

**ORGANIZATIONAL CULTURE, WORK ENGAGEMENT,
WORK STRESS AND PERFORMANCE OF
INDUSTRIAL EMPLOYEES IN KERALA**

Thesis Submitted
for the Degree of Doctor of Philosophy in Psychology

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CERTIFICATE

Certified that this dissertation entitled "**ORGANIZATIONAL CULTURE, WORK ENGAGEMENT, WORK STRESS AND PERFORMANCE OF INDUSTRIAL EMPLOYEES IN KERALA**" submitted to the University of Calicut for the award of the Degree of Doctor of Philosophy in Psychology is a bonafide record of the research work carried by **SARATH, P.**, under my supervision and guidance. No part of this has been submitted earlier for any other purpose.

Prof. (Dr.) K. Manikandan
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DECLARATION

I, SARATH, P., do hereby declare that this, **“ORGANIZATIONAL CULTURE, WORK ENGAGEMENT, WORK STRESS AND PERFORMANCE OF INDUSTRIAL EMPLOYEES IN KERALA”** is a bonafide record of the research work done by me under the guidance of Prof. (Dr.) K. Manikandan, Professor in Psychology, Department of Psychology, University of Calicut. I further declare that this dissertation has not previously formed the basis for the award of any degree, diploma, associateship, fellowship, or other similar title of recognition.

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SARATH, P.

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ABSTRACT

As industrial economy is one of the major sources of income for any country, it is important to improve the productivity of industries. The performance of the employee who is working with the industry is one of the major factors which influence the performance of the industries. Performance of the employee consists of the observable behaviors that people do in their jobs that are relevant to the goals of the organization. Reviews are commended that, three of the most important factors which influence the performance of the employee include- organizational culture, work engagement and work stress of the employees. Organizational culture is the glue that connects the employee with the organization. Work engagement is a newly developed component of job attitude which is related with the state of mind of the employee towards work. Work stress is a psychological condition of an individual in a work place which affects his or her normal working. From the reviews, the investigator hypothesized that, organizational culture, work engagement and work stress has a significant role in determining the performance of the employees. The participants of the study consist of 302 blue collar employees working in different spinning mills working in Kerala. To collect information about the selected variables appropriate instruments were used, which includes- Organizational Culture Inventory, Utrecht Work Engagement Scale Work stress scale (G), Performance Rating Scale. Along with these instruments, one background information schedule also used to get an overall picture of the participants. After, getting a prior permission from the authorities of each unit selected for data collection, investigator contacted participants and requested to fill the instruments. All the collected data

were entered into a spread sheet for statistical analysis. Descriptive statistics, Pearson product moment correlation, multiple regression (enter method) and ANOVA were used for analysis. The results revealed that, most of the selected variables- organizational culture, work engagement, work stress and performance were correlated with each other. The regression analysis found that most of the dimensions of selected variables were significantly predicted the performance. A significant interaction effect of experience, organizational culture, work engagement and work stress on the performance also observed from the three-way ANOVA. The review, method, analysis, result and discussion of the present study are explained in prescribed chapters.

Keywords: Employees, Experience, Organizational culture, Work Engagement, Work stress.

Chapter 1

INTRODUCTION

The 18th and 19th century marked by the “industrial revolution” all over the world paved the way for the transformation of agricultural economy into industrial economy. From there onwards, the production from the industries became a basic income for most of the nations. Afterwards leaders of each nation were tried to develop the performance of the industries of their own country and still going on. In this circumstance, researchers of each country, with the help of government as well as the industrial management were trying to make the industries/or organization competent by applying psychological principles in the work settings wherever necessary.

Immense studies in the area of industrial/organizational discipline helped us to understand the relationship between different organizational variables and for helping the government/management in the process such as selection and placement, development of policies and interventions, to improve the performance of individual employees and to increase the productivity of the organization. The production of an industry/ organization depends on different factors. Most of the factors that influence the organizational productivity are those factors that make the whole culture of the organization. Culture exist everywhere, and therefore exist in every organization also. It is the “character” of an organization which has an important role in determining the organizational behavior of every individual who works on it. Therefore, it is important to know more about “Organizational culture” to make our organizations in right direction.

Organizational Culture

Culture consists of everything in the social world that influences the behavior, feeling and cognitive activities of an individual. It is something, that is difficult to define, but everyone knows that there exists a culture that differentiates one group of people from other groups. Our behavior is greatly influenced by the culture in which we live. The culture is transferred from old generation to new generation through the process of socialization. Collins (1998) stated that culture is historically developed, socially maintained and individually interpreted. In the earlier times, anthropologists studied the culture in order to distinguish different groups existed in the society. The focus was to find out the influence of culture on the group activities of that society. Today, the studies in culture are not restricted to the subject anthropology alone, besides that, the study of culture is also extended to different fields which deals with human behavior such as sociology, psychology, organizational behavior etc. With this transformation, the term “culture” became one of the significant topics in all areas where human behavior is studied. In this way, the term became important in organizational psychology and renamed as “organizational culture” as it is related with organizational principles.

The nature of organizational culture

Organizational culture refers to the culture that exists in an organization, which connects all the employees to work together, to achieve something and differentiates the organization from other organizations in method of working. The concept of organizational culture has been evolving since the 1970s (Schein, 1990) and received a considerable research attention with the emergence of influential writings of scholars such as Katz and Kahn (1978), Pettigrew (1979), Hofstede

(1980), Schneider (1987, 1990) etc, Just like the term culture, organizational culture is also difficult to define but everyone can feel it.

Based on the peculiar characteristics of the “organizational culture”, different scholars tried to define the term according to their own point of view. Pettigrew (1979) has defined culture of organization based on cognitive systems made up of multifaceted set of beliefs, values and assumptions which help to explain how employees think and make decision. Later, Deal and Kennedy (1982) gave the most simple and meaningful definition to organizational culture. They defined it as “the way we do things around here”. After thirty decades, Smith, Farmer and Yellowley, (2012) defined the term organizational culture in detail by stating it as the shared values, norms and behaviors that guide the individual employees to work within organization and to act as a cohesive group. The definitions state that culture exists in every organization in the form of values, norms and behaviors and influences the performance of the individual which in turn reflect in group performance.

Research suggests that each organization has their own characteristics which express their organizational culture in an aggregate form. Robbins, Judge and Sanghi (2009) expressed that organizational culture includes all the activities which encourage the employees to be creative, to take risks, to be the individual who shows precision and attention in each activities. All those characteristics expressed above indicate the characteristics of the individual employees, of the management and of the work pattern which define “organizational culture” as a whole.

All definitions and characteristics of organizational culture underlines that culture has a number of functions. First, it differentiates one organization from other organizations. Second, it creates a sense of identity and commitment among

members of the organization. Third, it bonds the employees together which ensures co-operation. Fourth, it shapes the attitude and behavior of the employees. All of the above functions points that organizational culture has a great role in determining the behavior of the employees which may influence the performance of the organization as a whole.

Formation and maintenance of organizational culture

As the organizational culture determine the organizational behaviors of the employee in the organization, it is important to study the formation of culture in an organization. Creation as well as maintenance of an ethical as well as positive organizational culture is important in every sense. This will contribute to the positive influence over employee performance. It is possible to develop ethical culture in every organization. But both the management and employees should co-operate each other. An ethical organizational culture will help in the development of a positive organizational culture. A positive organizational culture is related with the development of employees strength, practicing rewards than punishment and there by enable the development of the individual.

An organization's culture is the product of the philosophy of its founders. They created it and were successful in sustaining it through the process of selection of their employees. Employees who value organizations culture are hired and maintained in the organization and at the same time those don't value were expelled from the organization by the management/authorities. Management or authorities will keep the culture alive through performance evaluation criteria, 'training and development' activities, and promotion procedures. The process of socialization also influences in maintaining the existing culture through the form of stories, rituals,

articles, etc. The nature of formed or maintained organizational culture directly or indirectly influences the performance of individual employee as well as the performance of the organization. There for different studies conducted in this area proves that there is a strong relationship between certain types of organizational cultures and effective organizational performance (e.g., Lorsch & McTague, 2016).

There are different viewpoints in the area of organizational behavior to address the nature of organizational culture. The most important and most addressed models related with organizational culture are described below.

Models of organizational culture

Organizational culture can be approached from different directions. One of the most discussed and important model related with organizational culture is based on work done by Quinn and Rohrbaugh (1983) which is known as competing values framework (CVF). The CVF explain organizational cultures along with two dimensions: structure and focus. The former one was related with flexibility of the organizations at one end and control at another end. The second one is related with individuals at one end and organizations function at another end. The four major quadrants defined by these two axes (structure and focus) were labeled as- Human Relations Model, the Open System Model, the Internal Process Model, and the Rational Goal Model. The same is also known as clan, adhocracy, hierarchy, and market cultures (Cameron & Quinn, 2006). Denison and Spreitzer (1991) labeled it as group, developmental, hierarchical, and rational cultures.

Another theory which discussed the organizational culture was associated with the work of Martin in the year of 2001. She conducted some extensive research on this topic and identified three theoretical perspectives in studies on organizational

culture and named them as “integration”, “differentiation”, and “fragmentation”. The integration perspective focuses on mutual consistent interpretations about the organization. The collectivity wide consensus is one of the hallmarks of this type of culture which suggests the “shared values” of the employees. The differentiation perspective focuses on cultural manifestations that have inconsistent interpretations among the employees. Sub culture which exists in these organizations may develop either harmony or conflict in the organization. Here, the ambiguity is depending on the nature of sub cultures which exist in the organization. In the fragmentation perspective, interpretations of cultural manifestations are ambiguously related to each other which place ambiguity, rather than clarity, at the core of culture.

According to Schein (2004), organizational culture is manifested at three levels- Cultural artifacts, Espoused beliefs and Underlying assumptions. Cultural artifacts are related with structures and processes in the organization such as dress, observable rituals and ceremonies. Espoused beliefs and values are formal organizational practices like strategies, goals and policies, which are formally developed. The third level, Underlying assumptions are related with unconscious thoughts, beliefs, expectations and theories.

Organizational culture- determinant of employee performance

The culture exists in the organization has an important role in determine the performance of the employee who is working in it. There are different studies which state the relationship between organizational culture and performance of the employee (Lee, & Yu, 2004; Glomseth, Gottschalk & Solli-Saether, 2007). Deal and Kennedy (1982) stated that if culture of organization is believed strong, where most of the employees incorporated the same sort of beliefs and values related with the

organization. Thus organizational culture may be strong or may be weak depending up on the “shared” meaning about organization’s mission and values by the employees. If most of the employees have the same opinions about the organization’s mission and values, the culture will be strong and will lead to good performance of the employee in the organization. If opinions vary widely, the culture will be weak and will lead low performance.

A strong culture with high ethical standards has a very powerful and positive influence on the performance of the employee. And at the same time, a weak culture will negatively influence the performance of the employee. In other words, a strong culture which guarantee formal rules and regulations, make the employees to act in a relatively uniform and predictable way whereas, a weak culture without formal rules and regulations, creates chaos in the organization. Peters and Waterman (1982) supported the above direction of strong culture by stating that organizations with the strong organizational cultures are highly successful in the business world.

Like organizational culture, work engagement is another hot topic in the area of organizational behavior which influences the performance of the organization. Next section of this chapter explains the nature and process of work engagement of the employees.

WORK ENGAGEMENT.

People working in an organization will have many attitudes towards his/her job, towards work environment and management. This attitude is collectively known as Job attitude in organizational psychology which becomes an important area in recent day’s organizational research. Organizational researchers are giving an important consideration to the variable as it has a significant effect on the individual

performance as well as the performance of the organization. Job attitude consists of different sub dimensions such as job satisfaction, job involvement, organizational commitment etc. Researchers are continuously working on the organizational factor like job attitude and its dimensions for years to know more about the same. Work engagement or employee engagement is one of the newly developed dimensions of job attitude.

