largest share in the lower conscientiousness group, while non-accredited institutions have the largest share in the higher conscientiousness group. These variations do not follow a clear progression from lower to higher grades, indicating that work discipline and responsibility do not depend on accreditation status.

Among the five behavioural dimensions, only altruism shows meaningful variation across accreditation categories, while courtesy, virtue, sportsmanship, and conscientiousness remain broadly similar across grades. This indicates that accreditation status has a limited influence on most organizational citizenship behaviour dimensions. Efforts to strengthen positive workplace behaviour among teachers should not rely solely on improving accreditation. Instead, attention should be directed toward institutional culture, leadership practices, and professional values, as most behavioural dimensions remain similar across accreditation grades.

In conclusion, the study shows that certain organizational factors, such as the institution's location, management type, and NAAC accreditation status, do influence how faculty members behave at work, but not always as we might expect. While domicile and management type don't strongly influence helpfulness, courtesy, or sportsmanship, NAAC accreditation does appear to encourage more helpful behaviour (altruism). The study also found that teachers in semi-urban and rural areas were more likely to be responsible (conscientious), while personal factors like work culture, institutional leadership, and individual attitudes play a larger role in shaping overall behaviour. These findings suggest that while location and institutional ranking matter to some extent, a lot of the positive behaviours that enhance collaboration and cooperation depend on the internal environment, personal values, and professional ethics of the teachers themselves.

8.2.5 Conclusion

In conclusion, the study emphasizes the vital link between teachers' personal qualities, such as rational thinking, curiosity, open-mindedness, and willingness to problem-solve, and their positive workplace behaviours, such as helping others, showing respect, and collaborating effectively. Teachers who are open to diversity and intellectually receptive tend to go beyond their formal roles, fostering a positive, collaborative, and ethical atmosphere. Likewise, traits such as emotional stability, agreeableness, and humility are crucial for fostering teamwork, tolerance, and moral conduct, helping teachers build stronger relationships with colleagues and supporting the institution's success. The study also highlights that a teacher's perception of the

institution, whether it promotes inclusivity and innovation, significantly influences their motivation to contribute selflessly and constructively towards the school's growth. When teachers feel supported and respected, they are more likely to invest in the organization's well-being. Ultimately, these findings suggest that enhancing teachers' intellectual abilities, emotional intelligence, and ethical behaviour is key to improving teaching quality and school harmony. Faculty development programs that strengthen both academic skills and qualities such as empathy, respect, and commitment to institutional goals can foster a positive, supportive academic environment, which is essential for long-term success in higher education in Kerala.

8.3 Findings for Third Objective

- **To examine the performance excellence among government aided colleges in Kerala using multidimensional indicators**

The attainment of the objective provides a comprehensive investigation into performance excellence among government-aided colleges in Kerala, focusing on the combined dimensions of academic service orientation and pedagogical innovation. These dimensions represent the service responsiveness and instructional advancements within higher education institutions. The study employs rigorous statistical and multilevel analytical methods to assess institutional performance against benchmarks, categorize institutions by excellence, and examine how organisational and behavioural characteristics influence these outcomes. It highlights the roles of governance structure, accreditation status, autonomy, and internal organisational ecosystems, such as trust, teamwork, fairness, and role clarity, in shaping institutional excellence. The findings underscore that excellence emerges from layered organisational processes rather than single-factor influences, offering both theoretical insights and practical implications for enhancing institutional performance across Kerala's higher education institutions.

8.3.1 Confidence Interval Evidence Confirming Strong Academic Service Orientation

The results indicate that academic service orientation is firmly present across institutions. The observed range of values lies well above the benchmark level,

indicating that respondents consistently perceive academic support, responsiveness, and service commitment as well established. This pattern reflects a stable institutional culture in which academic services are not occasional practices but regular and dependable features of institutional functioning. The narrow spread of responses further indicates that this perception is widely shared rather than limited to a small group.

- **Positive Pedagogical Innovation Practices Existing Across Institutions**

Pedagogical innovation is also clearly evident across institutions. The observed values remain fully above the reference level, demonstrating that teachers recognise the presence of modern teaching approaches, instructional creativity, and learner-oriented practices. Although responses vary slightly more than those for academic service orientation, the overall pattern still indicates a consistently favourable perception. This suggests that innovative teaching is not confined to isolated departments but is recognised across the institutional environment.

- **Overall Strength of Institutional Excellence Dimensions**

Taken together, both academic service orientation and pedagogical innovation are at clearly positive levels. The results show that institutions are not only committed to providing academic support services but also actively incorporating progressive teaching practices. The consistency of responses confirms that these strengths reflect genuine institutional characteristics rather than temporary or situational effects. This reinforces confidence that the institutions studied have a stable foundation for quality enhancement and educational effectiveness.

- **Clear Evidence Supporting Three Distinct Institutional Profiles**

The clustering procedure identifies three clearly separated groups of institutions based on their combined performance in academic service orientation and pedagogical innovation. The pattern of grouping shows a strong structure in the data, meaning institutions naturally fall into distinct categories rather than forming a single undifferentiated group. The existence of well-separated clusters indicates that institutions differ meaningfully in how strongly they demonstrate these qualities.

- **Strong Separation Among Institutional Groups**

The distance pattern between clusters reveals that the strongest-performing and weakest-performing groups are far apart, while another group falls between them. This shows that institutional differences are not random but follow a clear progression from lower to higher levels of excellence. Such separation confirms that the classification is meaningful and reflects real differences in institutional functioning rather than statistical coincidence.

- **Stable and Reliable Cluster Formation**

The clustering process stabilised quickly, indicating that the group structure is reliable. When clustering results stabilise within a small number of steps, it suggests that the grouping is not sensitive to minor variations in the data. This strengthens confidence that the identified institutional categories represent consistent and dependable classifications.

- **Presence of Three Distinct Institutional Excellence Types**

The three groups can be understood as institutions with strong characteristics, institutions with moderate but consistent characteristics, and institutions with comparatively limited characteristics. The largest share of respondents belongs to the strong-characteristics group, indicating that favourable institutional practices dominate the overall sample. At the same time, the presence of smaller groups with moderate and limited characteristics highlights variation that deserves attention.

- **Majority Presence of Strong Institutional Orientation**

Most respondents fall into the group characterised by a strong academic service orientation and pedagogical innovation. This indicates that positive institutional practices are widespread rather than rare. However, the smaller group with comparatively limited characteristics represents an important segment that may benefit from targeted improvement strategies. Recognising this variation allows policymakers and administrators to design interventions that strengthen weaker segments while sustaining strengths in already well-performing institutions.

8.3.2 Organisational Drivers of Academic Service Orientation and Pedagogical Innovation after Controlling for Organisational Citizenship Behaviour

- **Organisational Conditions Supporting Academic Service Orientation**

The results indicate that each organisational factor maintains a meaningful positive relationship with academic service orientation, even after controlling for Organisational citizenship behaviour. This shows that institutional qualities such as fairness, recognition, role clarity, and supportive climate do not merely encourage voluntary effort but directly shape how teachers approach academic service responsibilities. When Organisational citizenship behaviour is taken into account, the relationships become smaller yet remain strong, demonstrating that these organisational features are genuine drivers rather than superficial influences. In particular, recognition and motivation, organisational justice, and supportive climate continue to show the strongest connections, suggesting that teachers respond most strongly to environments where their contributions are acknowledged, treated fairly, and supported institutionally.

- **Role of Organisational Citizenship Behaviour in Strengthening Service Orientation**

The decrease in connection strength after considering citizenship behaviour suggests that voluntary professional attitudes serve as a reinforcing factor. Personal citizenship actions seem to boost individual commitment to academic service, while organizational citizenship reflects a collective culture that bolsters institutional systems. This implies that when teachers willingly collaborate, support colleagues, and take initiative, institutional policies become more effective in encouraging service-oriented behaviour. Therefore, citizenship behaviour does not substitute organizational structures but enhances their influence.

- **Organisational Foundations of Pedagogical Innovation**

A similar pattern emerges for pedagogical innovation. Organisational factors remain strongly linked to innovative teaching practices even when Organisational citizenship behaviour is taken into account. This confirms that innovation is not

dependent only on personal enthusiasm or voluntary effort. Instead, it is grounded in formal institutional arrangements such as clear roles, fair systems, leadership support, and recognition practices. Among these, role clarity and recognition mechanisms appear particularly influential, indicating that teachers are more likely to innovate when expectations are clearly defined and their efforts are valued.

- **Organisational Citizenship Behaviour as a Catalyst for Innovation**

The reduction in relationships after controlling for Organisational citizenship behaviour demonstrates that innovation is partly encouraged by collaborative spirit and professional goodwill. Organisational citizenship behaviour seems particularly important because it reflects a shared academic culture that promotes cooperation, idea exchange, and openness to experimentation. When teachers collectively support one another, innovative practices spread more easily across departments and classrooms. This shows that innovation thrives not only through institutional policy but also through a collegial academic environment.

- **Dual Mechanism Underlying Institutional Excellence**

Taken together, the findings demonstrate a dual mechanism that shapes both academic service orientation and pedagogical innovation. Organisational systems provide the structural foundation, while citizenship behaviour enhances their expression. Institutional policies ensure consistency and stability, whereas voluntary professional conduct accelerates effectiveness and diffusion. This complementary relationship indicates that neither structural systems nor behavioural culture alone is sufficient; both must operate together to produce sustained academic excellence.

8.3.3 Strong Alignment between Organisational Citizenship Behaviour and Institutional Excellence Levels

- **High Interpersonal Citizenship Behaviour Concentrated Within Highly Excellent Institutions**

The distribution shows that institutions classified as High Institutional Excellence have the largest share of respondents across all levels of interpersonal citizenship behaviour, with the strongest concentration among those displaying high

levels. This pattern indicates that institutions demonstrating advanced excellence are typically characterised by individuals who actively support colleagues, cooperate willingly, and contribute beyond formal job requirements. The near-total presence of moderate interpersonal citizenship behaviour within highly excellent institutions further reinforces that even consistent, everyday cooperative conduct is closely aligned with stronger institutional functioning.