The nature of work engagement

Researchers in the academic area are not sure about the first use of the term ‘engagement’. Schaufeli (2013) in his article, postulate that the term was first used in 1990’s by a Gallup Organization. In the current circumstances, it became one of the most discussed variable related with work settings and were popularly known as work engagement. It is the state of mind of an individual employee towards his or her work in an organization. Researchers are using the phrases “work engagement” and “employee engagement interchangeably, because these two terms are indicating the engagement of employee. But, there exist some differences between them. Work engagement mentions to the relationship of the employee with his or her work, whereas the other may also include the employee’s relationship with the organization. Therefore, work engagement is more specific.

Countless researchers tried to give diverse definitions to the term Work engagement. One of the popular definitions of the work engagement at the time of its evolvement was given by Kahn (1990). He conceptualized work engagement of employees in terms of “how the psychological experiences of work and work contexts shape the process of people presenting and absenting themselves during task performance”.

The most recent and popular definition of work engagement is given by eminent scholars Schaufeli, Salanova, Gonzalez-Roma and Bakker (2002). They forwarded that work engagement is “a positive, fulfilling, work-related state of mind that is characterized by Vigor, Dedication, and Absorption”. The definition itself states that, there are three dimensions which determine the nature of “work engagement” of an employee. Here, ‘Vigor’ is the strength or energy level of employee in his or her work. It includes high levels of energy and mental resilience for an individual while working, the readiness of them to spend their effort in his or her work, the ability of them to overcome fatigues and persistence in the face of difficulties. The second dimension of work engagement is ‘Dedication’. It is the devoted effort of the employee to complete his/her work. The dimension is characterized by a strong involvement of the individual in their work, escorted by feelings of enthusiasm, a sense of pride and inspiration. The last dimension is ‘Absorption’ which is related with the fascination of an employee towards his or her work. Those who characterized by the absorption is being fully engrossed in their work and having difficulties detaching oneself from it.

The concept of engagement is related with the concepts like extra-role behavior, personal initiative, organizational commitment, job involvement, job satisfaction, positive affectivity, workaholism etc.,. Schaufeli and Bakker (2004) tried to distinguish the construct work engagement from these similar constructs. All these variables are positive variables and the variable work engagement also considers as a positive variable in organizational research. An opposite variable to work engagement is “Burn out”. According to Maslach and Leiter (1997), engagement is characterized by energy, involvement, and efficacy which opposite to

the three burnout dimensions (exhaustion, ineffectiveness and cynicism). In another sense, engagement can be assessed by the opposite pattern of scores on the three dimensions of the Maslach Burnout Inventory (MBI; Maslach, Jackson, & Leiter, 1996). And hence, the work engagement and its sub dimensions are considered as opposites of burnout and its sub dimensions (Schaufeli & Taris, 2005). Therefore, contrary to the employees who experience burnout, engaged employees are more energetic and they are well connected with their work which in turn influence the performance the employees positively.

From different studies Bakker and Demerouti (2008) identified the four major reasons behind the good performance of engaged workers than that of non-engaged workers. They identified that engaged employees often experience positive emotions (eg: happiness, joy, and enthusiasm); experience better health (mentally and physically); create their own resources which will help them to perform well; and transfer their engagement to others.

There are different factors which foster the engagement level of an employee. Among them job resources play a primary role in determining the work engagement. Van den Broeck, Vansteenkiste, De Witte, and Lens (2008) states that job resources fulfill basic human needs, such as the needs for autonomy, relatedness and competence. The fulfilling of basic human needs plays an intrinsic motivational role which nurture employees' growth, learning and development. There exists some extrinsic motivational role which determines work engagement. For example, Meijman and Mulder (1998) claimed that, job resources may play an extrinsic motivational role by fostering the work environments which increase the readiness to devote one's efforts and abilities to the work mission.

Models of work engagement

There are number of models which emphasize work engagement directly or indirectly. The needs-satisfying approach which is forwarded by Kahn (1990) was one of the earliest models which explain the process of engagement. The model assumes that employees become engaged when the job is challenging and meaningful to the employee, when the social environment at work is safe, and personal resources like mental and physical energy are available. A similar viewpoint was forwarded by Saks (2006) who argues that when employees receive a decent salary, recognition etc, they feel obliged to respond in kind and repay the organization by engaging in their work. As, there emerges an exchange of organizations response and employees repay, the process were known as social exchange theory of work engagement.

Currently, the most important and discussed model that related with work engagement is Job-Demands Resources (JD-R) model which is forwarded by Bakker and Demerouti (2008). They forwarded the JD-R model of work engagement on different assumption based on different studies. The first assumption of them suggests that, the job resources create a motivational process that leads to work engagement, and further enable higher performance. Their second assumption is that job resources become more significant when the employees are met with high job demands. They also assume that job resources and personal resources independently or jointly predict work engagement of the employees. From these assumptions, they forwarded the model of work engagement. The model represents the influence of job resources (social support from colleagues and supervisors, performance feedback, skill variety, and autonomy) and personal resources (optimism, self-efficacy,

resilience and self-esteem) on work engagement of the employee. Both the resources can independently or jointly predict the engagement. The model states that both the resources have a positive impact on engagement when job demands are high. The job demands forwarded by them include optimism, self-efficacy, resilience and self-esteem. The work engagement, in turn, has a positive impact on performance of the employee.

Sonnentag, Dormann, and Demerouti (2010) came out with a new model of work engagement that is characterized by variety of time perspectives ranging from trait concepts (comprising stable positive views of life and work), to state and state-like concepts such as feelings of energy or absorption. They termed their model as “model of state work engagement” and tries to explain why one person feels more engaged at work on specific days and on other days not. The model proposes that proximal day-level personal resources such as state self-efficacy, self-esteem, optimism, positive affect, and energy play a core role in state work engagement. In addition to these proximal day-level personal resources, the day-level demands also increase day-level work engagement in the employee. High demands present on the day itself make it a necessity to focus one’s attention on the task at hand and to mobilize a high level of energy by decreasing the likelihood of getting distracted by extraneous cues and, therefore, foster absorption in one’s work. They suggest that day-level demands interact with day-level personal resources in predicting state work engagement (SWE). All these processes available at the specific moment, because constant high demands on a daily level and the growth of fatigue over the course of time will exhaust the person and cause lesser work engagement in the long run. The above idea is supported by the writing of Bakker and Albrecht (2018).

Recently, in an article, Bakker and Albrecht (2018) pointed that, even though major studies showed differences in work engagement between individuals as a function of working conditions, personal characteristics, and behavioral strategies, recent studies has shown that work engagement may also fluctuate within persons – across time and situations. According to them, “daily engagement refers to daily levels of vigor, dedication, and absorption that may fluctuate as a function of daily demands, resources, and proactive behaviors.” Thus, it became important to know the fluctuating levels of engagement when performing their work in today’s world. Besides these, they also forwarding some new trends in the literature related with work engagement like- studies related with leadership and engagement, increased number of intervention studies, etc.,

The reviews and theories which discussed above conclude that work engagement is a positive variable. Contradictory to this, there are a number of negative variables which may affect the individual employee negatively in an organization. Among different negative variables, work stress considered to be the most studied variable in organizational research.

WORK STRESS

Stress is a mental condition of an individual which produce different physical and psychological consequences. Each and every individual have to face it, because it happens every day and everywhere. But, the intensity of the stress may vary from individual to individual. Cox and Griffiths (1995) suggests three different types of ideas of the nature of stress. The first idea postulates that stress is the stimulus of the environment in the form of level of demand and termed as “engineering” approach. The Second is the physiological approach, which is based upon the physiological

changes that occur in the person when they experience stress. The third type is most popular idea of stress which is related with psychological process. Here in this approach the stress is not regarded of as a mere stimulus or response, but is itself the dynamic process that occurs as when an individual interacts with their environment.

In a broader sense, it is a dynamic state of an individual which includes a challenging opportunity and a demand or a resource related his or her requirements, and at the same times the consequence is uncertain as well as important to him or her (Robbins, 1999). It may be good or bad based on the result of that dynamic condition. The good stress is commonly known as ‘eustress’ which is essential for the achievement. Bad stress is commonly known as ‘distress’ which acts as a hindrance in achievement of something and becomes a problem to the individual. Perception of the stress, experience of the individual, support from others and personality of the individual determine the level of stress in an individual. As the stress happens everywhere and to every individual, the phenomenon may happen in work settings. Researchers calls this type of stress which happen in work setting as work stress, job stress, occupational stress etc.

The nature of work stress

Various scholars tried to define stress and to find out the causes and consequences of stress in a working environment. Rollinson (2005) defined workplace stress as the condition of an individual which emerge from the working environment that is different from normal working condition of him/ her. When work stress makes a deviation in the working condition of an individual, it becomes a problem to the organization as it will adversely influence the performance of the individual. In these circumstances, the stress which emerges from the work

environment became one of the essential areas of organizational research throughout the world.

There are different sources which develop stress in an individual employee. Generally, the sources are classified into environmental stress, organic stress, and personal stress. The environmental source consists of economic and political uncertainty and technological change. The organic source comprises task demand, role demand and interpersonal demand. And the last, Personal source includes family problem, economic problem and personality. (Robbins, Judge, & Sanghi, 2009). In 2010, Robbins discussed sources of stress under four major areas: Organizational factors, Extra/Non organizational factors, Group factors, and Individual/ personal factors.

Organizational factors are the most significant factor which has great potential to induce job-related stress in an individual. There are many factors within organizations that can create stress under the area of administrative policies and strategies, organizational structure and design, organizational processes and working conditions. The external environment such as social or technological change, family, race etc, also create stress in organizational life. Group Stressors underlined by them include lack of group cohesiveness lack of social support and conflicts. The personal factors include the individual characteristics like need for achievement, aptitudes, personality traits etc. The personal factors also include individual problems like families' issues, economic problems, poor health, etc.

When the stress from different sources becomes excessive in nature, different problems like heart disease, anxiety, absenteeism, turnover, etc will arise which will

negatively influence the performance of the employees. As a result, the performance of the employees as well as the organization will come downwards.

Models of work stress

Work stress is one of the important topics in the area of organizational behavior; therefore several scholars developed different theories related with the nature and process of stress. Even though each theory has its own characteristics, all are structured around a common set of components that are linked in stress process. Lewin (1951) observed that an employee's personal characteristics interacted with the work environment in which they work and may lead to strain. He hypothesized the interaction between the person and environment (PxE) is a significant determinant of people's cognitive, affective and behavioral reactions. This concept was developed into the most popular theory of stress and known as "Person-Environment fit model" (French, 1973).

The Person- Environment fit model describes stress in terms of similarity between the need of the people and what they receive, as well as a similarity between their abilities and the demands placed upon them. Lack of mismatch creates stress in people which will negatively affect the health of them. For this reason, to attain good health, it is essential that the attitudes, skills, abilities and resources should match with the demands of the employees job, and that work environments should meet workers' needs, knowledge, and skills potential. Mismatch in either of mentioned domains can result in problems related with stress and strain.

The Michigan Model and Conservation of Resources (COR) theory focused on the role of 'individual' and his 'working environment' in relation with work stress. The Michigan Model is based on a framework established by French and

Kahn at the University of Michigan in 1962. Like the P-E fit model, the Michigan Model also places much importance on the individual's own subjective perceptions of stressors like role ambiguity, conflict, lack of participation, job security, workload, lack of challenge etc. The Conservation of Resources (COR) theory was forward by Hobfoll (1989) which is similar to P-E fit model but one key difference is that the P-E fit model emphasizes mainly on people's perceptions of fit, while COR theory incorporates more objective indicators of actual fit. Lazarus's Transaction model was another famous model of stress (Lazarus & Folkman, 1984) based on person and environment.

Another theory introduced by Hackman and Oldham's (1980), which focus on important aspects of job characteristics, such as skill variety, task identity, task significance, autonomy, and feedback. As the theory focus on these job characteristics, the theory was popularly known as "the job characteristics model". These characteristics have a great influence over 'critical psychological states' such as experienced meaningfulness, and experienced responsibility and knowledge of outcomes. The theory proposed that positive or negative work characteristics give rise to mental states. Here, the negative job characteristics will lead to negative cognitive and behavioral outcomes.

A somewhat different, but more popular theory was proposed initially by Karasek (1979) and later expanded by Karasek and Theorell (1990). The initial model of Karasek known as Job Demands–Control (JDC) Model, which states that, to a certain extent excessive job demands or pressures have an impact on stress, these demands are not only the important contributors to stress, but also the ability of the employee to control the demands that they have to deal within. In another

word, there will be interactive effects of Demands and Control on stress levels. The initial theory was revised by Karasek and Theorell in 1990 to add social support in the model. Thus, the model became Job Demands–Control–Support (JDCS) model. The inclusion of support was based on extensive evidence which stated that support can play a significant role in alleviating stress among workers.

There are different theories which explain the nature of stress on the basis of demand and control model. Among the models, one of the most recent and popular model was by Palmer, Cooper, and Thomas (2004). They identified work stress as the product of different sources such as ‘work demands’ related with workload, work patterns and work environment; ‘control’ related with the involvement the employee has in the way they do their work; ‘support from colleagues and the organization’ in the form of encouragement, sponsorship and resources provided by the organization, line management and colleagues; ‘relationship with others’ which include promoting positive working to avoid conflict and dealing with unacceptable behavior; ‘role’ which refer to the nature of role of the employee within the organization; and ‘change’ which is related with how the organizational change is managed and communicated in the organization. Maladjustment with these factors may cause coronary heart disease, anxiety, depression, burnout etc in the individual which will result in reduced profit, increased accidents, etc.

Above discussed factors such as organizational culture, work engagement and work stress may directly or indirectly influences the performance of the individual employee as well the performance of the organization. Thus it is important to know more about the nature of performance and its connection with organizational culture, work engagement and work stress. Hence, to know more

about its relationships, the investigator has chosen these four variables for the present study. The following section explain nature of performance and its connection with organizational culture, work engagement and work stress

PERFORMANCE

The productivity/effectiveness of every organization is governed by the performance of each individual employee. It is related with the way to perform the job tasks according to the prescribed job description. In the opinion of Kavanagh (1982), it is a dynamic, multidimensional construct which indicate employee's behavior in performing the requirement of a given organizational role. Based on the writings of Wright and others (Wright & McMahan, 1992; Wright & Snell, 1991), it is possible to draw out concept of work performance. Based on their works, the work performance can be interpreted as a system including three key elements arranged in sequence; inputs, human resource throughputs and outputs. Here, 'inputs' includes employee knowledge, skills and competencies; the human resource 'throughputs' is related with activities that transform inputs into outcomes, such as work effort and other behavior; and the last one 'outputs' include outcomes from work behavior, that is result.

There are many factors which influence the performance of the employees. Both the work environment and social environment influences the satisfaction level of the employee which will reflect on their behavior in the work place. The satisfaction level differs from individual to individual. And the needs of the individuals which cause satisfaction of the individuals differs from individual to individual and also differs from one society to another, and from one culture to another. Even though, understanding the work behavior of an individual in a

working environment and its assessment is very difficult and complex, it is indeed for an organization to improve its performance in the fast world.

The performance of the employee includes all the activities that are relevant in achieving organizational goals. Therefore, it is one of the most basic construct in the field of organizational psychology. Graduation marks or gold medals in the academic area alone are not the determinant of his or her performance in an organization. Besides these, the performance of the individual employee is the product of interaction of his or her physical abilities/health and mental abilities/mental health. In this information age, physical energy of individuals is hijacked by machines, but the organization still need mental energy of the employees.

As the performance of the individual is essential to the development of the organization, the managements and the researchers are continuously researching about the factors that are affecting the performance of the individual employee. From their studies, it can observe that, both the organizational factors like work stress, job commitment, quality of work life etc and social factors like family involvement, spouse relationship, gender role etc have a great role in determining the performance/ efficiency/ productivity of the employees.

There exist several formal and informal methods to assess the performance of the employees. Formal methods are more accurate in evaluating the performance of the employees than the latter one. According to Porter and Lawler (1968), there are three types of performance measurement- one is related with measure of output rates, amount of sales, etc,. The next type of performance measurement contains

ratings of individuals by someone other than the employee. The third type of performance measure is self-appraisal and self-ratings.

Rotchford (2002) forwarded three basic ideas related with employee performance - performance appraisal, performance development and performance management. Performance appraisal includes the method to assess the performance of the employees which enable management to take necessary actions to improve the performance of them. Performance development is the process of evaluating the performance of the employee in order to make them aware of their performance in the organization. Giving feedback to the employees about their performance will help them to improve their performance. Performance management incorporates both performance appraisal and performance development in order to make the employees capable of doing their work in a meaningful way that satisfies the requirement of the organization. Today, organizations regard performance management as a continuous, future-oriented and participative system which include the organizational process like monitoring, informal feedback from supervisors and peers, criteria setting, action-planning etc., (Bach, 1999; Williams, 2002).

There are different factors which influence the performance of the employees in an organization/industry. Organizational culture, work engagement and work stress shares an important area which studies the performance of the employees. Regarding organizational culture, studies have reported that organizational culture is one of the strong determinants of performance (Lee & Yu, 2004; Glomseth, Gottschalk & Solli-Saether, 2007). The relation between work engagement and performance was investigated by different scholars. Bakker, Schaufeli, Leiter, and Taris (2008) have found that work engagement is a strong predictor of performance.

In conclusion, there is a significant relationship between work engagement and performance of the employees. The link between work stress and performance also has a major role in organizational research. Most of the studies have reported that, stress brings subjective negative effects such as anger, fear and anxiety (eg., Salam, Ojolenku, & Illesanmi, 2010) which will negatively influence the performance of the employees (Bashir, 2010; Chen, 2009).

IMPORTANCE OF ORGANIZATIONAL CULTURE, WORK ENGAGEMENT, WORK STRESS AND PERFORMANCE IN ORGANIZATIONAL RESEARCH

In the beginning of organizational research, most of the studies not focused on human related factors while addressing the performance of employees. After Hawthorn like studies, researchers understood the importance of human related factors which influence the performance of the employee as well as the productivity of the organization/industry. Among the human related psychological factors-organizational culture, work engagement and work stress has attracted different scholars while studying the performance of employees.

Organizational culture is the “character” of an organization which has an important role in determining the organizational behavior of every individual who works in it. The way employee perceives the culture of the organization has an important role in determining the organizational behaviors of the employee which will ultimately result in the increased performance of them. There are various studies in the existing literature related with organizational culture and its relation with other organizational variables like Personal effectiveness (George & Jayan, 2012), organizational commitment, job involvement, job identification (Singh, 2007), etc. Damanpour, Devece, Chen, and Pothukuchi (2010) stated that, organizational

culture also plays a mediating role in predicting psychological variables which also positively influence the performance of employees. Thus culture can directly or indirectly influence the performance of the individual who are working with in it.

Work engagement considered to be a positive organizational variable. As the work engagement is a positive work related state of mind which will influence the performance of the individual employee as well as the organization. It became one of the most discussed job attitude variables in organizational research. There are several studies in the organizational behavior as well as in management science, which evaluates the cause and consequences of work engagement of the employees. Simpson (2009) based on his meta-analysis, stated that both organizational factors and individual factors contribute to a greater extent towards engagement at work. Studies are there in the literature which tries to bring out the relationship between work engagement and other organizational variables like work related wellbeing (Sarath & Manikandan, 2014), job satisfaction (Rothmann, 2008), burnout (Nair, Sarath, Manikandan, 2013) etc., Chaudhary, Rangnekar, and Barua (2011) recorded organizational success, financial performance, and client satisfaction as important outcome of the work engagement.

Organizational culture and work engagement considered to be the positive variables which improve the performance of the employees. But, sometimes, the work stress like factors may negatively influence the performance of the employees. Selye (1956) in his book 'The Stress of Life' brought the concept of stress into the public domain. From there, it became one of the important areas of research in every area where man works. The studies related with work stress pointed that, it has a relation with organizational variables such as quality of life (Ranjit & Mahespriya,

2012), self-efficacy (Raveendran & Manikandan, 2012), employee commitment (Samuel, 2015), job satisfaction (Tharakan, 1992), burn out (Chand & Monga, 2007) etc., Researchers also studied different factors that cause stress at work place like work demand, control over demands, manager support, peer support, relationship, role and change (Swaminathan & Rajkumar, 2013), long hours of working (Ranjit & Mahespriya, 2012) etc.

The JD-R model which is forwarded by Bakker and Demerouti (2008) describes different factors which determine the work engagement and work stress of the employees in a work setting. Boles, Pelletier and Lynch (2004) stated that when the employees' have the desire to work both physically and emotionally in a proper work place environment, then their performance of them will automatically increase. The proper work place with a good culture will motivate an employee (eg; work engagement) by reducing the risk factors (eg; work stress) and will positively influence the performance of them.

Existing literature also suggests that there are a number of studies which explore the relationship between organizational culture and work stress (Sarath & Manikandan, 2016) organizational culture and employee performance (Uddin, Luva & Hossian, 2013), work engagement and work stress (Sarath & Manikandan, 2015), stress and job performance (Warraich, Ahmed, Nawaz, & Khoso, 2014), work engagement and performance (Gorgievski, Moriano, & Bakker, 2014), etc.,

INDUSTRIES IN KERALA

The revenue from the production of goods or services is the backbone of any economy. The production of goods and services is accounted by different industries. There are different sectors of industries such as agricultural sector, mining and

quarrying sector, manufacturing sector, construction etc. The industrial revolution in the 18th century paved the way for development of industries in European and American continents. Industrial revolution not only limited to shake the economy of developed countries, but also influenced many developing countries like India.

Kerala is one of the Indian states that lie along the south west coastline of the country. According to Thomas (2004), there were different industrial units in Kerala in earlier days, but, investments in modern industries began in the Alwaye–Kochi constituency in the princely state of Travancore after the mid-1930s and made important changes in Kerala's industrial structure, which comprised of only traditional small scale industries until then. After the formation of the state- Kerala, the Government of India, the State Government, and the private sector jointly showed their presence in the area of industrial development in the state.

In the state of Kerala, both the public undertakings- owned by state government and central government, plays an important role in the economy and society of Kerala. Public sector undertaken by government of Kerala is generally divided into manufacturing and non- manufacturing industries. The industrial production, of any industry, either manufacturing or non- manufacturing industries, depend on many factors. Human resource, machine, money, etc, are some of the major factors which influence the productivity of any organization. Among them, human resource or human power which is related with employees who is working in the industry has a great role in determining the productivity of an industry. Different studies tried to analyses human related factors which influence the performance of employees (Kitronza & Mairiaux, 2015; Khan, Dongping & Ghauri, 2014; Mathews & Khann, 2013) working in various industries like manufacturing sector, chemical

sector, electrical sector, textiles sector, handicrafts sector etc.,. Some studies explored the nature of organizational culture, work engagement, work stress and performance of employees working in different industries (Hon, Chan, & Lu, 2013, Jung & Yoon, 2014). The present study is trying to find out the influence of organizational culture, work engagement, and work stress on the performance the employees of Kerala.