- **Low Interpersonal Citizenship Behaviour Dominant Within Emerging Institutions**

Institutions identified as Emerging Institutional Excellence are largely associated with low levels of interpersonal citizenship behaviour. The presence of minimal or absent moderate behaviour in this category suggests that early-stage institutions have not yet developed a stable culture of voluntary cooperation and peer support. This pattern indicates that weaker interpersonal engagement may coexist with limited institutional maturity, highlighting a behavioural gap that differentiates emerging institutions from more established ones.

- **Developing Institutions Positioned Between Behavioural Extremes**

Institutions categorized as Developing Institutional Excellence occupy an intermediate position, with noticeable representation across all behaviour levels but a closer association with low interpersonal citizenship behaviour than with high levels. This placement reflects a transitional stage in which organisational systems may be improving, but the interpersonal culture has not yet fully matured. The distribution of cases across behaviour categories suggests variability in internal culture, which may reflect institutions undergoing structural growth while still consolidating their behavioural foundation.

- **Single Dominant Pattern Explains the Relationship**

The dimensional summary indicates that nearly the entire relationship between interpersonal citizenship behaviour and institutional excellence is captured by a single dominant pattern. This suggests the association is not scattered or inconsistent but follows a clear directional trend. Differences among excellence categories are therefore

closely tied to differences in interpersonal citizenship behaviour, confirming that this behavioural dimension is a central distinguishing factor among institutional groups.

- **Interpersonal Behaviour as a Core Differentiating Factor**

The strong concentration of association within one primary dimension demonstrates that interpersonal citizenship behaviour functions as a central explanatory mechanism rather than a minor influence. Institutions differ mainly in how strongly members express these voluntary supportive behaviours. This indicates that behavioural culture is not secondary to institutional performance but closely intertwined with it.

- **Visual Pattern Reinforces Statistical Relationship**

The categories representing high institutional excellence are closest to high interpersonal citizenship behaviour, while emerging institutions are closer to low levels of behaviour. Developing institutions lie between these points, reinforcing the interpretation that institutional categories align along a behavioural progression. The vertical separation between developing and emerging institutions indicates that, although both fall short of high excellence, they differ internally, suggesting distinct developmental conditions within non-advanced institutions.

- **Strong Citizenship Behaviours in Top-Performing Institutions**

Top-performing institutions are characterized by employees who show high levels of organisational citizenship behaviour. This means that staff in these institutions go beyond their formal job responsibilities, supporting colleagues, adhering to rules, and contributing positively to the institution. In simple terms, institutions with the highest levels of excellence are supported by people who actively contribute to the organisation in a way that goes beyond just doing their jobs.

- **Emerging Institutions Struggle with Low Citizenship Behaviour**

Early-stage institutions often exhibit weaker organisational citizenship behaviours, indicating that staff are less engaged, cooperative, or inclined to go beyond their basic responsibilities. These institutions still need to develop a culture where employees feel motivated to support each other and contribute extra effort.

- **Developing Institutions Are Between Low and High Citizenship Behaviours**

Institutions striving for excellence exhibit a range of behaviours. Some staff display strong citizenship, while others remain less engaged. This reflects their transitional phase, where organisational systems are evolving, yet the internal culture of cooperation and commitment continues to develop.

- **Citizenship Behaviour as the Main Driver of Institutional Excellence**

The analysis indicates that the key factor setting high-performing institutions apart is the extent of supportive and cooperative behaviours among their members. This suggests that organisations fostering better teamwork, greater trust, and a culture of mutual assistance tend to achieve top performance. Behavioural engagement significantly influences the overall success of institutions.

- **Behavioural Alignment is Key for High Excellence**

The map and patterns indicate that high institutional excellence is directly tied to the level of organisational citizenship behaviour. Institutions with high excellence ratings are closely associated with high levels of cooperative and voluntary staff behaviours. The stronger the citizenship behaviours, the more likely an institution is to be recognised as excellent.

- **Emerging institutions must foster stronger behavioural engagement.**

The analysis indicates that while these institutions are still developing, they should prioritize cultivating robust citizenship behaviours. As they establish their foundation, enhancing staff involvement and voluntary support is crucial for reaching a higher standard of excellence. Merely implementing good systems is insufficient; a cultural transformation is needed to encourage genuine support and collaboration among everyone.

- **A Clear Progression Towards Excellence Linked to Citizenship Behaviour**

The findings reveal a clear progression: institutions with low levels of citizenship behavior tend to be at the emerging stage, while those with high levels are often in the high-excellence category. This shows that institutional excellence isn't just about systems and infrastructure; it's about how well the people in the

institution work together, support each other, and go beyond their immediate roles. Moving from emerging to developing and then to high excellence is strongly connected to improving staff behavior and engagement.

- **Behavioural Gradient Across Institutional Categories**

Taken together, the findings show a gradual progression from emerging to developing to highly excellent institutions, paralleling a shift from lower to higher interpersonal citizenship behaviour. This consistent gradient indicates that institutional categories are not randomly distributed but follow an ordered behavioural pattern. The presence of this progression suggests that differences among institutions are systematically related to the extent to which cooperative and supportive behaviours are expressed.

The analysis demonstrates a clear, structured association between interpersonal citizenship behaviour and the institutional excellence categories. Institutions displaying stronger supportive and cooperative interpersonal conduct are more frequently associated with higher excellence classifications, whereas those with weaker interpersonal behaviour tend to fall into lower excellence categories. The consistency of this pattern across both statistical and visual evidence confirms that interpersonal citizenship behaviour is a defining characteristic that distinguishes institutional excellence levels.

8.3.4 Institutional Excellence and Accreditation Status Showing Distinct but Related Patterns

- **High Excellence Frequently Appearing Without Accreditation**

A notable proportion of institutions that demonstrate a strong academic service orientation and innovative teaching practices are in the non-accredited category. This pattern indicates that institutional excellence can exist even when formal accreditation has not yet been obtained. The distribution suggests that many academically strong institutions may not have completed the procedural or documentation requirements necessary for accreditation recognition.

- **Developing Institutions Concentrating Within Structured Accreditation Bands**

Institutions in the developing excellence category appear more often in mid- to higher-accreditation grades, particularly in the B+ and B++ ranges. This pattern suggests that these institutions are progressing along structured quality improvement pathways that align with formal accreditation processes. Their position reflects a stage in which systems and procedures are being strengthened alongside academic practices.

- **Emerging Institutions Clustered Around Transitional Accreditation Levels**

Institutions categorized as emerging are primarily concentrated in the B+ grade. This pattern indicates that institutions in early developmental stages often fall within transitional accreditation positions. Their placement reflects partial readiness, with certain systems in place but overall institutional maturity still evolving.

- **Clear Overall Relationship Between Excellence Category and Accreditation Level**

The statistical summary confirms that the institutional excellence category and accreditation status are related in a consistent and meaningful way. The association is structured rather than random, indicating that accreditation categories and excellence clusters align in an observable pattern.

- **One Dominant Pattern Explaining Most of the Relationship**

Most of the connection between excellence clusters and accreditation categories is explained by a single underlying pattern. This means the relationship is driven primarily by a single central factor that distinguishes institutions. The evidence suggests that this dominant factor is more closely related to procedural preparedness and institutional systems than to academic quality alone.

- **Accreditation and Excellence Functioning as Separate Dimensions**

The distribution demonstrates that accreditation status and institutional excellence do not always move together. Some institutions with strong academic and pedagogical characteristics lack accreditation, while others with accreditation do not always demonstrate equally strong excellence characteristics. This shows that the two represent related but distinct institutional dimensions.

- **Visual Pattern Reinforcing the Statistical Structure**

The correspondence plot visually confirms the same trend. High excellence institutions appear closest to the non-accredited category, while developing institutions align more closely with higher accreditation grades. Emerging institutions appear separated from most accreditation categories, indicating that they form a distinct group rather than fitting neatly into existing accreditation patterns.

- **Transitional Nature of Certain Accreditation Levels**

The placement of the B+ category within the visual structure suggests it serves as an intermediate accreditation stage rather than a stable classification. Its relative distance from all clusters indicates that it represents institutions in transition rather than those firmly positioned within a specific excellence category.

Institutional excellence and accreditation status are associated, but they do not represent the same phenomenon. Excellence reflects underlying academic capability and institutional practice, whereas accreditation reflects readiness in systems, documentation, and procedural alignment. The findings demonstrate that institutional evaluation should consider both dimensions separately to obtain an accurate understanding of institutional performance and development stage.

8.3.5 Impact of Institutional Autonomy on Service Orientation and Innovation

- **Institutional Autonomy Doesn't Affect Academic Service Orientation**

The analysis indicates no significant difference in academic service orientation between autonomous and non-autonomous institutions. While autonomous institutions score a bit higher, the difference is not statistically meaningful. This implies that an institution's capacity to deliver academic services depends more on factors like organisational culture, leadership quality, and faculty motivation than on its structural autonomy.

- **Institutional Autonomy Enhances Pedagogical Innovation**

By contrast, institutional autonomy clearly fosters pedagogical innovation. Institutions with independence exhibit markedly higher levels of innovation in their

teaching approaches compared to those without autonomy. This indicates that allowing institutions the freedom to make their own academic choices, such as developing curricula, testing new teaching strategies, and implementing novel assessments, encourages more creative and innovative educational practices.

- **Autonomy Improves Innovation, Not Service Orientation**

While institutional autonomy contributes to pedagogical innovation, it does not appear to significantly affect academic service orientation. This finding emphasizes that while autonomy can encourage flexibility and innovation, improving service orientation within institutions requires nurturing other factors, such as organisational culture and leadership.

- **Policy Implications: Autonomy Should Be Combined with Other Initiatives**

The findings suggest that while autonomy fosters innovation, it alone does not guarantee comprehensive institutional excellence. Therefore, policymakers and administrators should not only grant autonomy but also complement it with efforts to enhance institutional culture, leadership, and faculty motivation to ensure excellence across all areas of the institution.