Need and Significance of the Study

The productivity of any organization is depends on the performance of the employees. As employees are human beings, their performance is influenced by different personal and organizational factors like organizational policies, work culture, relationship, work environment etc. Among them, organizational factors such as organizational culture, work engagement of the employee, and work stress experienced by the employee has very strong impact on individual performance as well the organizational performance. Organizational culture is refers to a shared meaning held by all the members of organization. It guides the relationship, emotional attachment, style of working etc. of the employees in the work setting. Different organizations have its own cultures which differentiate one organization from other organizations. The difference in the organizational culture makes differences in the performance of the employees. Another factor influencing the performance of the employee in organization is Work engagement. It is the emotional attachment of an individual towards his or her work which may influence the performance of the employees. The modern organizations require employees who show the characteristics of work engagement such as vigor, absorption and dedication. Work stress is strong variable that govern the performance of the

employee. The stress arises from the work-related tasks, workload, politics etc., will negatively influence the performance of the employees.

As the organizational culture, work engagement and work stress influence the performance of the employees, it is important to study these factors to improve the productivity of the organization. In the state like Kerala, where the industrial performance is very low compared with other states of the country, uncovering the influence of these variables on performance will help authorities to take necessary steps to improve the performance of industrial employees in the state. Thus there is a strong need to study organizational culture, work engagement, work stress and performance of the employee in the Kerala industrial context. The study will be significant in a state like Kerala, to improve the effectiveness of individual employees as well as the organization or industries in the competing world by introducing new methods related with study variables in the industry which may help the employees to increase their performance. The result will be magnificent for both the industrial sector and for the government.

Statement of the Problem

Compared to other Indian states, Kerala is rich in vast potential of intelligence and educated manpower and healthy natural resource endowment, but in fact the state remains relatively backward in the industrial production. To improve the productivity of our industries, it is essential to study the factors that influence the productivity. Organizational culture, work engagement, work stress and employee performance are some of the most prominent factors which influence the productivity of any organization/industry. The present study is an attempt to study these factors in Kerala context.

This study is entitled as “**ORGANIZATIONAL CULTURE, WORK ENGAGEMENT, WORK STRESS AND PERFORMANCE OF INDUSTRIAL EMPLOYEES IN KERALA**”.

Workable Definition

Every word has its own definitions. But some time one definition which is suitable for one situation may not be suitable for another situation. Therefore, it is important to define the variables based on the context of the study. The workable definitions of each variable under study are follows:

Organizational culture- is the social glue which holds the organization together through an enlightened leadership, sharing patterns of values and beliefs, mission, vision and strategy communicated by the management, along with team effectiveness and innovative and independent action of the employees (George & Jayan, 2010)

Work engagement- “... a positive, fulfilling, work-related state of mind that is characterized by Vigor, Dedication, and Absorption”. (Schaufeli, Salanova, Gonzales-Roma & Bakker, 2002)

Work stress- is a psychological condition of an individual in a work place which affects his or her normal working.

Performance- The performance of the employee includes all the observed activities that are relevant in achieving organizational goals, and can be measured with rating scales.

Chapter 2

REVIEW OF LITERATURE

This chapter presents the review of the studies which are conducted by earlier researchers. Rationale behind conducting “review of related literature” is to understand research area and to get an idea about the design of the study, way of presentation of the study, reporting, interpretations, etc. Conducting this type of work helps a researcher to do his or her work in a proper way by clarifying ambiguous doubts in the research process through reviewing the literature. It is not possible to present all the literature related with research area in the chapter because of that it so huge. But, at most care have been taken to include most relevant and unique studies in the chapter.

Studies related with Organizational Culture

Organizational culture is the glue that connects all the employees to work together in an organization. The glue consists of multifaceted set of beliefs, values and assumptions which help the employees to work as cohesive group. As the organizational culture influences the individual and group behavior, the variable has an important role in organizational researches. The researchers are trying to bring clarity to the concept organizational culture by identifying the factors behind the formation of organizational culture, relationship of organizational culture with other organizational variables etc.,.

Even if there is no single definition for the concept of the organizational culture and even if cultures are very different from one to another, commonalities do exist. According to Hofstede (1980) organizational culture is the collective programming of the mind that distinguishes the members of one organization from another in the form of beliefs, values and assumptions which are practiced in one organization may different from other organization. This includes shared beliefs,

values and practice that distinguish one organization from another. The formation and maintenance of the aspects of organizational culture can be explained in terms of historical perspective. Pearse and Kanyangale (2009) addressed that while studying the nature of organizational culture, researchers should be conscious of the contextual and historical features of existing culture. Similarly, Staber (2011), in his study, suggested that, it is an evolutionary process that is motivated by a continuous stream of new variations in the distribution of ideas in terms of similarity, competition etc.

Thus it is clear that, organizational culture is temporary in nature, which may change overtime. Therefore, it is important to form and maintain an organizational culture which is adaptive in nature in the fast growing world for its survival. By keeping this in mind, Costanza, Blacksmith, Coats, Severt, and DeCostanza (2016) studied the effect of two broad categories of adaptive culture- values toward change and action-orientation on organizational survival. The study found that organizations with adaptive culture were more likely to survive in the business world.

Based on the characteristics of organizational culture, an individual's effectiveness in the organization can be predicted. It may produce positive or negative influence. George and Jayan (2012) exposed that organizational culture had a significant impact on personal effectiveness. The study also reports that the organizational culture has a significant impact over the personal focus, personal growth, team effectiveness, customer focus, relationships and personal adaptability. The study also reported that, employees with a higher organizational culture significantly scored higher personal effectiveness than employees with moderate and

low organizational cultures. In conclusion, a higher level of organizational culture leads to a higher level of personal effectiveness.

Thus, from the above studies, it can conclude that there is a strong relationship between organizational culture and person effectiveness or employee performance. Sometimes, a number of organizational variables play a meditational role in between organizational culture and employee performance. Job attitude is one of the important variables which are directly related to organizational culture. Gregory, Harris, Armenakis, and Shook (2009) conducted their research to examine the meditational role of employee attitudes between organizational culture and diverse measures of organizational effectiveness. The result of their study suggests that employee attitudes mediate the culture–effectiveness relationship.

Different scholars were tried to bring out the relationship of organizational culture and its dimensions with job attitude and its dimensions. For example, in a study, Tastan and Turker (2014) found a significant positive relationship between perceived organizational culture and with attitude variable job involvement. Ramshida and Manikandan (2013) stated that there is a positive correlation between organizational culture and organizational commitment. In addition to this, they suggested that the extent to which employee absorb the culture of the organization, can improve the commitment which will resist the occurrence of counterproductive work behavior in the organization.

Similarly, Samuel (2015), in his study reported low commitment towards work in the departments which have a hierarchical culture that is unsupportive. Due to this reason, the staffs of the departments have to do too much work with lesser time for the accomplishment. Singh (2007) found that, the dimensions of

organizational culture such as purpose, structure, leadership, relationship, rewards and helpful mechanisms are positively and significantly related to the organizational commitment. In addition to it, the study also reports that Job involvement significantly related to all the dimensions of organizational culture except- structure. Nam and Kim (2016) studied different types of culture and its effect on different attitudes. The result of the study stated that organizational rational culture, group culture, development culture and hierarchical culture showed a high level of affective commitment, but a low level of normative commitment. The study also reported that group culture and rational culture had an influence on job satisfaction and affective commitment.

However, some studies also reported that there is no relationship between organizational culture and attitude variables. For example, Giri, Nimran, Hamid, and Musadieg (2016) in their study found that organizational culture does not have a significant effect on the organizational commitment of employees.

Besides attitude, organizational culture has a great role in determining different organizational variables which influence the productivity of employee as well as organization. Naqshbandi, Kaur, and Ma (2015) studied the relationship between organizational culture and innovative process and found that organizational culture was a huge predictor of open innovation. Tastan and Turker (2014) also found that organizational culture is also influencing some other factors such as psychological conditions of meaningfulness and safety and thus will be beneficial in bringing the full potential of them. According to Bindl and Parker (2010), the more and more employees internalize and identify the values and goals of the organization, they will show positive behaviors in their work settings.

Carmeli (2005) in a study examined the influence of five dimensions of organizational culture which include job challenge, communication, trust, innovation and social cohesiveness on employees' withdrawal intentions and behavior. The result indicates that an organizational culture that provides challenging jobs diminishes employees' absenteeism, and withdrawal intentions from the occupation, etc. It was also reported that other dimensions of organizational culture were not significantly correlated with the dependent variables, with the exception of the relationship between innovation and employees withdrawal intentions from the job.

Organizational culture also influences the organizational practices or human resource practices which force the employees to continue with the existing culture. Adewale and Anthonia (2013) examined the impact of organizational culture on human resource practices. Results revealed that there is a relationship between recruitment process, training programmes, job performance management, performance of employees, pay structure, and compensation administration with the dimensions of organizational culture such as belief, value, and practice. All these factors together lead to organizational effectiveness. Ehtesham, Muhammad and Muhammad (2011) explored the relationship between the components of organizational culture (involvement, consistency, adaptability, and mission) and performance management practices. The statistical analysis revealed that, all the variables including involvement, consistency, adaptability and mission has significantly positive impact on Performance Management Practices (PMP).

Does culture of the organization produce different effect on organizations? Scholars were tried to distinguish organizational culture on the basis of its characteristics and tried to know the influence of it over employee work behavior.

Haggalla and Jayatilake (2017) explored the influence of organizational culture on turnover intention of employees. The findings of their study indicated that, there is a relationship between the two variables.

From the reviews, it is possible to understand that the organizations with the culture that bonds the employees together and motivates them to work for the organization tend to be good for organizational performance. So there exists a direct relationship between organizational culture and employee performance. Sometimes, organizational culture and organizational performance is mediated with some other organizational variables. Work engagement is one of the important organizational factors which play a meditational role in between organizational culture and employee performance.

Studies related with Work Engagement

Work engagement is a newly emerged concept in organizational studies. It is a state of mind or attitude of an individual employee towards his or her work in an organization. It is different from “employee engagement” because work engagement mentions to the relationship of the employee with his or her work, whereas employee engagement may also include the employee’s relationship with the organization.

Even though, the definitions of work engagement and other job attitudinal variables like organizational commitment and job involvement look similar, but it is different. Scrima, Lorito, Parry, and Falgares (2014) separated these constructs in their study and suggested that work engagement mediated job involvement and organizational commitment. Arya and Manikandan (2013) reported that work engagement and organizational commitment are significantly correlated.

There are different studies which explain the nature of work engagement. But, the work of Schaufeli, Salanova, Gonzalez-Roma, and Bakker (2002) has an important role in conceptualizing the work engagement in organizational research. They conceptualized that work engagement as not a single entity rather comprised of three sub factors namely: Vigor, Dedication, and Absorption. As the work engagement is important in organizational or industrial research, it is important to develop different tools to measure the variable. The most common tool used for measuring the work engagement is Utrecht Work Engagement Scale (UWES) which consist of three dimensions such as vigor, dedication, and absorption which constitute work engagement.

Coetzee and Rothmann (2005) tried to assess the factorial validity of the Utrecht Work Engagement Scale (UWES). Structural equation modeling confirmed a three-factor model of work engagement consisting of vigor, dedication and absorption, with acceptable internal consistencies. Practically significant differences were found in engagement levels of employees in different language groups, those with different years of service at the institution, as well as between academic and administrative employees.

As work engagement is an important variable in organizational research, numerous studies were conducted by different scholars to know the antecedents of work engagement in an employee. Some of the studies focused on how the job resources influence the work engagement of the employee. These job resources were related with resources available to them in their organization. The availability of these resources likes organizational resources such as support from supervisor,

support from coworker; and personal resources of employees may positively influence them.

Koyuncu (2006) reported that, organizational variables such as rewards, recognition and value fit predicted the engagement of the employees. Coetzer and Rothmann (2007) found that growth opportunities (including variety, opportunities to learn and autonomy) in the organization positively related to work engagement. In addition to the influence of growth opportunities on work engagement, they also found that organizational support (including relationship with superiors, role clarity, information, communication and participation) and social support were positively related to work engagement of the employees.

Schaufeli and Bakker (2004) found that job resources like social support, supervisor coaching, and feedback were positively related to engagement. In their study, Mauno, Kinnunen, and Ruokolainen (2007) reported that work engagement was predicted by job resources, job demands, job control and organization-based self-esteem. Anitha (2014) reported that the variables working environment and co-worker relationship were most prominent in determining the engagement of employees towards their work. The meta-analytic study of Halbesleben (2010) showed that the resources of social support, autonomy, feedback and a positive organizational climate show a significant positive relationship with work engagement.

In addition to job resources, scholars also showed interest in studying the personal resources of individual that directly or indirectly influence the work engagement of an employee. For instance, one study found that self-efficacy, self-esteem and resilience like personal resources motivate the employees to get engaged

in their jobs (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). Similarly, while examining the potential antecedents of work engagement, Burke and El-Kot (2010) found that need for achievement and workaholic job behavior predicted all three engagement measures namely vigor, absorption and dedication.

Researchers also had keen interest in knowing the relationship of personal and job resources with work engagement dimensions. Salanova and Schaufeli (2008), in their study reported that engagement (vigor, dedication) of the employee fully mediated the relationship of job resources (job control, feedback, and variety) and proactive work behaviors. Arifin, Troena, Djumahir, and Rahayu (2014) reported that organizational culture, leadership and personal characteristics (self-esteem and self-efficacy) positively and significantly influence work engagement of teachers.

The reviews support the view that when there is availability of resources which satisfy the employee: when there is enough support from the environment to the employee, when the employee enjoys autonomy, and employees working in positive organizational climate, the work engagement of the employee may likely to increase. But when the employees are not satisfied with the resources available to them, it creates some negative consequences. For example, the study of Schaufeli and Bakker (2004) revealed that job demands like workload, emotional demands etc. were negatively related with engagement. Similarly, Coetzer and Rothmann (2007) reported that job demands such as work overload are negatively related to work engagement. Using regression analysis Uludag and Yaratan (2010) revealed that the dimensions of burnout, namely, emotional exhaustion, cynicism, and reduced

professional efficacy were negatively associated with work engagement variables- vigor, dedication, and absorption respectively.

From the earlier studies, it is clear that work engagement is a positive variable which lead to organizational success. Harter, Schmidt and Hayes (2002) reported that, engagement of the employee was associated positively with the factors such as customer loyalty, productivity, profitability and customer satisfaction which will result in organizational success. Sonnentag (2003) reported that engagement influences in-role behavior, proactive behavior and organizational citizen behavior of the employees. In 2008, Bakker and Demerouti, stated that engaged workers are more creative, more productive, and hardworking. The personal resources motivate the employees to engage in their works. Xanthopoulou *et al.* (2007) showed that engaged employees are highly 'self-efficacious'; which means that engaged employees tend to believe that they are able to meet the demands that they face in any context.

The work engagement of the employee is not only plays a great role in determining the performance of the organization, but also creates some positive effects in the employee himself/herself also. For example, Demerouti, Bakker, de Jonge, Janssen, and Schaufeli (2001) reported a negative relationship between work engagement and psychosomatic health complaints such as headaches, chest pains etc. Similarly, Schaufeli, Taris, and van Rhenen (2008) reported in their study that engaged workers were reported fewer psychosomatic complaints than their non-engaged workers. These studies suggest that, whenever the employee engaged to the work, the psychosomatic problems may less likely to occur. Similarly, Schaufeli,

and Bakker (2004) found that, the engaged workers informed less health-related issues such as headaches, cardiovascular problems, and stomach aches to them.

Bakker (2007) noted that engaged employees have more frequent positive emotions and better health and thereby creates their own resources to engage in their work and transfer engagement to coworkers. After controlling the job demands and resources of the team members, Bakker *et al.* (2006) reported that team-level work engagement was related to engagement of the individual employee of that team, Above studies is the best evidence that engaged employee will transfer their vigor, dedication, and absorption to coworkers and perform better as a team.

From different studies Bakker and Demerouti (2008) identified the major four reasons for good performance of engaged workers better than non-engaged workers. They identified that engaged employees often experience positive emotions (eg: happiness, joy, and enthusiasm); experience better health (mentally and physically); create their own resources which will help them to perform well; and transfer their engagement to others. Similarly, the work carried out by Munoz, Vergel, Demerouti, and Bakker (2014) showed that daily work engagement has a direct effect on daily happiness of an individual employee. The study also observed that employee's daily happiness influenced the partner's daily happiness and make a home happy.

Thus, engagement of the employee towards the work creates some positive effect on both individual as well organization. Here, it becomes important to make strategies that improve the engagement of the employees towards work. Training or interventions could create a positive environment that foster engagement. Knight, Patterson and Dawson (2017) conducted a systematic review and meta-analysis to

investigate the effectiveness of work engagement interventions and forwarded three conclusions from the reviews related with intervention. First among the conclusion include- interventions increase work engagement positively. Second- suggested to conduct intervention in groups, as it will increase resources, work engagement and well-being. Third- all the analyses indicated large heterogeneity, suggesting other important moderators and subgroups.

After controlling for general levels of personal resources and engagement, Xanthopoulou, Bakker, Demerouti, and Schaufeli (2009) revealed that day-level job resources had an effect on work engagement through day-level personal resources. Day-level coaching had a direct positive relationship with day-level work engagement, which, in-turn, predict daily financial returns. Additionally, previous days coaching had a positive, lagged effect on next day's work engagement and next day's financial returns.

All these intervention plans which make changes in organizational and personal resources boost the engagement and performance of the employees positively. At the same time, when the employee face undesirable experience from the organizational resources and lack personal resources, the organization will witness worst performance from the employee. Stress at work is one of the hot topics discussed in organizational behavior and allied subjects which hinder the performance of the employees.

Studies related with Work Stress

Work stress is a condition of an individual which emerge from different zones of working environment. An optimum level of stress is needed for any individual employee, as it forces them to do their work. But when it becomes

extreme, it will bring negative impact to the individual and to the organization. Numerous studies were conducted in the area of organizational behavior and allied subjects across the world.

Studies reported that stress at work creates negative influences on individuals as well as organization. For example, Lundberg (2002) examined the relationship between stress and work related upper extremity disorders (WRUED). Results revealed that both physical and psychosocial work conditions may contribute to WRUEDs by inducing physiological stress and muscle tension in employees. The relationship of stress at work with work related medical problems such as cardiovascular diseases, irritable bowel syndrome, hyper tension and cancer (Murray, *et al.*, 2004; Lim, Bogossian, & Ahern, 2010) outlined by different scholars.

As the stress creates negative influences on individuals, it also creates some negative influences on the organization. This negative effect was pointed out by different scholars. Bhatti, *et al.* (2011) also reported that job stress had negative impact on the health of employees. Ranjit and Mahespriya (2012) suggests that level of job stress influences the level of quality of life by indicating that higher level of stress leads to low quality of life.

Many studies reported that there exists a negative relationship between job attitude variables and stress of the employees. Bhatti, *et al.* (2011) reported a significant negative relationship between job stress and job satisfaction. Similarly, Fairbrother and Warn (2003) also confirm that occupational stress is negatively related to job satisfaction. These results indicate that, when the employee experience

high stress in the organization, will develop a negative attitude towards the organization and in turn reflect in overall performance of the employee negatively.

As the excessive stress causes negative impact on both individual and organization, it is important to know the factors behind the stress at work. Bhatti, Shar, Shaikh, and Nazar (2010) classified the factors behind the stress as external factors and internal factors. The external factors include variables such as climate, economic conditions and employee family, while intra-organizational stressors are related with company policies, working conditions, and leadership, workload and office timings. From their analysis, Bhatti, Shar, Shaikh, and Nazar (2010) concluded that 33% of overall stress was caused by external factors and 67% stress was due to internal factors or intra-organizational factors.

As internal factors are most important cause of stress, researchers are exploring more about organizational antecedents of stress. Pienaar and Rothmann (2003), concluded that occupational stress germinate from two sources, namely job demands and a lack of job resources. All the intra-organizational stressors are related with job demands and lack of job resources. Happell, Dwyer, Reid-Searl, Burke, Caperchione, and Gaskin (2013) identified high workloads, unsupportive management, human resource issues, interpersonal issues, work shift and career development as potential stressors in nursing professionals. Organizational variables such as poor pay, understaffing, and excessive workload were pointed by Lapane and Hughes (2007), which determine the stress of employees.

Different studies from 1996 to 2012 were analyzed by Thian, Kannusami, and Klinin-Yobas (2013) and found that job demand, role stress and interpersonal conflict at work as major job stressors. Major Job demands listed by them includes

work load, shortage of staff and time constraints regardless of organizational and cultural differences. Common role stress experienced by nurses includes role conflict and role ambiguity. In addition, interpersonal conflict (with colleagues and supervisor) also outlined by them.

Imtiaz and Ahmad (2009) identified personal issues, lack of administrator support, lack of acceptance for work done, low span over work environment, unpredictability in work environment, inadequate monetary reward as important factors which affect stress in an employee. Manzoor, Awan, and Mariam (*nd*) showed that the stress levels among employees is high in certain areas like work overload, long working hours, problems in family life, pressure at work, job insecurity, and physical agents.

Besides these organizational factors, the physical environment also plays an important role in determining the stress of employees in an organization. The physical environments which cause stress in employee definitely influence the productivity of the organization. A study by Sarode and Shirsath (2014) is an example which proves the relationship between physical environment and productivity. They found that, work environment including lighting, noise, color, and air quality are connected each other and has a very important role in determining the productivity of the organization.

Sometimes the intra organizational problems are associated with external environment. This association also brings some effect on employee in the form of stress and stress related problems. For example, the hierarchical regression analysis of Bowen, Edwards, Lingard, and Cattell (2014) reports that working long hours is

significantly associated with stress, and mediated through an imbalance experienced between work and life/family commitments.

Different employees perceive the stress in different manner. Some may cope with the stress in a softly while some are not able to cope with stress. Lee and Lee (2001) examined the roles of coping strategies used by individuals to cope with job stress who is working in different industries. From the study, it was found that, direct action coping strategy is used to reduce the job stress by affirmatively changing the deleterious effects of job stressors in the work environment. Baugher and Roberts (2004) found that problem-focused strategies of workers to cope with potential risks associated with stress reduced anxiety and depression. Union growth and membership in a union helped them in reducing their strength because it gave them an opportunity to raise their voice against hazards in the organization.

As the stress at work creates problems in work setting, it is important to control the stress. For this purpose, it is important to make intervention plans to reduce stress. Giga, Noblet, Faragher, and Cooper (2003) suggested that, the most effective means of reducing stress in the work-place is possible with the intervention of organization itself. The intervention plan not only benefits the individual employee, but also benefits the organization in their long run.

By adopting best practices and intervention plans the organization can reduce stress related problem. Reduction in the level of stress boost positive organizational factors like work engagement, job satisfaction, etc., the organization can increase the performance of the employees which in turn reflect in the productivity of the organization.

Studies related with Performance

The performance of the employee includes all the activities that are relevant in achieving organizational goals. As the performance of the individual is essential to the development of the organization, the managements and the researchers are continuously researching about the factors that are affecting the performance of the individual employee. There are many factors which influence the performance of the employees. This section covers the most important studies conducted and focuses on the performance of the employees in different organizations.

There are a number of factors which influence the performance of the employees; researchers have to focus on different factors which directly or indirectly influence the performance. One of the most researched areas in this field is work environment of an employee and its related factors. Mathews and Khann (2013) suggested that an adequate lighting system, noise, furniture, and temperature will influence employees both physically and psychologically in a positive manner. This positive influence in turn influences the performance of the employees.