8.3.6 Impact of Type of management in Institutional excellence

- **No Significant Impact of Management Type on Service Orientation**

The study found no meaningful difference in how minority and non-minority institutions approach academic service orientation. Both types of institutions show nearly identical scores, indicating that the way an institution is managed (minority vs. non-minority) does not significantly affect staff service orientation. This suggests that the quality of service in an institution is more influenced by its internal culture, leadership, and the commitment of its staff than by whether the institution is minority managed or not

- **No Significant Impact of Management Type on Pedagogical Innovation**

The study also revealed that management type, i.e., minority or non-minority, does not significantly affect innovation in teaching practices within the institution. While non-minority institutions tended to have marginally higher scores for pedagogical innovation,

this difference was not statistically significant. This suggests that factors like the academic climate, faculty motivation, and resource availability play a more crucial role in driving innovative teaching practices than the management's minority status.

8.3.7 Impact of Accreditation on Institutional Excellence

- **Impact of Accreditation on Academic Service Orientation**

The analysis reveals that accreditation status significantly influences Academic Service Orientation. Institutions that are not accredited generally perform better in terms of academic service orientation compared to those with a B+, B++, or higher accreditation. Specifically, Not Accredited institutions show higher levels of academic service orientation compared to B+ and B++ institutions. However, the difference between Not Accredited and B institutions is not significant. This suggests that while accreditation plays a role, institutions without accreditation can still demonstrate a strong service orientation, and the B+ group tends to score lower than other groups on service orientation.

- **Impact of Accreditation on Pedagogical Innovation**

The analysis also shows that accreditation significantly affects Pedagogical Innovation. Similar to Academic Service Orientation, Not Accredited institutions demonstrate higher levels of pedagogical innovation compared to B, B+, and B++ institutions. B grade institutions, however, also perform better in terms of innovation compared to B+ institutions. This indicates that accreditation does affect the adoption of innovative teaching practices, but institutions without accreditation or with lower accreditation (B grade) appear more innovative than their higher-rated counterparts.

8.3.8 Impact of Autonomy and Types of Management among Academic Service Orientation

- **Impact of Autonomy on Academic Service Orientation**

The findings indicate that institutional autonomy, whether an institution is allowed to make its own decisions, does not significantly impact how academic service orientation is managed. The score differences between autonomous and non-autonomous institutions are minimal, implying that autonomy alone does not greatly

enhance or impair service to the academic community. Instead, other factors, such as internal culture, leadership, and staff motivation, are more likely to shape academic service orientation. While autonomy may offer some benefits, it is not the primary factor driving improvements in academic service.

- **Management Type Does Not Influence Service Orientation Through Autonomy**

When combining management type (minority or non-minority institution) with autonomy status, the relationship between autonomy and academic service orientation does not differ by management type. In other words, being a minority or non-minority institution does not affect how autonomy affects service orientation. This means that autonomy has no stronger or weaker impact, whether the institution is minority-managed or non-minority-managed. Both factors act independently, with no significant combined effect.

8.3.9 Impact of Management Type and Accreditation Level on Academic Service Orientation

- **Non-Accredited Institutions**:
  - **Non-Minority Institutions**: These institutions exhibit a significantly higher level of academic service orientation than minority institutions. This suggests that when institutions are not accredited, non-minority institutions tend to focus more on academic services, which may be driven by their internal culture, governance, or leadership practices.
  - **Minority Institutions**: While they still perform decently, their service orientation is lower than that of their non-minority counterparts. The difference becomes more evident in the non-accredited stage, suggesting that minority institutions may face structural or resource constraints that affect their academic services.

- **Grade B Institutions**:
  - **Minority Institutions**: For institutions at Grade B, minority-managed ones show a slight edge over non-minority institutions in terms of academic service orientation. This shift in performance highlights that

the accreditation process (moving from "Not Accredited" to Grade B) brings a more balanced focus on academic service orientation, where minority institutions are starting to meet expectations, albeit modestly.

- **Non-Minority Institutions:** Although they rank below minority institutions at Grade B, they still maintain a solid academic service orientation. The slight dip indicates that the influence of accreditation on service orientation is beginning to vary by management type.

- **Grade B Plus Institutions**:
  - **Non-Minority Institutions**: At this higher grade level, non-minority institutions perform better in terms of academic service orientation. The sharp upward trend in the graph shows that non-minority institutions significantly improve their academic services as they move up the accreditation scale.
  - **Minority Institutions**: At this stage, minority institutions tend to show a slight decline in academic service orientation compared with non-minority institutions. This suggests that as institutions with Grade B+ become more competitive, the management type (minority vs. non-minority) plays a more crucial role in driving service orientation.

- **Grade B++ and Above**:
  - **Minority Institutions**: At the highest levels of accreditation (B++ and above), minority institutions show a slight increase in service orientation compared with non-minority institutions. However, the difference is minimal and shows a downward slope on the graph, suggesting that as institutions reach the top tier of accreditation, differences between management types diminish.
  - **Non-Minority Institutions**: Although they perform well, their academic service orientation tends to plateau once they achieve high accreditation levels. This indicates that at very high accreditation levels, factors such as internal governance and management become less critical in shaping service orientation.

This analysis confirms that both accreditation and management type play significant roles in determining an institution's academic service orientation, but their effects vary across different accreditation levels. Institutions should prioritize holistic development, balancing both structural elements (accreditation) and management dynamics (minority vs non-minority) to enhance their service orientation.

8.3.10 Interaction between Management Type and Accreditation Grade on Academic Service Orientation

- **Interaction Between Management and Accreditation**:

The analysis shows that accreditation influences academic service orientation differently depending on the type of management an institution has, regardless of whether it is autonomous. This means that institutions with different management structures (such as minority- or non-minority-owned) will experience the impact of their accreditation grade differently.

- **Impact of Accreditation on Institutions with Different Management Types**:

The results indicate that accreditation can have different effects on institutions depending on their management structures. For instance, a non-minority institution may experience a stronger or weaker impact from its accreditation grade than a minority institution. The effect is statistically significant but small, explaining only a small share of the variation in academic service orientation.

- **Control for Autonomy**:

When autonomy status is controlled for, the interaction between management type and accreditation grade remains significant. This reinforces the idea that the combined effect of management type and accreditation level is more important than institutional autonomy in shaping academic service orientation. Therefore, institutional policies should focus on both management structure and accreditation efforts to improve service orientation.

This analysis emphasizes that the effectiveness of accreditation policies is not universal but varies by the type of management an institution has. Institutions need

to tailor their accreditation and governance approaches to enhance their academic service orientation and achieve sustained excellence.

8.3.11 No Significant Interaction between Management Type and Autonomy on Pedagogical Innovation

The analysis indicates that management type (minority vs non-minority) does not significantly interact with institutional autonomy in promoting pedagogical innovation. In other words, an institution's level of autonomy does not alter how management type affects its capacity for teaching innovation. The lack of interaction effect suggests that to enhance pedagogical innovation, institutions should focus on enhancing their internal academic culture, leadership, and faculty development rather than relying on their management structure or autonomy status.

8.3.12 No Significant Interaction between Management Type and Accreditation Grade on Pedagogical Innovation

The analysis shows that the combination of management type (minority vs. non-minority) and accreditation grade (e.g., B, B+, B++) does not have a significant impact on pedagogical innovation. This means that whether an institution is minority-managed or non-minority-managed, and regardless of its accreditation status, the ability to innovate in teaching practices is not influenced by these factors.

- **Accreditation Does Not Influence Innovation Differently by Management Type**:

The analysis indicates that while accreditation grade (e.g., B, B+, B++) does influence pedagogical innovation, it does so similarly across different management types. In simpler terms, the accreditation level has the same impact on innovation regardless of whether the institution is minority-managed or non-minority-managed.

8.3.13 Impact of Institutional Factors on Academic Service Orientation and Pedagogical Innovation

- **Management Type and Accreditation Grade Do Not Significantly Affect Academic Service Orientation and Pedagogical Innovation**:

The analysis shows that management type (minority vs non-minority) and accreditation grade do not jointly have a statistically significant impact on academic

service orientation or pedagogical innovation when institutional autonomy is considered. This indicates that their combined influence on teaching practices and service orientation is minimal. The study emphasizes that internal factors like leadership quality, faculty development, and teaching culture are far more influential.

- **Accreditation Grade Still Has a Significant Effect on Institutional Excellence**:

Accreditation grade greatly impacts both academic service orientation and pedagogical innovation. Institutions with higher grades generally perform better in these areas. Nonetheless, the effect is moderate, as reflected by small to moderate effect sizes. This implies that while accreditation is important, other internal factors, such as leadership and teaching culture, also play vital roles in achieving institutional excellence.

- **Understanding Variability in Innovation Across Institutions**:

There is a clear pattern showing that institutions with higher accreditation grades tend to be more effective at pedagogical innovation. However, the influence of accreditation on innovation varies across management types. Institutions with B or B+ grades show significantly higher innovation scores than those with lower grades. The key takeaway is that accreditation plays a differentiating role, but internal drivers of innovation, such as faculty motivation and innovation incentives, remain fundamental to advancing pedagogical practices.

The multivariate tests show that accreditation status is a key factor influencing institutional excellence, though its effects are moderate. It is important for policymakers and accreditation bodies to recognize that accreditation should be viewed as a tool for quality improvement, not as the sole determinant of institutional success. Institutions should not rely solely on their accreditation status to gauge or improve excellence.

In conclusion, the findings highlight that internal institutional factors, especially related to leadership, faculty development, and teaching culture, have a stronger impact on both academic service orientation and pedagogical innovation

than management type or accreditation alone. Institutions aiming for excellence should focus on improving these internal drivers while ensuring that accreditation efforts are aligned with their internal development strategies.