Besides these physical environments, there exists some other factors which directly or indirectly influence the performance of employees. How the management or higher authorities interact with employees working in the organization is one of the important areas in this field. For example, Naharuddin and Sadegi (2013) identified that the elements like job aid and supervisor support also influence the employee performance. Similarly, Walumbwa, Mayer, Wang, Wang, Workman, and Christensen (2011) reported that ethical leadership was positively and significantly related to employee performance. Ogbonna and Harris (2000) found a significant relationship between leadership style and performance of the employees. Arifin,

Troena, Djumahir, and Rahayu (2014) reported that organizational culture, leadership, personal characteristics (self-esteem and self-efficacy) and work engagement positively and significantly influence teacher performance.

Imtiaz and Ahmad (2009) reported that an increase in personal dilemmas, decrease in financial reward, decrease in influence over work environment, decrease in supervisor support resulted in poor employee performance. Researchers also explored the influence of organizational variables which differentiates employee. For example, Salanova, Agut, and Peiro (2005) found that organizational resources and work engagement predict service climate, which in turn predicts employee performance.

Bakker, Demerouti, and Verbeke (2004) used job demands-resource (JD-R) model to explain how certain job characteristics—such as demands and resources—make variance in both in-role (activities that are linked to one's formal job role) and extra-role (behaviors linked to the effective functioning of the organization) performance through work. According to them, the resources available to the employees in the organization may act as a motivational instrument which promotes the employees to perform well in the organization.

Studies also demonstrated that, personality dimensions may also influence the performance of the employee in the organization. Barrick and Mount (2009) reported that, among big five personality dimensions, conscientiousness and emotional stability serve as the most valid predictors of individual performance outcomes. Chughtai and Lateef (2015) observed a positive correlation between performance of the employee with emotional intelligence dimensions- social awareness and relationship management. The multiple regression analysis conducted

by Robertson, Birch, and Cooper (2012) revealed that psychological well-being and work attitudes do predict the self reported levels of performance. Khan, Dongping, and Ghauri (2014) found that attitude related factors such as job satisfaction and job commitment have a strong positive effect on employee's performance. Similarly, Chuqhtai (2008) reported that there is a significant positive relationship between job involvement and performance.

Some studies also found that the policies and process of the organization has a greater influence in determining the performance of the employees. Odunlami and Matthew (2014) shows that, there is a significant relationship between organizational policies such as compensation management and good welfare service with employees' performance. Based on past reviews on performance in different organizations, Dobre (2013) suggests that, factors such as empowerment and recognition increase employee motivation leads to good performance. Tanveer, Shaukat, Alvi, and Munir (2011) stated that all human resource practices such as recruitment and selection, training and performance appraisal among employees have a significant relationship with employees' performance in textile sector.

Studies are reported that various training conducted by the organization brings positive effect on performance of the employees. Iqbal, Ijaz, Latif, and Mushtaq (2015), in their study concluded that, there is a positive relationship between the trainings and employees' performance. Similarly, Khan, Khan and Khan (2011) also reported that, there is a positive relationship between training and performance. Supporting to this notion, Bhat (2013) found that, excellent training programs will result in more efficiency, accuracy and effectiveness in lesser time and cost which will positively influence the performance.

The organizational or industrial field now experiences a drastic change in the field of technology. So it is important to adopt trainings based on recent technological changes. For example, in 2000, Lin (2000) analyzed two different crisis happened in two different organizations and explored the role of computer in determining the organizational performance in these crucial situations. This study demonstrated that computational case analysis will provide a systematic and obvious direction for successful crisis management. Now the technologies are changing day by day. Thus, organizations should give training to deal with technological changes to make the organization more systematic.

The studies discussed above revealed that how different factors influence the performance of the employees positively. But, if the employee does not meet satisfaction from the factors which increase the performance of them, it will create negative consequences in both individual as well as organization. For example, Iqbal, Ijaz, Latif, and Mushtaq (2015), found that there is a negative relationship between the long working hours and employees performance and between the communication barriers and employees performance. Here the employee performance is decreased as there exist negative stimulus in the organization. Thus, it is important to adopt excellent plans to motivate employee towards work by eradicating the entire negative stimulus. Dobre (2013) points out that, not all individuals working in the organizations are the same; therefore, each individual employee should be motivated using appropriate strategies.

Hence it is clear that the work environment influence the performance of the employees. In addition to above discussed factors, individual characteristics also influence the performance of an individual employee in an organization.

Studies explore the relationship between selected variables under study

Above section discussed the studies related with organizational culture, work engagement, work stress and performance. From the discussed studies, one can get an overall picture about the selected variables. In this section, relationship between the variables organizational culture, work engagement, work stress and performance are discussed. By going through the studies which explore the relationship between these variables, one can get a complete portrait about the relationship between the variables under study.

Organizational culture and work engagement

Macey *et al.* (2009) suggested that work engagement can be created and sustained with the support of culture of the organization. It suggests the importance of organizational culture in determining the work engagement of employees. Many scholars tried to find out the influence of the dimensions of organizational culture on the dimensions of work engagement. Organizational culture includes all the resources that characterize an organization. Schaufeli and Bakker (2004) reported a positive correlation between job resources (performance feedback, social support, and supervisory coaching) which is an essential component of organizational culture with work engagement dimensions such as vigor, dedication and absorption. Similar to this, Hakanen *et al.* (2006) reported that organizational variables such as job control, information, supervisory support, innovative climate and social climate were all positively related to work engagement.

In 2010, Crawford *et al.* established that the joint effects of a number of job resources such as access to information, support from coworkers, supervisors and organization also create some significant positive relationships with work

engagement. Still researchers are not lost in interest in finding the relationship of organizational culture with the work engagement of the employee. Most recently, Kalia and Verma (2017) studied the influence of organizational culture dimensions such as openness related with freedom, confrontation of the challenges, trust in the organization, authenticity which is related with trust, autonomy of the employee, collaboration which is related with relationship and chance for experimentation on the work engagement dimensions vigor, dedication and absorption. Among them, autonomy and experimentation were established a significantly relationship with all the three dimensions of employee engagement in their study. The study also suggests that the dimension-trust has predicted the work engagement dimensions- dedication and absorption, while the dimension- collaboration influenced only absorption.

Organizational culture and work stress

Just like the relationship between organizational culture and work engagement, organizational culture may also have a strong relationship with stress of the employees in an organization. According to Pienaar and Rothmann (2003), stress at work place originates from job demands and a lack of job resources which characterize organizational culture. In his study, Kanugo (2006) argued that the nature of organizational culture has a significant influence on role conflict as well as role stress. But, Sarath and Manikandan (2016) reported that, there was no significant influence of organizational culture on work stress. Further, the study also reported no significance difference in work stress dimensions- control, demand, support and role on the basis of nature of organizational culture at any level.

Organizational culture and performance

The characteristics of organizational culture determine the performance of employee working in that organization. Organizational culture includes everything in the organization which influences the employee directly or indirectly. Depending upon the extent to which how the employee perceive their organizations culture determine the performance of the employees. Ritchie (2000) stated that supportive culture is a motivational instrument which encourages employees to show their maximum productivity in the organization.

Ginevicius and Vaitkunaite (2006) studied the impact of organizational culture and its dimensions on performance of individuals, using a newly developed questionnaire of organizational culture revealed that, the dimensions of new organizational culture inventory such as strategic direction, learning, fair reward and support was significantly related with the performance. But other dimensions of new inventory such as involvement, cooperation/collaboration, transmission of information, care about clients, adaptability, system of control, communication, agreement, coordination and integration has not much related with performance of the employee.

Many researchers found that organizational culture is a significant predictor of performance. For example, Biswas (2009) in a study reported that culture is a significant predictor of intention to quit and employee performance. Zain *et al.* (2009) stated that organizational culture dimensions such as teamwork, communication, reward and recognition, training and development were the key determinants of performance in an organization. Paschal and Nizam (2016) found

that organizational culture such as ritual, value and heroes has significant influence on employee's performance.

By analyzing the impact of organizational culture on employee performance, Uddin, Luva and Hossian (2012) suggested both positive and negative mannerism of culture in the organization has a significant role in the performance and productivity of employees. If an employee imbibe the culture and attached to the organizational culture may increase the performance. George and Jayan (2012) reported that employees with a higher organizational culture which bond the employee with the organization significantly showed high effectiveness than employees with moderate and low organizational cultures. The study revealed that there is a strong relationship between organizational culture and employee effectiveness.

The study conducted by Giri, Nimran, Hamid, and Musadieq (2016) also found the significant influence of organizational culture on employee performance. Shahzad, Iqbal, and Gulzar (2013) observed a significant positive relationship between organizational culture and employee's performance. Similarly, Ojo (2009) also reported that, organizational culture has a positive and significant effect on employee performance.

The studies of different scholars (Syauta, Troena, Setiawan, & Solimun, 2012; Gregory, Harris, Armenakis & Shook, 2009; Heskett, 2012) suggests that, there are some factors which mediate the relationship between organizational culture and performance of the employee. It suggests that, organizational culture also has an indirect effect on the performance of the employees. Supporting to this, Bindl and Parker (2010) suggested that, when an employee internalize the values and goals of organization in which they work in, will be engaged to their work and produce

positive behaviors at work which may positively influence the performance of the employees.

Sometimes, a number of organizational variables play a meditational role in between organizational culture and employee performance. Job attitude is one of the important variables which are directly related organizational culture. Gregory, Harris, Armenakis, and Shook (2009) conducted their research to examine the meditational role of employee attitudes between organizational culture and diverse measures of organizational effectiveness. The result of their study suggests that employee attitudes mediate the culture–effectiveness relationship.

Work engagement and work stress

In the case of work engagement and work stress, work engagement is related with work stress of the employees. Sarath and Manikandan (2015) found that when an employee is engaged towards his or her work, they may experience very low stress. Iqbal, Khan, and Iqbal (2012) reported that there exists a significant negative relationship between job stress and employee engagement variables- vigor, dedication and absorption. The regression analysis suggests that job stress is a strong predictor of employee engagement.

Coetzee and de-Villiers (2010) found a significant relationship between the participants' sources of job stress and levels of work engagement. Similarly, some other researchers also reported that different sub factors of stress have a significant role in determining the work engagement of employees. For example, Orgambidez-Ramos, Borrego-Ales, and Mendoza-Sierra (2014) showed that stress indicating factors such as role conflict and role ambiguity is negatively correlated with work engagement of the employees. The result indicates that, when the employees

experience stress in their work, their work engagement comes down. But Schaufeli and Bakker (2004) reported a negative correlation between stress and work engagement. The study also reported that some individuals may engaged to their work, even when they are exposed to organizational stressors like high job demands and working long hours. Schaufeli and Bakker (2004) stated that, this happens when the employee find pleasure in dealing with these stressors in the organization.

Work engagement and performance

There are different studies which explore the relationship between work engagement of the employees and their performance in the organization. According to Crawford, LePine, and Rich (2010), the employees will find their work to be easier and interesting, and even committed when they are engaged in their work. Gorgievski, Moriano, and Bakker (2014) reported that work engagement was related favorably to performance through its relationship with more positive effect and less negative effect.

Anitha (2014) reported that employee engagement had significant impact on employee performance. Bakker *et al.* (2004) reported that the employee who got high score in work engagement received higher ratings from their colleagues on their performance. Mokaya and Kipyegon (2014) stated that engagement is a very powerful factor used to measure an organization's vigor and direction towards superior performance. Perrin (2008) reported that organization who hired highly engaged employees had a better productivity than organizations who hired highly disengaged employees.

More recent studies have reported that some personality factors serve as contributory factors in between work engagement and individual performance.

Demerouti (2006) stated that personality traits such as goal directedness and conscientiousness of employee stand in between work engagement and job performance. Similarly, Bakker *et al.* (2012) reported that individuals who are motivated to be hard-working, reliable, self-disciplined and optimistic can convert their work engagement into increased performance.