8.3.14 Joint Influence of Type of Management and NAAC Grade on Institutional Excellence

- **Institutional Autonomy Plays a Significant Role**:

The findings confirm that institutional autonomy has a strong, statistically significant effect on institutional excellence. This means that institutions with greater autonomy tend to perform better in areas such as academic service orientation and pedagogical innovation. Autonomy influences performance across multiple outcomes, making it a key driver of institutional success.

- **Type of Management Alone Does Not Affect Institutional Excellence**:

Management type (minority vs. non-minority) does not independently affect an institution's performance, academic service orientation, or pedagogical innovation. This suggests that management structure alone, without considering other factors such as accreditation or autonomy, does not determine an institution's overall performance.

- **Accreditation Grade Influences Performance Modestly**:

Accreditation grade has a small but significant impact on institutional outcomes. Higher grades, such as B++ and above, are associated with stronger performance in academic service orientation and pedagogical innovation. However, the effect is modest, indicating that accreditation is important but not the sole determinant of institutional excellence.

- **The Interaction Between Management Type and Accreditation Grade is Significant**:

The relationship between management type and accreditation grade continues to be significant when considering autonomy, suggesting that accreditation's impact on institutional performance varies between minority and non-minority

institutions. Essentially, institutions with comparable accreditation levels but differing management structures might exhibit different levels of performance.

- **The Need for Differentiated Approaches Based on Institutional Characteristics**:

The results show that institutional excellence is not evenly distributed across institutions. Some institutions maintain stable performance, while others show greater variability. This calls for differentiated improvement strategies. For example, struggling institutions may need more focused support in areas such as leadership development, while those with stable performance might benefit from further enhancing pedagogical innovation or service orientation.

8.3.15 Joint Influence of Type of Management and NAAC Grade on Institutional Excellence with Autonomy as a Covariate

- **Institutional Autonomy Plays a Significant Role**:

The findings show that autonomous status significantly affects the combined outcomes of academic service orientation and pedagogical innovation. This means that institutions with greater autonomy tend to perform better in both areas, regardless of their management type or accreditation level.

- **Type of Management Alone Does Not Influence Institutional Excellence**:

Type of management (minority vs non-minority) does not independently influence institutional excellence in service orientation or innovation, once autonomy is accounted for. This suggests that the management structure alone does not play a major role in determining an institution's performance, as it is overshadowed by other factors such as autonomy and accreditation.

- **Accreditation Grade Matters, But Moderately**:

Accreditation grade has a small but significant effect on institutional excellence, with institutions with higher accreditation scores performing better. However, this effect is modest compared to that of autonomy, suggesting that accreditation alone is insufficient to ensure excellence. Higher-grade institutions do show improved outcomes, but the improvement is not overwhelming.

- **The Combined Influence of Management and Accreditation is Significant**:

The significant interaction between management type and accreditation grade persists even when autonomy is accounted for. This indicates that accreditation influences institutional outcomes differently depending on whether the institution is managed by minorities or non-minorities. Consequently, policies and reforms designed to enhance institutional quality should take both management type and accreditation level into account for greater effectiveness.

8.3.16 Drivers of Institutional Excellence

- **Institutional Accreditation Grade Alone Is Not Sufficient**:

In the initial model, the NAAC grade was found to have a moderate negative effect on institutional excellence. Institutions with higher accreditation grades tend to report lower excellence scores. This suggests that the accreditation grade primarily reflects structural classification rather than functional excellence. The findings imply that improving institutional rankings alone, without focusing on internal dynamics, does not guarantee excellence.

- **Psychosocial Workplace Environment Plays a Significant Role**

Adding psychosocial workplace factors like role clarity, recognition, leadership, and justice greatly enhanced the model's ability to explain outcomes. Specifically, role clarity and recognition stood out as key positive factors linked to institutional excellence, highlighting that the organizational environment plays a vital role beyond external rankings. These results imply that institutions should prioritize establishing clear roles, implementing fair policies, and developing recognition programs to boost performance, instead of depending only on accreditation scores.

- **Employee Collaboration and Trust Drive Excellence**:

When factors such as teamwork, trust, and satisfaction were included in the model, trust in management and teamwork emerged as the strongest predictors of institutional excellence. This indicates that institutional excellence is driven by how employees interact, collaborate, and trust their leadership. It suggests that building a

cooperative culture and fostering trust-based management should be priorities for institutions aiming for excellence.

- **Individual Organisational Citizenship Behaviours Are Important, But Not All Behaviours Matter Equally**:

Adding individual citizenship behaviours (such as courtesy and altruism) revealed that some behaviours, such as courtesy, significantly influence institutional excellence, while others, such as altruism and civic virtue, have a minimal impact. This suggests that not all prosocial behaviours contribute equally to institutional performance. Institutions should focus on fostering professionalism and respectful interaction, which have a measurable impact on institutional excellence.

- **Comprehensive Institutional Excellence Is Driven by Relational and Structural Factors**:

The final model, which included all predictors, emphasized that institutional excellence is primarily determined by relational and structural factors such as trust in management, teamwork, role clarity, and courtesy. While NAAC grade remained statistically significant, it had a weaker effect compared to internal factors, confirming that internal governance structures and employee dynamics are the key drivers of institutional excellence.

- **Leadership and Organisational Culture Are Key**:

Leadership and teamwork were identified as central drivers of excellence, underscoring that trust-building and collaborative structures are essential to achieving high levels of institutional performance. Recognition and justice also played important roles, reinforcing the idea that organizational culture directly impacts institutional outcomes.

6.3.17 Conclusion

The study underscores that the key to institutional excellence in government-aided colleges lies mainly in internal organisational factors like trust in management, teamwork, clarity of roles, recognition programs, and fairness within the organisation, rather than structural elements such as accreditation, governance categories, or

autonomy levels. It illustrates a developmental hierarchy where the organisational environment impacts relational dynamics, which then influence behavioural patterns and ultimately determine institutional success. This highlights that reforms focusing only on structural aspects, such as rankings or regulatory status, are insufficient unless they are complemented by initiatives that enhance organisational climate, foster collaboration, and build trust-based governance. Achieving sustainable institutional excellence requires an integrated approach that develops governance systems, human resource practices, and behavioural engagement. The study provides practical insights for institutional leaders and policymakers to concentrate on improving internal environments and employee involvement for long-term performance gains.

8.4 Findings for Fourth Objective

- **To develop a comprehensive research model for Govt. Aided HEIs in Kerala by exploring the mediating role of OCB-I and O and moderating effect of academic enthusiasm of faculties in the relationship between sustainable HRM ecosystem and intuitional excellence using moderated mediation approach**

The model presented in this study seeks to explore the intricate relationships among sustainable human resource management (HRM) practices, organizational citizenship behaviour (OCB), and institutional excellence in government-aided higher education institutions in Kerala. By integrating elements of sustainable HRM ecosystems with faculty members' discretionary behaviours, the model aims to illustrate how internal people-centric systems can foster a culture of collaboration and academic excellence. This analysis presents key findings derived from the model, focusing on how these interconnected elements contribute to both individual and organizational outcomes. The findings highlight the importance of creating supportive environments that enhance faculty engagement, cooperation, and commitment, while also emphasizing the role of academic enthusiasm in strengthening these relationships. The results show that institutional excellence emerges not solely from external reforms or infrastructural changes, but primarily through the cultivation of positive behaviours within a sustainable HRM framework.

- **Sustainable Human Resource Management Ecosystem as a consistent driver of institutional excellence**

The model results establish that a sustainable human resource management ecosystem contributes positively to institutional excellence in Government-Aided higher education institutions in Kerala. This indicates that strengthening core human resource systems such as transparent governance, fair workload distribution, staff development, and supportive leadership creates an institutional foundation that supports excellence even before considering behavioural and motivational mechanisms. The practical meaning is that institutional excellence is not achieved only through external reforms or infrastructure, but also through internally managed people-centric systems that improve academic functioning.

It denotes that when the college management system is clear, fair, and supportive, the college performs better. Simply put, good administration and fair treatment of teachers can improve the overall quality of the institution even without big external changes.

- **Sustainable Human Resource Management Ecosystem activates discretionary faculty behaviours at the individual level**

The findings confirm that sustainable human resource management practices significantly enhance organizational citizenship behaviour at the individual level. This means that when faculty members experience fair policies, developmental support, recognition, and participative practices, they are more likely to engage in voluntary behaviours such as mentoring, helping colleagues, supporting students beyond role requirements, and contributing to academic tasks without formal compulsion. This is an important behavioural confirmation because it shows that citizenship behaviour is not merely a personality outcome but a manageable institutional outcome.

When teachers feel respected and supported, they naturally do extra good work without being forced. In simple terms, fair and caring management makes teachers willingly help students and colleagues beyond their formal duty.

- **Individual citizenship behaviour transforms into organisational citizenship culture**

The results show that organizational citizenship behaviour at the individual level positively influences organizational citizenship behaviour at the organisational level, indicating a behavioural aggregation process. When voluntary behaviours become frequent at the individual level, they gradually evolve into shared norms and collective culture, strengthening cooperation, collaboration, and institutional commitment. This suggests that culture building in colleges is strongly linked with everyday discretionary conduct of faculty members, rather than only policy statements or formal committees.

When many teachers start doing small helpful actions regularly, it becomes the "normal culture" of the college. In simple words, good culture is built by daily good behaviour, not just by writing rules or forming committees.

- **Organisational citizenship behaviour contributes strongly to institutional excellence**

The study confirms a strong positive association between organizational citizenship behaviour at the organisational level and institutional excellence. This indicates that collective behavioural climate, such as shared responsibility, academic collaboration, mutual support, and willingness to engage in institutional development activities, is a key pathway through which institutional excellence is enhanced. The practical implication is that institutional excellence becomes more sustainable when it is supported by a citizenship culture rather than only by administrative controls.

When the whole staff works together with a helping attitude, the college becomes better in results and reputation. In plain language, teamwork and shared responsibility make the institution stronger than strict control and pressure.