Bakker and Bal (2010) reported a positive relationship of weekly work engagement with in-role (activities that are linked to one's formal job role) and extra-role (behaviors linked to the effective functioning of the organization) performance of the teachers. The study of them also reported meditational role of work engagement in between job resources and in-role and extra-role performance. The results suggests that employees who are presented with job-related resources are engaged in their work and makes them to perform well (both in role and extra role) in the organization.

Some other scholars also forwarded the meditational role of work engagement. For example, Gupta, Acharya and Gupta (2015) suggested that work engagement mediates the relationship between supervisory support and employee performance. Similarly, Yalabik, Popaitoon, Chowne, and Rayton (2013) stated that work engagement plays a meditational role between job satisfaction and job performance. Xanthopoulou, Baker, Heuven, Demerouti, and Schaufeli (2008) demonstrated that colleague support and self-efficacy were both related to job performance through work engagement.

Work stress and performance

Bashir and Ramay (2010) examined the relationship of job stress with job performance of employees and reported that there exist significant negative

correlations between two variables which suggest that job stress significantly reduce the performance of an individual in an organization. Warraich, Ahmed, Nawaz, and Khoso (2014) reported that, stress which arises from workload, role conflict, and inadequate monetary reward reduces the efficiency of employees in the education sector. Similarly Ahmed and Ramzan (2013) found a negative relation between job stress and job performances of employees working in a banking sector. Concluding the results, they suggested that organization management should consider effective stress management practices to increase employee satisfaction and overall employee performance.

Karunanithy and Ponnampalam (2013) reported that, both organizational related stress and individual related stress are negatively correlated with performance of the employees. In addition to the relationship between, they also reported that overall stress negatively predict the performance of the employee. Similarly, Ahmed and Ramzan (2013) in their study concluded that, every one percent increase in stress at work place will negatively predict the performance of the employees. But Manzoor, Awan, and Mariam (*nd*) reported that stress arise in the working environment is not related with performance of the employees and there by concluded that there is no relationship between job stress and employee performance.

Work engagement, work stress and performance by demographic variables

From the reviewed articles, it can interpret that work engagement, work stress and employee performance is the product of different factors existing in organizational culture. While analyzing work engagement, work stress and performance of the employees working in different organizations, researchers more

mostly concentrating on these organizational factors which exist in the organization. But, there are studies which observed the significant difference in work engagement, work stress and performance by certain demographic factors. This section deals with the studies which explore the demographic factors and its relation with work engagement, work stress and performance of the employees.

Work engagement and demographic variables

A number of studies reported about the linkage of different demographic variables with work engagement. Bezuidenhout and Cilliers (2011) reported a positive relationship between age and work engagement which suggests that when the age of an employee increases, engagement level of them also increases. But, when they searched for the relationship of age with sub dimensions of work engagement, it was found that, even though age is related vigor and absorption, it was not related with dedication. Sarath and Manikandan (2015) observed a main and interaction effect of age and experience on vigor and dedication which suggests that work engagement significantly differ by the age difference and the level of experience.

Arya and Manikandan (2013) reported that experience of the employee significantly influence all the dimensions of work engagement. Kong (2009) reported that gender has a significant influence on work engagement. The result of the study reports that male employees have higher scores over female ones on the dimension of vigor and absorption while female employees gain more scores than male ones on the dimension of dedication. The study also reports an interaction effect of gender and marital status in determining the work engagement dimensions of vigor and dedication.

Contradict to the above studies related with work engagement and demographic variables, reported that there is no significant relationship between them. For example, Anand, Banu, Badrinath, Veena, Sowmiyaa, and Muthulakshmi (2016) reported that engagement of the employee does not vary with the demographic factors such as gender, age, position and income of the respondents. Similarly, Madan, and Srivastava (2015) also reported that demographic variables such as age, gender and marital status do not have a significant impact over employee engagement. Sarath and Manikandan (2014) reported that sex and experience do not have a significant influence over any dimensions of work engagement or in over all work engagement. Another study done by Sarath and Manikandan (2015) reported that, there was no much significant influence of gender on the vigor, dedication, absorption of the employees. But, the same study revealed that age and experience interact with each other on work engagement and its dimensions.

Work stress and demographic variables

In addition to various organizational (internal) and environmental (external) conditions, individual or demographic factors also plays an important role in determining the effect of stress. In a study among police personnel, Hunnur and Bagali (2014) found that stress causing dimensions will differ drastically based on age, education, work experience and place. Similarly, Kitronza and Mairiaux (2015) found a significant relation between stress and personal variables such as age, seniority, perceived non-adaptation to work, worker status, the poor perception of organization, alcohol consumption, and education level.

Sarath and Manikandan (2015) observed that, females' experiences lower stress than their counterparts. But Kaur (2011) stated that male employees were less stressed than the female employees in their work. The study also reported that rural school teachers were had relatively higher level of occupational stress as compared to urban school teachers. Anbu (2015) reported that gender, type of school and marital status significantly differ on teachers stress levels. The influence of demographic variables on the level of job stress of the IT employees was analyzed by Ranjit and Mahespriya (2012), observed that year of experience has significant influence on job stress. The study also found that hours of work influence the level of job stress which means higher the hour of work, higher is the job stress.

Some researchers reported that, there is no relationship between stress at work and demographic variables. For example, Anbu (2015) reported that professional qualification, location of the school, medium of instruction and their years of teaching experience did not differ significantly in teachers stress. Sarath and Manikandan (2016) stated that, the work stress of the employees was significantly not differing at different educational levels.

Performance and demographic variables

Usually the performance of the employees assessed with- different ratings from the employee, from the coworkers and from the supervisors. Some studied reported that the rated performance is varying with some demographic variables. By studying industrial workers belonging to various industries in Kerala, Manikandan (2010) suggested that demographic variables like age and experience will help to predict the performance of employees. Hassan and Ogunkoya in 2014, reported that, marital status and years of service were correlated with the performance of

employees. Some scholars are reported that, younger employees are poor in their work performance (Kujala *et al.*, 2005), at the same time, some other scholars reported that younger employees work well in the organization (Birren & Schaie, 2001).

Shaffril and Uli (2010) reported a positive correlation between the performance of the employee with working experience and gross salary. Ng and Feldman (2010) stated that, even though there exists a positive relationship between organizational tenure and job performance, the strength of the relationship decreases as organizational tenure increases. Mujtaba and Kaifi (2008) found the impact of education and experience of employees on the performance. Elvira and Town (2001) reported that race made a difference in the job ratings received by workers from their supervisors.

Knowledge gap

From the cited literature, it can observe that, all the selected variables-organizational culture, work engagement, work stress and performance have a significant place in organizational research. Some studies are tried to bring out the factors behind the formation of organizational culture (eg- Carmeli, 2005; Singh, 2007), work engagement (Coetzer & Rothmann, 2007; Schaufeli & Bakker, 2004;), work stress (Happell, Dwyer, Reid-Searl, Burke, Caperchione & Gaskin, 2013; Thian, Kannusami & Klinin-Yobas, 2013) and performance (Naharuddin & Sadegi, 2013; Mathews & Khann, 2013) of the employees in different organizations. Some studies are tried to explore the relationship between selected variables under study (Kalia & Verma, 2017; Schaufeli & Bakker, 2004; Sarath & Manikandan, 2016;

Pienaar & Rothmann, 2003; Ritchie, 2000; Biswas, 2009, Coetzee & de-Villiers, 2010; Gorgievski, Moriano & Bakker, 2014).

All these studies underline the importance of organizational culture, work engagement, work stress and performance underline the importance of these variables in the organizational field. From the above literature, it was observed that, the selected variables have a significant role in determining performance of the employees working in different organizations or industries (Bashir & Ramay, 2010; Ginevicius & Vaitkunaite, 2006; Mokaya & Kipyegon, 2014). As these variables have an important role in determining the performance of our organizations or industries, the importance of these variables remain forever.

Even though, there are different studies which explore the influence of organizational culture, work engagement, work stress and performance, it is observed that, there exists very limited number studies which explore the influence of organizational culture, work engagement, work stress on performance of the employees working in India, especially in the state of Kerala (eg- Sarath & Manikandan, 2016, Kalia & Verma, 2017). In addition to this, the investigator also observed that, most of the studies related with organizational culture, work engagement, work stress analyzed its independent effect on the performance of the employees, not given much importance to its interaction effect. So the knowledge nature of organizational culture, work engagement, work stress in determining the performance of industrial employees working in the state of Kerala, India, is still perceived as ambiguous in Kerala context.

Hence, it possible to conclude that there exists a knowledge gap in the literature about the organizational culture, work engagement, work stress and

performance of industrial employees working in Kerala. Based on the knowledge gap observed, the investigator constructed the objectives and hypothesis of the present study. The investigator also included the demographic variable- experience in the formed objectives and hypothesis, because, from the literature, investigator felt that, demographic variable- experience will have an interaction with organizational culture, work engagement and work stress in determining the performance.

Objectives

From the reviewed articles, the investigator formulated following objectives for the present study.

1. To find out the extent of the organizational culture, work engagement, work stress, and performance of the industrial employees.
2. To know how the organizational culture, work engagement, work stress, and performance of the industrial employees are related.
3. To know the joint and relative contribution of organizational culture, work engagement and work stress in predicting the performance of industrial employees.
4. To know the interaction effect of experience, organizational culture, work engagement and work stress on performance of the industrial employees.

Hypotheses

From the formulated objectives, the investigator formulated following hypothesis to conduct the study.

1. Organizational culture, work engagement, work stress, and performance of the industrial employees will be normally distributed.

2. The relationship between organizational culture, work engagement, work stress, and performance will be significant.
3. Organizational culture, work engagement and work stress will be significant predictors of performance of industrial employees.
4. The main and interaction effect of experience, organizational culture, work engagement and work stress on performance will be a significant.

Chapter 3

METHOD

Research is the process of collecting and analyzing of information in a systematic way to find something (Saunders, Lewis, & Thornhill, 2007). Designing a method for a research work is an important step in the research process. The method adopted by a researcher determines the outcome of a research process. Therefore, before selecting a method, a researcher must thoroughly know all the details of research process. Saunders *et al.* (2009), explained the 'research process' through the concept of a 'research onion'. The layers of the research onion related with the stages that a researcher must go through to get a research outcome. It consists of six layers or stages; and it includes-research philosophy, research approach, research strategy, research choices, time horizons and the data collection process (techniques and procedures).

Based on the research onion forwarded by Saunders *et al.* (2009), the research philosophy is the first stage of a research process. It is related with the development of knowledge and the nature of that knowledge which is ultimately depend on the research question the researcher is looking to answer. Development of knowledge will assist the researcher in adopting a better to approach their study. Usually, a researcher adopts either inductive or deductive approach in a research. Based on the approach that is selected, the researcher, further select a strategy for data collection such as, experiment, survey, case study, etc. Selection of one method (mono method) or different method in either qualitative or quantitative category (multi method) or integration of qualitative or quantitative method (mixed method) for data collection is a choice of the researcher. Before entering into the data collection, the researcher has to aware of time limitations and chooses either cross

sectional study or longitudinal study. The layers of research onion outline that; a researcher must go through all the five stages to get in to the data collection process.

In the present study, the investigator has gone through all the above stages to get into the data collection process. The first chapter as well as the second chapter of the research manuscript briefly explains the literatures that is helped the investigator to develop 'research philosophy'. Based on the existing literature, the investigator selected a deductive approach to study the organizational culture, work engagement, work stress and performance of industrial employees in Kerala. To get the information related with the variables under study, the investigator executed survey method/questionnaire method (mono-method) as the strategy for data collection. The present chapter discusses the details about the data collection process in this research by classifying it into four sections.