- **Serial mediation is established in both academic enthusiasm conditions**

The bootstrapping results show that organizational citizenship behaviour at the individual level and organisational level jointly function as serial mediators between sustainable human resource management ecosystem and institutional excellence in

both low and high academic enthusiasm groups. This means that sustainable human resource management ecosystem improves institutional excellence partly by shaping faculty behaviour in a sequential pattern. The key inference is that institutional performance improvement is not only a direct administrative output; it emerges through behavioural conversion processes.

A good human resource system improves college quality mainly by changing behaviour step by step. In simple terms, good management first improves individual teacher behaviour, then that spreads into a group culture, and finally the institution becomes excellent.

- **Academic enthusiasm strengthens most behavioural pathways but not the direct system-to-excellence link**

Multi-group comparison indicates that academic enthusiasm does not significantly alter the direct relationship between sustainable human resource management ecosystem and institutional excellence. However, academic enthusiasm significantly strengthens the path from sustainable human resource management ecosystem to organizational citizenship behaviour at the individual level, strengthens the conversion of individual citizenship into organisational citizenship, and strengthens the impact of organisational citizenship on institutional excellence. This shows that sustainable systems matter across motivation levels, but motivated faculty enable the system to produce stronger behavioural outcomes and stronger culture-to-performance conversion.

Even if teachers are not highly enthusiastic, good systems can still improve the college. But when teachers are highly enthusiastic, the same system produces much stronger positive behaviour, stronger teamwork culture, and better institutional results. In simple words, systems work for everyone, but enthusiastic teachers make the system's benefits grow faster and bigger.

- **The conditional indirect effect is stronger when academic enthusiasm is high**

The indirect effect is substantially higher in the high academic enthusiasm group than in the low academic enthusiasm group, confirming that the behavioural

transmission mechanism becomes stronger with higher enthusiasm. This supports the moderated mediation proposition and indicates that academic enthusiasm serves as a contextual enhancer of the behavioural pathway linking sustainable systems to excellence.

The "chain effect" from good management to good behaviour to college excellence becomes much stronger when teachers are enthusiastic. In plain language, enthusiasm works like a booster, helping the institution convert good policies into real performance through teacher actions and teamwork.

8.5 Summary of the Findings

This comprehensive research model emphasizes that a sustainable human resource management ecosystem is essential for achieving institutional excellence in government-supported higher education institutions in Kerala. The study shows that transparent governance, equitable workload allocation, faculty development, and supportive leadership are fundamental to academic success, promoting a culture of collaboration and dedication. When individuals engage in discretionary behaviours, these practices gradually shift into a collective organizational culture that boosts overall institutional performance. Additionally, academic enthusiasm strengthens this connection, indicating that while effective HRM systems benefit all faculty, motivated individuals can greatly amplify their impact. Ultimately, the research highlights that institutional excellence depends not only on external reforms but also on internally driven, people-focused practices that involve faculty, encourage positive behaviours, and ensure long-term success.

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Chapter 9

IMPLICATIONS, RECOMMENDATION AND LIMITATIONS OF THE STUDY

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Chapter 9

IMPLICATIONS, RECOMMENDATION AND LIMITATIONS OF THE STUDY

9.1 Introduction

This chapter summarizes the main findings of the study and explores their wider implications, offering practical advice for management practices, policy reforms, and institutional growth. It starts by examining the research implications, highlighting the importance of the findings for higher education, especially in government-supported institutions in Kerala. The chapter then provides practical managerial suggestions for improving leadership, organizational culture, and faculty involvement to boost institutional performance. It also includes policy recommendations aimed at creating supportive environments for faculty, with a focus on governance, faculty development, and organizational fairness. Furthermore, institutional suggestions address ways to enhance academic service, pedagogical innovation, and a collaborative culture. The chapter ends by reflecting on the primary conclusions, summarizing key insights, and emphasizing their significance for long-term excellence in higher education. Overall, it outlines a strategy for improving faculty contributions and institutional effectiveness in government-aided HEIs, with lessons applicable beyond Kerala to similar educational environments.

9.2 Recommendations

This section offers a series of recommendations based on the study's findings, aiming to enhance the overall performance and institutional excellence of government-aided higher education institutions in Kerala. The suggestions are divided into three key areas: managerial, policy, and institutional, each providing specific insights and actionable strategies to improve faculty engagement, organizational culture, and academic results. These recommendations are rooted in the study's main findings, which emphasize the importance of a sustainable human resource management system, organizational citizenship behaviours, academic enthusiasm, and strong institutional leadership in achieving excellence. The following roadmap is designed

to guide leaders, policymakers, and administrators in creating environments that promote collaboration, innovation, and long-term success.

9.2.1 Managerial Recommendation

- **Strengthen Leadership Practices:**
  - Enhance leadership effectiveness across all institutions by promoting supportive, transparent, and inclusive leadership.
  - Provide training for leaders to build effective communication and decision-making skills.
- **Emphasize Recognition and Motivation:**
  - Implement consistent recognition programs to celebrate faculty achievements and contributions.
  - Offer visible and meaningful forms of appreciation to enhance job satisfaction and encourage faculty to exceed formal responsibilities.
- **Reinforce Role Clarity:**
  - Consistently convey role expectations to faculty members so they clearly understand their responsibilities and how they support the institution's goals.
  - Reduce role ambiguity by ensuring clear communication and accountability across departments and positions.
- **Foster Collaborative Work Environments:**
  - Promote team-building activities and create opportunities for cross-departmental collaboration.
  - Encourage regular communication among faculty members to embed cooperation and mutual support in the work culture.
- **Encourage Professional Development:**
  - Provide opportunities for faculty members to engage in continuous learning and skills development.
  - Promote professional growth through mentorship programs and encourage faculty participation in research initiatives.

9.2.2 Policy Recommendations

- **Focus on Academic Service Orientation:**
  - Make sure that a focus on academic service orientation stays a core part of higher education policies.
  - Establish quality assurance mechanisms to continuously monitor and improve academic services.
- **Promote Pedagogical Innovation:**
  - Develop policy frameworks that promote autonomy in curriculum design and teaching methods.
  - Provide faculty with the freedom to experiment with innovative teaching practices and integrate new technologies into their classrooms.
- **Enhance Fairness and Inclusiveness:**
  - Create policies that promote fairness and equal treatment in career advancement opportunities, recognition, and reward systems.
  - Establish clear frameworks that ensure inclusivity in all aspects of institutional life, particularly for underrepresented groups.
- **Support Faculty Autonomy:**
  - Policies should provide faculty with the autonomy to make academic decisions related to curriculum development, teaching strategies, and research directions.
  - Autonomy should be paired with adequate support from leadership to ensure sustainable innovation and development.
- **Integrate Faculty Development Programs:**
  - Develop comprehensive faculty development programmes that focus on academic skills and emotional intelligence.
  - Integrate leadership and interpersonal skills into faculty training to promote positive behaviours like collaboration and support.

9.2.3 Institutional Recommendations

- **Build a People-Centred HRM Ecosystem:**
  - Create a supportive HRM system that recognizes faculty contributions, offers autonomy, and fosters a culture of continuous improvement.
  - Focus on employee engagement by ensuring that faculty members feel valued and are given opportunities to grow and excel.

- **Promote Positive Organizational Citizenship Behaviour (OCB):**
  - Foster an environment of OCB by motivating faculty members to engage in voluntary, altruistic actions that support a collaborative academic atmosphere.
  - Recognize and reward discretionary behaviours that enhance institutional effectiveness, such as helping colleagues, mentoring students, and contributing to academic initiatives.

- **Enhance Faculty Engagement:**
  - Implement initiatives such as mentorship programs, research participation, and knowledge-sharing platforms to increase faculty involvement in institutional activities.
  - Encourage cross-disciplinary collaboration and joint research efforts to foster a dynamic academic environment.

- **Grant Institutional Autonomy:**
  - Institutions should be granted more autonomy to make academic decisions, particularly in areas like curriculum development and pedagogical innovation.
  - Autonomy should be complemented by clear leadership structures that provide consistent feedback, recognition, and support for faculty members.

- **Develop Fair and Inclusive Policies:**
  - Implement inclusive management practices that ensure equal opportunities for faculty members regardless of background, gender, or designation.
  - Foster a culture where leadership is transparent, fair, and accessible to all faculty members, encouraging participation at all levels.

- **Focus on Collaborative Academic Culture:**
  - Build a culture where faculty collaboration is not just encouraged but expected, making teamwork a core value of the institution.
  - Promote academic enthusiasm among faculty by supporting innovation, engagement, and the recognition of teaching and research excellence.

These recommendations aim to enhance the performance, culture, and long-term success of government-aided higher education institutions in Kerala. By focusing on managerial practices, policy reforms, and institutional strategies, institutions can foster an environment where faculty members are supported, motivated, and engaged in the process of institutional improvement. This will not only improve individual performance but also ensure the institution's collective success, driving sustainable academic excellence and fostering a positive, collaborative academic culture.

9.3 Implications of the Study

This study offers valuable insights into the factors driving institutional excellence in government-supported higher education institutions (HEIs) in Kerala. The results carry important theoretical, practical, and policy implications for stakeholders such as institutional leaders, faculty members, policymakers, and administrators. The following outlines the main implications derived from the study's findings.

9.3.1 Implications for Institutional Leadership and Management

- **Leadership Practices**: The study emphasizes the crucial influence of leadership quality on shaping the work environment and overall institutional excellence. The perception that leadership is moderate suggests there is potential for enhancing leadership effectiveness practices. Institutional leaders should focus on becoming more supportive, inclusive, and transparent to foster a collaborative, motivating culture among faculty members. Stronger leadership will not only improve faculty satisfaction but also enhance their voluntary engagement in activities that benefit the institution, such as mentoring, research, and cooperation in academic tasks.

- **Supportive Work Environment**: The study highlights the need for a supportive workplace atmosphere where faculty feel valued and backed by colleagues and leadership. Such an environment fosters motivation among teachers to participate in discretionary behaviours, such as assisting colleagues and exceeding their job responsibilities. Therefore, institutions should aim to develop supportive interpersonal relationships and promote teamwork at all faculty levels.
- **Autonomy and Job Satisfaction:** The results show that faculty members enjoy a high degree of job autonomy, which is linked to greater job satisfaction and improved performance. This highlights the importance of giving faculty the freedom to make decisions about their work, which in turn fosters greater job commitment and enthusiasm. Managers should therefore ensure that autonomy is maintained and enhanced while balancing it with appropriate support and accountability structures.

9.3.2 Implications for Policy Development

The study emphasizes the crucial role of academic service orientation in achieving institutional success. Policymakers should focus on providing high-quality academic services like counselling, mentorship, and research support as key components of higher education policies. These services require continuous assessment and improvement to meet the changing needs of faculty and students.

- **Pedagogical Innovation**: The study found that pedagogical innovation is critical to improving institutional performance. Policies that promote curriculum flexibility, innovative teaching methods, and faculty autonomy in pedagogical decision-making are essential. Policymakers should create frameworks that enable institutions to explore new teaching methods and technologies, ensuring that faculty have the tools and resources to innovate.
- **Fairness and Inclusiveness:** The research indicates that fairness and inclusiveness are areas needing improvement in many institutions, particularly in recognition and career advancement. Policymakers should introduce measures to ensure equitable treatment of faculty across all aspects of their

professional lives. This involves creating policies that promote fair resource distribution, transparent decision processes, and equal opportunities for all faculty members, no matter their background or institutional ties.

- **Faculty Development Programs:** The findings suggests that faculty development programs should be more comprehensive, focusing not only on academic skills but also on emotional intelligence, leadership, and interpersonal skills. Policy reforms that promote holistic faculty development will foster greater academic enthusiasm, which in turn will positively impact Organizational Citizenship Behaviour (OCB) and institutional performance.

9.3.3 Implications for Institutional Practices

- **Enhancing Faculty Engagement**: The study highlights the importance of academic enthusiasm in promoting a positive work environment. Institutions should invest in initiatives that encourage passion for teaching, engagement in research, and active participation in institutional activities. Faculty engagement should be viewed as a core component of institutional culture, and strategies should be designed to actively involve faculty in decision-making processes, curriculum design, and community outreach.
- **Promoting Collaboration and Teamwork**: The findings indicate that faculty members value collaborative environments and teamwork. Therefore, institutions should create more opportunities for interdepartmental collaboration, cross-disciplinary research, and team-based teaching initiatives. Establishing platforms for knowledge sharing and peer mentoring will further strengthen cooperation, increase faculty satisfaction, and contribute to institutional excellence.
- **Fostering Positive Organizational Citizenship Behaviour (OCB):** Institutional leaders should recognize the vital role of OCB in driving success. Evidence shows that faculty participation in voluntary and prosocial activities significantly contributes to a positive institutional climate. To encourage these discretionary efforts, it is essential to build a work environment where faculty feel appreciated and supported. This can be achieved by fostering a culture of recognition and highlighting shared achievements.

- **Inclusive and Transparent Recognition Systems:** The study suggests that while recognition exists within institutions, it is inconsistent and less visible than it could be. This points to the need for clear, consistent recognition systems that celebrate not only individual accomplishments but also team efforts. These systems should be transparent and inclusive, ensuring that all faculty members are fairly acknowledged for their contributions in teaching, research, or institutional service.

9.3.4 Implications for Organizational Culture and Institutional Excellence

Building a Positive Organizational Culture: The study indicates that organizational culture is crucial to institutional excellence. Institutions should prioritize cultivating a culture of collaboration, mutual respect, and accountability. When faculty members participate in prosocial behaviours like assisting colleagues, sharing knowledge, and collaborating on projects, these actions collectively foster a positive culture that enhances the institution excellence. Institutions should therefore foster an environment in which voluntary cooperation is treated as a central value.

- **Nurturing Academic Enthusiasm**: Faculty enthusiasm for teaching and research significantly shapes behaviour and, consequently, institutional performance. The study found that academic enthusiasm strengthens the relationship between sustainable HRM systems and institutional excellence. Institutions should create policies that foster passion for teaching, provide research opportunities, and offer mentorship programs to keep faculty motivated and engaged. Additionally, recognizing faculty who demonstrate high academic enthusiasm can further foster a culture of excellence.
- **Encouraging Faculty Autonomy and Innovation**: The research shows that faculty autonomy directly influences pedagogical innovation. Institutions should grant faculty greater academic freedom, enabling them to explore innovative teaching methods, research avenues, and collaborative initiatives. This autonomy, paired with support from institutional leadership, will foster a culture of creativity and academic freedom that contributes to the institution's overall success.

This study's findings serve as a guide for enhancing higher education institutions in Keralam by emphasizing leadership, faculty involvement, and organizational culture. By focusing on effective leadership, recognition systems, and academic freedom, institutions can create a setting that promotes faculty participation and organizational citizenship behaviours. Moreover, policies that encourage pedagogical innovation and inclusivity will lay a solid groundwork for lasting institutional excellence. These insights provide practical steps for institutional leaders, policymakers, and administrators to improve the performance and reputation of government-supported higher education institutions, ensuring ongoing success and continuous development.

9.4 Limitations of the Study

While this study provides valuable insights into the SHRM ecosystem, Organizational Citizenship Behaviour (OCB), and institutional excellence in government-supported higher education institutions (HEIs) in Kerala, it also has certain limitations. These limitations point to areas where the scope was limited and suggest avenues for future research.

a) Geographical and Contextual Limitations

The study concentrates solely on government-supported higher education institutions in Kerala, which may restrict the applicability of its findings to other regions or types of institutions in India and beyond. Organizational dynamics, working conditions, and institutional practices in Kerala might differ considerably from those in other states or private institutions. Future research could expand to include private, autonomous, and out-of-state institutions to achieve a broader understanding of the factors driving institutional excellence across various educational settings.

b) Cross-Sectional Design

The study employs a cross-sectional design, gathering data at one specific moment. This restricts the capacity to infer causality or assess the long-term impact of Sustainable HRM practices on institutional excellence. Conducting a longitudinal

study would offer more detailed understanding of how the relationships between SHRM, OCB, and institutional excellence develop over time, and whether modifications in HRM systems or organizational culture result in lasting enhancements in faculty engagement and institutional performance.

c) Self-Reported Data

The study mainly relies on faculty self-reports, which may introduce biases such as social desirability or response bias, as participants might provide socially acceptable answers or overstate positive behaviours. While measures were taken to ensure anonymity and encourage honesty, future research could improve accuracy by triangulating data from multiple sources, including student feedback, peer evaluations, and administrative views, to gain a more complete understanding of faculty behaviour and institutional practices.

d) Limited Exploration of External Factors

While the study focuses on internal factors such as leadership, fairness, and autonomy, it doesn't extensively explore external influences that might affect institutional excellence. Elements such as government policies, funding distribution, and external accreditation bodies could considerably affect institutional practices and faculty engagement. Future research should incorporate these external factors into the framework to achieve a more comprehensive understanding of the drivers of institutional success in the context of government-supported institutions.

e) Focus on Faculty-only Perspective

The study mainly examines the faculty perspective, which is valuable but may not fully capture institutional excellence. Faculty might lack awareness of broader organisational issues or administrative factors that influence performance. Including student feedback, administrative staff insights, and leadership opinions could provide a more complete view of how SHRM practices, OCB, and institutional excellence are perceived by various stakeholders. Future research should integrate these different perspectives to enhance the findings and increase the reliability of the conclusions.

f) Potential Overemphasis on SHRM and OCB

Although the study highlights Sustainable HRM systems and Organizational Citizenship Behaviour (OCB), other crucial factors affecting institutional excellence might not have been thoroughly examined. Elements such as technological progress, curriculum development, student support services, and community involvement could also significantly influence educational quality and overall institutional achievement. Future research should consider a multidimensional perspective to evaluate a wider array of factors that contribute to excellence in higher education institutions.

g) Sample Size and Representativeness

Although the study includes a considerable number of faculty respondents from various institutions, the sample size may not fully capture the diversity within the population of government-aided HEIs in Kerala. Institutions with vastly different resource allocations, cultural environments, and academic focuses may have different experiences and outcomes, which could limit the representativeness of the study's findings. Future studies could improve sample diversity by including a larger, more varied sample from different types of institutions (e.g., urban vs. rural, large vs. small, accredited vs. non-accredited).

h) Challenges in Measuring Organizational Citizenship Behaviour (OCB)

The study investigates OCB, a multifaceted and complex construct comprising voluntary behaviours that can be difficult to quantify precisely. Although it employs established tools for assessment, the subjective nature of these behaviours and differences in individual perceptions may hinder consistent and valid measurement. Future research might consider alternative methods like direct observation or behavioural evaluations to strengthen the validation of OCB findings.

i) Cultural and Social Influences

The study recognizes that gender, age, and experience affect faculty behaviours, but it does not thoroughly investigate how cultural and social factors, like institutional culture, societal norms, and regional educational expectations, impact faculty

engagement and institutional results. These contextual factors might significantly influence how the findings are understood, particularly considering Kerala's distinctive socio-cultural environment. Future research could focus on how cultural values and regional educational policies shape faculty actions and institutional performance in government-aided higher education institutions.

Despite these constraints, this study offers meaningful insights into how Sustainable HRM practices relate to Organizational Citizenship Behaviour and institutional excellence in higher education. Recognizing these limitations allows future research to enhance these findings by using broader methodologies, including diverse perspectives, and investigating other factors influencing institutional success. Such future studies will deepen understanding of the factors that foster excellence in government-funded higher education institutions and broaden the applicability of the results to different educational settings.

9.5 Chapter Summary

This chapter outlines the key findings of the study, emphasizing their significance for leadership, policy, and practices in government-supported higher education institutions (HEIs) in Kerala. It underscores the necessity for enhanced leadership, effective recognition mechanisms, and clearer role definitions to cultivate a positive work environment and foster academic innovation. The recommendations advocate for increased faculty engagement, a focus on academic service, pedagogical advancements, faculty autonomy, and fairness and inclusiveness. Additionally, institutional strategies highlight the importance of a people-oriented HRM system and encourage positive organizational citizenship behaviours (OCB). The study's limitations include its cross-sectional design, reliance on self-reported data, and a focus on Kerala's government-aided HEIs, which limits its broader applicability. To gain a more thorough understanding of institutional excellence, future research should integrate diverse perspectives, adopt longitudinal designs, and consider external influences.

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Chapter 10

CONCLUSION AND SCOPE FOR FURTHER RESEARCH

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Chapter 10

CONCLUSION AND SCOPE FOR FURTHER RESEARCH

10.1 About the Chapter

This chapter offers the study's conclusion, summarizing the key findings and their implications for improving government-aided higher education institutions (HEIs) in Kerala. It also outlines opportunities for further research, highlighting areas where future studies can expand on the findings and address the current study's limitations. The chapter provides a roadmap for advancing understanding of institutional excellence, faculty engagement, and organizational behaviour in higher education.

10.2 Conclusion of the Study

This research thoroughly examines the key factors influencing institutional excellence in government-supported higher education institutions (HEIs) in Keralam. It highlights the importance of Sustainable Human Resource Management (SHRM) practices, Organizational Citizenship Behaviour (OCB), and academic enthusiasm. The results show that success depends more on internal organizational systems than on external reforms or infrastructure alone. SHRM practices—such as transparent governance, equitable workload distribution, faculty development opportunities, and supportive leadership—serve as the core structure that fosters a positive environment where faculty members can excel.

The study's analysis of the psycho-social workplace environment and employee interactions reveals that organizations with strong HR frameworks—featuring clear roles, job autonomy, and a supportive atmosphere—are more likely to cultivate an engaged and productive staff. Faculty who perceive their contributions as valued and respected tend to display positive behaviours beyond their official responsibilities, such as assisting colleagues, mentoring students, and participating in institutional projects. Although voluntary, these actions become a part of the institutional culture and ultimately enhance overall excellence.

A key insight from the study highlights the transformative role of Organizational Citizenship Behaviour (OCB). Faculty demonstrating altruism, courtesy, sportsmanship, and conscientiousness—core aspects of OCB—play a crucial role in fostering a collaborative and ethical academic environment. These actions extend beyond their formal job duties, helping cultivate a positive organizational culture rooted in cooperation, mutual respect, and support, which are vital to the institution's success. The study emphasizes that institutional excellence results not only from policies or rankings but also from a shared culture of cooperation and dedication fostered by individual faculty voluntary efforts. When these behaviours are consistently practiced, they collectively boost the institution's overall performance.

The research also emphasizes the vital role of academic enthusiasm in strengthening the impact of SHRM practices and OCB. Faculty members who show higher enthusiasm—such as a passion for teaching, a willingness to research, and a mentoring attitude—tend to demonstrate more positive behaviors that contribute to the success of the institution. While SHRM systems support all faculty, those with greater enthusiasm are more likely to engage proactively and collaboratively, improving the institution's overall performance. This enthusiasm acts as a catalyst, reinforcing the connection between organizational systems, positive individual actions, and overall results. Faculty enthusiasm not only boosts personal job satisfaction but also enhances the institutional culture and teaching effectiveness, further linking motivated staff to institutional excellence.

The study emphasizes that institutional autonomy and accreditation are key factors influencing success. However, it notes that autonomy, although promoting pedagogical innovation, does not necessarily impact academic service orientation. This indicates that while institutional independence can support flexible teaching and innovative curricula, excelling in academic service depends on other elements like strong leadership, a supportive work environment, and motivated faculty. Additionally, the research shows that accreditation status affects institutional excellence but is not a guaranteed indicator. Non-accredited institutions can still demonstrate high levels of academic service and pedagogical innovation, highlighting that factors such as

institutional culture, leadership, and faculty commitment are equally, if not more, important than accreditation alone.

In conclusion, this study shows that institutional excellence is an ongoing effort, fuelled by the interaction of internal systems and faculty behaviours. It highlights that institutions should aim to develop a sustainable HRM ecosystem that encourages positive faculty actions, like OCB, and promotes academic enthusiasm. Achieving this involves fair governance, leadership that values faculty input, and a collaborative academic atmosphere. By prioritizing these internal factors, institutions can secure long-term success and ongoing excellence. The study offers a framework for higher education institutions to enhance both the technical aspects of academic service and pedagogy, as well as the human-centered systems that support institutional growth and faculty satisfaction.

These insights are useful not only for policymakers and administrators aiming to boost the performance of government-supported HEIs in Kerala but also for institutions striving to cultivate a strong, collaborative environment that fosters ongoing institutional excellence. By creating a people-focused ecosystem, institutions can better connect policy frameworks with real-world performance, ensuring that academic results meet both the institution's objectives and the broader educational standards landscape.

10.3 Scope for Further Research

This study offers important insights into the factors impacting institutional excellence in government-supported higher education institutions (HEIs) in Kerala. Nonetheless, there are various opportunities for additional research to expand on these findings and enhance understanding of the determinants of excellence in higher education. Below are some potential directions for future research:

1) **Longitudinal Studies:** Future research could use a longitudinal approach to observe the effects of SHRM practices, faculty engagement, and academic enthusiasm over time. This would provide a clearer understanding of how these factors change and affect institutional excellence over the long run.

2) **Impact of SHRM Practices on Student Outcomes**: Although this study focused on faculty behaviour, there is a need to examine how SHRM practices and faculty engagement directly affect student outcomes, including academic performance, satisfaction, and retention rates.

3) **Comparative Studies Across Institutional Types**: Comparative studies could be conducted across various types of institutions, such as private vs. public or autonomous vs. non-autonomous institutions, to identify which organizational characteristics most significantly contribute to institutional excellence across diverse settings.

4) **External Factors Influencing Institutional Excellence**: Future research could incorporate external factors, such as government policies, financial resources, and regional educational strategies, to examine how these factors affect institutions' ability to implement and sustain SHRM practices and foster innovation.

5) **Role of Technology and Digital Transformation**: The integration of educational technology continues to expand within higher education. Investigating how digital transformation influences faculty involvement, teaching innovation, and institutional quality can offer important insights into how technology contributes to overall institutional success.

6) **Cultural Factors and Institutional Excellence**: Given the regional focus of this study, future research could examine how cultural factors shape organizational behaviour and institutional performance. This would help determine whether the findings are consistent across different cultural contexts and educational systems.

This study offers valuable insights into institutional excellence within government-aided higher education institutions in Kerala. Future research could expand on these findings by investigating other factors, using various methodologies, and exploring different institutional settings. Such efforts will contribute to a more thorough understanding of what drives success in higher education institutions.

10.4 Chapter Summary

This chapter concludes that institutional excellence in government-aided higher education institutions in Kerala is mainly influenced by Sustainable Human Resource Management (SHRM) practices, Organizational Citizenship Behaviour (OCB), and faculty enthusiasm. It emphasizes that effective leadership, a supportive work environment, role clarity, and recognition systems are vital for increasing faculty engagement and achieving institutional success, highlighting the significance of internal organizational factors over external ones like accreditation. Future research could explore how SHRM affects student outcomes, compare different types of institutions, and investigate external influences such as government policies and technological advances. Further, longitudinal studies and research into cultural factors and faculty motivation might provide deeper insights into the long-term impact of SHRM practices and help develop a comprehensive understanding of the factors that lead to institutional excellence.

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APPENDICES

APPENDIX

Appendix 1

QUESTIONNAIRE FOR AIDED COLLEGE TEACHERS IN KERALA

Researcher's Declaration

I, the undersigned, hereby declare that the present study titled " OCB-Driven Human Capital Synergy Model for Higher Education Institutions in Kerala" is carried out purely for academic and research purposes. This study is conducted among college teachers across all streams working in Government-Aided Higher Educational Institutions in Kerala. The responses will be collected using structured tools, including a Likert five-point scale questionnaire, which measures the perceptions and opinions of participants regarding various constructs of the study.

Participation in this study is entirely voluntary, and the responses will be kept strictly confidential. The data collected will be used only for academic research, and no personal identifiers will be disclosed at any point.

Ethical Statement for Data Collection

This research upholds the highest standards of ethical research practices. All participants are briefed about the purpose of the study and their right to voluntarily participate or withdraw at any time without any consequences.

The data collected will be anonymized and used solely for academic and statistical analysis. No personal or institutional identifiers will be disclosed in any publication or presentation of this research. The confidentiality, integrity, and privacy of the participants' data will be strictly maintained throughout the research process.

This study does not involve any physical, psychological, or emotional harm to the participants. The research protocol has been designed to ensure ethical compliance, and informed consent for participation in the study.

Socio-Demographic and Economic Profile of College Teachers

(Please tick or fill in as appropriate)

1. Age:
   ☐ Below 30 ☐ 31–40 ☐ 41–50 ☐ 51 and above
2. Gender:
   ☐ Male ☐ Female ☐ Other ☐ Prefer not to say
3. Marital Status:
   ☐ Single ☐ Married
4. Religion:
   ☐ Hindu ☐ Muslim ☐ Christian ☐ Others
5. Community Status:
   ☐ General ☐ OBC ☐ SC ☐ ST ☐ Other
6. Educational Qualification:
   ☐ PG + NET ☐ MPhil ☐ PhD ☐ PDF

7. Designation:
   ☐ Assistant Professor ☐ Associate Professor ☐ Professor
8. Teaching Experience (in years):
   ☐ Less than 5 ☐ 5–10 ☐ 11–20 ☐ More than 20
9. Stream of Teaching:
   ☐ Arts ☐ Science ☐ Commerce ☐ Management
10. Monthly Gross Income (in ₹):
    ☐ 50,000–75000 ☐ 75001–1,00,000 ☐ 1,00,000–2,00,000 ☐ Above 2,00,000

Organizational Properties of the Government-Aided HEIs in Kerala

1. Location:
   ☐ Urban ☐ Semi-Urban ☐ Rural
2. Type of Management:
   ☐ Government Aided (Minority) ☐ Government Aided (Non-minority)
3. NAAC Accreditation Status:
   ☐ Not Accredited ☐ B ☐ B+ ☐ B++ ☐ A ☐ A+ ☐ A++
4. NIRF Participation:
   ☐ Yes ☐ No
5. AISHE Participation:
   ☐ Yes ☐ No
6. UGC Recognition:
   ☐ Yes ☐ No
7. Autonomous Status:
   ☐ Yes ☐ No
8. Affiliated University:
   ☐ Calicut University ☐ MG University ☐ Kannur University
   ☐ Kerala University ☐ KTU
9. Number of Teaching Staff:
   ☐ Less than 50 ☐ 51–100 ☐ Above 100
10. Major Academic Streams Offered:
    ☐ Arts ☐ Science ☐ Commerce ☐ Management ☐ Vocational
11. Presence of Research Centres:
    ☐ Yes ☐ No
12. Gender Composition of Faculty:
    ☐ Predominantly Male ☐ Predominantly Female ☐ Gender Balanced
13. ICT-Enabled Classrooms (Approximate %):
    ☐ Less than 25% ☐ 25–50% ☐ 51–75% ☐ More than 75%
14. Learning Management System (LMS) in Use:
    ☐ Yes ☐ No
15. Institutional Mission and Vision Accessibility:
    ☐ Displayed and Followed ☐ Displayed but Not Practiced ☐ Not Displayed

SECTION – I

PSYCHOLOGICAL WORKPLACE MILIEU (Level - I)

Likert 5-Point Scale

1 - Strongly Disagree | 2 - Disagree | 3 - Neutral | 4 - Agree | 5 - Strongly Agree

1.1. Supportive Organisational Climate

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Top-level authorities of my institution genuinely supports my professional growth.					
Colleagues provide emotional and professional support when needed.					
Management consistently encourages open communication.					
I feel comfortable voicing concerns without fear of revenges					

1.2. Organisational Justice, Inclusiveness and Equity

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
My institution treats all staff members fairly.					
My institution always tries to understand and improve fairness, equality and inclusion					
Diverse opinions of the staff are respected and valued here.					
My institution's policies are consistently applied to all teachers equally.					

1.3. Job Autonomy and Empowerment

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I have the freedom to decide how to accomplish my teaching tasks.					
My institution trusts my judgment in academic matters.					
I feel empowered to introduce innovative methods in my classroom.					
I can make independent decisions regarding my teaching responsibilities.					

1.4. Democratic and Transformational Leadership

	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Institutional leaders inspire me through their vision and actions.					
Leaders consider faculty inputs seriously when making decisions.					
Leadership promotes collaboration and progressive changes in the institution rather than unhealthy competition.					
Leaders consistently motivate me to achieve higher standards.					

1.5. Role Clarity

	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
My job responsibilities are clearly communicated to me.					
I fully understand what is expected of me in my role.					
Clear guidelines for my duties are provided by the institution.					
I am aware of my priorities and how my performance is evaluated					

1.6. Recognition and Motivation

	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Good teaching performance is highly acknowledged in my institution.					
Rewards and recognitions motivate me to perform better.					
I receive adequate appreciation for my academic contributions.					
Recognition of achievements is fairly distributed among teachers.					

SECTION – II

EMPLOYEE SYNERGISING DYNAMICS (Level - II)

Likert 5-Point Scale

1 - Strongly Disagree | 2 - Disagree | 3 - Neutral | 4 - Agree | 5 - Strongly Agree

2.1. Job Satisfaction

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I am satisfied with my current teaching position.					
My role in this institution provides personal fulfilment.					
I enjoy the nature of my job as an academician.					
I find my work environment pleasant and conducive to teaching					

2.2. Job Commitment

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I feel deeply committed to this institution.					
I often go beyond my regular duties to benefit the college.					
Staying loyal to this institution is important to me.					
I see my future professional career linked with this institution.					

2.3. Teamwork and Cooperation

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I collaborate effectively with my colleagues.					
Team efforts are highly valued and promoted here.					
My institution encourages cooperative academic work.					
Colleagues willingly help each other succeed					

2.4. Trust in Management

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I have confidence in my institution's management team.					
Management is transparent and honest with its decisions.					
I trust leaders to act in the best interest of the faculty.					
Management consistently demonstrates integrity					

SECTION – III

ATTAINMENT OF ORGANISATIONAL CITIZENSHIP BEHAVIOUR (OCB)

Organisational Citizenship Behaviour – Individual

3.1 Altruism

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I willingly assist colleagues facing difficulties.					
Helping others complete their tasks is natural to me.					
I offer support to new faculty to adjust quickly.					
I proactively share useful teaching resources with peers					

3.2 Courtesy

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I ensure my actions do not cause inconvenience to others.					
I communicate proactively to prevent problems among colleagues.					
I inform colleagues promptly of changes affecting them.					
I respect the time and workspace of my colleagues					

Organisational Citizenship Behaviour – Organisation

3.3 Civic Virtue

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I actively participate in institutional meetings and events.					
I stay informed about changes happening in my institution.					
Contributing positively to institutional discussions is important to me.					
I engage proactively in initiatives benefiting my college.					

3.4 Sportsmanship

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I remain positive even when facing work-related challenges.					
I willingly accept additional duties without complaints.					
I adapt positively to changes introduced by the institution.					
I handle workplace difficulties constructively.					

3.5 Conscientiousness

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I regularly exceed minimum expectations in my duties.					
I consistently complete tasks ahead of deadlines.					
Attention to detail in my work is very important to me.					
I strictly adhere to institutional guidelines and rules.					

SECTION – IV

INSTITUTIONAL EXCELLENCE

4.1 Academic Service Orientation

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
My institution prioritizes high quality education delivery.					
Service to students' educational needs is highly emphasized here.					
Institutional policies encourage highly excellent student support.					
Teachers are motivated to focus primarily on high level academic excellence					

4.2 Pedagogical Innovation

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
My institution supports students centric and innovative teaching approaches.					
Experimentation with new teaching methods is highly encouraged here.					
Faculty are regularly trained in advanced pedagogical strategies.					
Creativity and Technology are used effectively to improve teaching and learning process					

SCIENTIFIC TEMPER

	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
I try to maintain harmonious relationships with my students and colleagues even in stressful situations					
I handle classroom disruptions and administrative challenges without getting overly stressed					
I take the lead in organizing departmental events and academic programs even without being asked					
I enjoy experimenting with new technologies and teaching strategies to enhance student learning.					
I accept constructive feedback from students and peers to improve my teaching practices					

PERSONALITY TRAITS

	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
I try to maintain harmonious relationships with my students and colleagues even in stressful situations					
I handle classroom disruptions and administrative challenges without getting overly stressed					
I take the lead in organizing departmental events and academic programs even without being asked					
I enjoy experimenting with new technologies and teaching strategies to enhance student learning.					
I accept constructive feedback from students and peers to improve my teaching practices					

ACADEMIC ENTHUSIASM

	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
I feel excited and motivated while preparing and delivering academic content					
I actively participate in seminars, workshops, or faculty development programs.					
I enjoy engaging in academic research and publishing my work					
I enthusiastically guide students beyond the classroom in academic activities					
I willingly share academic resources and ideas with peers and students.					

Appendix II

Table: Socio-Demographic Profile and Institutional Characteristics of the Respondents (N = 564)

Category	Variable	Classification	Frequency (n)	Percentage (%)
Socio-Demographic Profile	Gender	Male	213	37.8
		Female	351	62.2
	Age	Below 40 years	507	89.9
		Above 40 years	57	10.1
	Marital Status	Married	39	6.9
		Unmarried	525	93.1
	Religion	Hindu	222	39.4
		Muslim	162	28.7
		Christian	180	31.9
	Community	General	285	50.5
		OBC	279	49.5
	Educational Qualification	PG + NET	177	31.4
		M.Phil./Ph.D./Post-Doctoral	387	68.6
	Designation	Assistant Professor	492	87.2
		Associate Professor	45	8.0
		Professor	27	4.8
	Teaching Experience	Below 10 years	138	24.5
		Above 10 years	426	75.5
	Academic Stream	Arts	225	39.9
		Science	84	14.9
		Commerce	255	45.2
	Monthly Gross Income	Below ₹1,00,000	231	41.0
		Above ₹1,00,000	333	59.0
	Domicile	Urban	234	41.5
		Semi-Urban	144	25.5
		Rural	186	33.0
Institutional Properties	Type of Management	Minority	432	76.6
		Non-Minority	132	23.4
	NAAC Grade	Not Accredited	135	23.9
		B	150	26.6
		B+	189	33.5
		B++ and Above	90	16.0
	NIRF Participation	Yes	501	88.8
		No	63	11.2
	AISHE Participation	Yes	513	91.0
		No	51	9.0
		Yes	561	99.5

	UGC Recognition	No	3	0.5
	Autonomous Status	Yes	147	26.1
		No	417	73.9
	Affiliating University	University of Calicut	375	66.5
		Mahatma Gandhi University	147	26.1
		Kannur University	30	5.3
		University of Kerala	12	2.1
	Number of Teaching Staff	Below 50	144	25.5
		51–100	300	53.2
		Above 100	120	21.3
	Research Centre	Present	474	84.0
		Absent	90	16.0
	Gender Composition	Not Balanced	426	75.5
		Balanced	138	24.5
	ICT Facilities	Less than 25%	189	33.5
		26–50%	153	27.1
		51–75%	108	19.1
		Above 75%	114	20.2
	Learning Management System (LMS)	Available	462	81.9
		Not Available	102	18.1
	Mission & Vision Visibility	Displayed and Followed	489	86.7
		Displayed but Not Practiced	75	13.3

*****