Section A- Participants

Section B- Instruments

Section C- Procedure

Section D- statistical techniques used.

The first section discusses about the characteristics of the participants involved in the study. The next section gives the details about the instruments used in the study for data gathering. The third section briefly explains the procedure followed by the investigator to collect data from the participants. The final section describes the statistical techniques used by the investigator to analysis the collected data. The details of each section are given below.

Section A: Participants

The research topic was to study organizational culture, work engagement, work stress and performance of the industrial employees in Kerala. Therefore, the participants of this study consist of 302 employees working in different industries located different part of Kerala state, India. The structure and products of selected industries are different, but the nature of work situation and functioning of the industries are similar. All the selected industries belong to public sector

The investigator has given a special attention to get a population which represents the industrial employees of Kerala. Even though, all the industries are not from all the districts of Kerala, the employees working in the industries were coming from both native districts and neighboring districts. Hence, the investigator assumed that the participants selected for the study represent the industrial workers of Kerala to an extent. More details about the participants in the study were collected through background information schedule such as location of industries, religious affiliation of the participants, level of education etc., of the participants and are presented in separate tables. The details are discussed.

Location of the industries (zones)

Required number of participants was selected from different industries located at various parts of Kerala and they were categorized as northern Kerala, central Kerala and southern Kerala. Details of the participants based on the location of industries are presented in table 1.

Table 1

Details of the participants based on location of the industries

Zones	Frequency	Percent	Cumulative Percent
North Kerala	164	54.3	54.3
Central Kerala	93	30.8	85.1
South Kerala	45	14.9	100.0
Total	302	100.0	

From table 1, it can be seen that among 302 participants, 164 (54.3%) were from Northern Kerala, 93 (30.8%) belongs to Central Kerala and 45 (14.9%) from southern Kerala. The number or percentage does not ensure that, these employees are actually from the locality of that industry, but may be from neighboring locality who came to work in that industry.

Sex

Sex of the participants was collected from the responses that were given in the background information schedule. The choice was to put a tick mark on the three choices- male, female and third gender. The details of the participants on the basis of collected information are presented in the table 2.

Table 2

Details of the participants based on sex

Sex	Frequency	Percent	Cumulative Percent
Male	266	88.1	88.1
Female	36	11.9	100.0
Total	302	100.0	

From table 2, it can be observed that among 302 participants, there were 266 (88.1%) male participants, and 36 (11.9%) female participants. Even though, the modern era witnessed a massive entry of women in work force, still men occupy a

major part in the working of industries. From table 2, it was also observed that, there were no one coming from third gender category, and was dominated by male and female employees.

Religion

Religious affiliation of the participants was also collected using background information schedule. Based on the religious affiliation, the participants were categorized into three groups and presented in the table 3.

Table 3

Details of the participants based on religion

Religion	Frequency	Percent	Cumulative Percent
Hindu	122	40.4	40.4
Islam	169	56.0	96.4
Christian	11	3.6	100.0
Total	302	100.0	

From table 3, it can be seen that there were 122 (40.4%) participants belong to Hindu community, 169 (56.0%) were belong to Islam and 11 (3.6%) belong to Christian community. Kerala is a state, where Hindus and Muslims are majority and Christians are very less in number. This fact may be the reason behind the abnormal distribution of population in the study.

Level of education

Based on the level of education achieved by the participants, the total participants were categorized into three groups and presented in the table 4

Table 4

Details of the participants according to level of education

Level of education	Frequency	Percent	Cumulative Percent
SSLC	212	70.2	70.2
Plus 2	52	17.2	87.4
Degree	38	12.6	100.0
Total	302	100.0	

Table 4 shows that 212 (70.2%) were studied up to SSLC, 52 (17.2%) were gone to attend the higher education, specifically up to plus two and 38 (12.6%) were studied some professional courses or earned degree. It suggests that majority of the participants had some kind of basic education but they were not continued their education after SSLC.

Marital status

Based on the marital status of the participants, the sample was categorized into two groups, married and unmarried. The details of the categorization is presented in the table 5.

Table 5

Details of the participants based on marital status

Marital status	Frequency	Percent	Cumulative Percent
Married	263	87.1	87.1
Unmarried	39	12.9	100.0
Total	302	100.0	

From the table 5, it is observed that, there were 263 (87%) were married and 39 (12.9%) were unmarried. The number and percentage of the participants based on their marital status states that, most of the participants were married.

Union affiliation

The membership in trade union of the participants in the organization was also collected through the background information schedule. Based on the membership in a union, the participants were categorized into two groups and are presented in the table 6.

Table 6

Details of participants based on union affiliation

Membership in Union	Frequency	Percent	Cumulative Percent
Yes	296	98.0	98.0
No	6	2.0	100.0
Total	302	100.0	

The table 6 shows that, among 302 participants, 296 (98%) were affiliated to one of the union in the organization and only 6 (2%) participants were not affiliated to any of the union. The table states that most of the participants were engaged in some type of union activities in the organization and only a few employees were not involved in any type of union activities.

Section B: Instruments

This section describes the instruments that are used to gather information's from the participants. The present study aimed to measure organizational culture, work engagement, work stress and performance of the employees working in different industries of Kerala. To get information about the selected variables, following four instruments were used.

1. Organizational Culture Inventory.
2. Utrecht Work Engagement Scale.

3. Work Stress Scale.
4. Performance Rating Scale.
5. Background information schedule.

Information regarding organizational culture, work engagement, work stress, performance of the employees and personal data were collected with the standardized instruments which are in regional language (Malayalam). The instructions related to marking of responses of each instruments was written in the regional language on the top of each instruments.

A brief description of the instruments used was given under each subheading of this section. In addition to this, reliability and validity of each instrument which ensures the quality of measurement used also mentioned in this section. In research, the term reliability refers to the "consistency" or "repeatability" of the tests or measurement instrument. The validity refers to the degree in which test or measurement instrument is truly measuring what we intended to measure.

Organizational Culture Inventory

Organizational Culture Inventory (OCI) is a 39-item instrument developed by George and Jayan (2010) which is designed to understand an organization's culture. The OCI consist of six vital dimensions like organizational glue (6 items), organizational leadership (5 items), organizational mission (7 items), organizational group (11 items), organizational adaptability (6 items) and organizational autonomy (4 items) which make the organizational culture. The authors claim that, these dimensions of organizational culture are related with values and beliefs of the organization that help or hinder the performance of the organization.

Among the dimensions of organizational culture, organizational glue is related with loyalty, mutual trust, innovation, confidentiality, commitment, etc., which work as glue that bond the organization together. So, items in this dimension explored the extent of bond in the organization (Eg- *'The focus of our institution is on human development and high trust'*). The second dimension- organizational leadership explored the nature of leaders in the organization. The items in this section was related with the qualities of leaders such as coordination ability, facilitating capacity, nurturing personality etc. (Eg- *'The leadership in our organization means to be creative and do serve as a role model'*). The items of organizational mission dimension dealt opportunities for human development in the organization like vision, openness, motivation etc. which give meaning and direction to the work of an employee. (Eg- *'Our institution has a clear vision that gives meaning and direction to its work'*). The dimension- organizational group emphasize on the patterns of relationship at work place. Therefore, items in this factor related with the characteristics of an effective group such as involvement, reward, celebration of personal accomplishment etc. (Eg- *'For me, the work group in which I participate is the best'*). The items in the dimension- organizational adaptability related with the items such as innovation, thinking, career advancement etc., which make the employee adaptable to the work environment. (Eg- *'All the sections of the institutions try out innovative ways of solving problems'*). The sixth dimension- organizational autonomy was dealt with innovation, freedom, self-expression and self-sufficiency which are related with autonomy of the employee in the organization (Eg- *'People at all levels of institution have the freedom to express their views'*).

Scoring

The response category correspond to the items of the instrument used to assess the nature of organizational culture was ranged from strongly agree to strongly disagree. Scores for the responses are 5, 4, 3, 2 and 1 respectively for strongly agree, agree, undecided, disagree and strongly disagree. All the items in the instrument are positively worded.

As the scale have six dimensions, the scores for each dimension to be scored. The dimensions organizational glue (1-6 items), organizational leadership (7-11 items), organizational mission (12-18 items), organizational group (19-29 items), organizational adaptability (30-35 items) and organizational autonomy (36-39) to be scored separately. The sum of the scores for all the items in the scale or sum of the scores of each dimension of scale constitutes the total score on the organizational culture inventory. The maximum score for the inventory is 195 and the minimum score is 39.

The reliability and validity

The reliability coefficient of the organizational culture inventory is 0.802 and the content validity score of organizational culture inventory is 0.945. The reliability and validity of the scale ensures the measurement quality of the tool.

A copy of the Organizational Culture Inventory is appended as Appendix- I.

Utrecht Work Engagement Scale

Utrecht work engagement scale (UWES) developed by Schaufeli and his colleagues (2002) was used to measure work engagement of employees. This scale consists of 17 items with three dimensions- vigor (6 items), dedication (5 items) and absorption (6 items). The authors claim that, the work engagement (work-related

state of mind) of an individual employee can be assessed by measuring the vigor, dedication, and absorption of that employee towards work.

The work engagement dimension- vigor is related with energy level of employee in his or her work. Therefore, items in this dimension explored the mental resilience, the readiness of the employee etc which contribute to the vigor of the employees (Eg- "*At my work, I feel bursting with energy*"). The second dimension of work engagement is dedication which is characterized by a strong involvement of the individual in their work. So, the items in this section explored the feelings of enthusiasm, a sense of pride and inspiration etc, which is symbol of dedication (Eg "*I am proud on the work that I do*"). The third dimension - absorption which is related with the fascination of an employee towards his or her work. The items of this dimension try to measure how the employee is absorbed to their work (Eg- "*I am immersed in my work*").

Scoring

Work engagement of the employee is rated on a seven- point frequency ranged from 'never' to 'always'. Scores were given as 0, 1, 2, 3, 4, 5 and 6 respectively for the responses- never, almost never (a few times a year or less), rarely (once a month or less), sometimes (a few times a month), often (once a week), very often (a few times a week) and always (every day). All items in the scale are positively worded.

Score for each dimension of work engagement can be obtained by adding the scores of each statement in the vigor (items- 1, 4, 8, 12, 15 and 17), dedication (items- 2, 5, 7, 10 and 13) and absorption (items- 3, 6, 9, 11, 14 and 16) dimensions. The total score obtained by adding each statement or by adding the total of three

dimensions constituted the total work engagement score. The range for total score is from zero to 102 and the higher scores indicating higher engagement or lower scores indicating lower engagement.

Reliability and validity

The reliability of the scale established through the method of Cronbach Alpha and was found to be 0.92. The authors claim that, the scale has reasonable construct validity.

A copy of the Utrecht Work Engagement Scale is appended as Appendix – II.

Work Stress Scale

Work stress scale (G) is a five point Likert scale developed by Sarath and Manikandan (2018). This is a one-dimensional scale specifically developed to estimate an individual employee's general stress in the work place with a limited number of items. The items included both positive items and negative items to measure the stress of individual employees at work place. The negatively worded items are 16 and 21, and the remaining items are positively worded.

Scoring

Work stress of the employee measured on a five- point frequency ranged from 'never' to 'always'. As the scale consists of both positive and negative items, the scoring pattern is different for positive and negative items. A negative item is scored as follows: For a 'never' response score 1 is assigned and rarely =2, sometimes =3, often =4 and always = 5. The positive items are reverse scored. Sum total of the scores of all items is an index of the individual employee's General work

stress in which the high score indicate high stress and low score indicate low stress to the employee u=in the work place.

Reliability and validity

Reliability of work stress scale was established by calculating the internal consistency Cronbach Alpha which is found to be .91. The authors claim reasonable face validity to the scale.

A copy of the Work Stress Scale is appended as Appendix – III.

Performance Rating Scale

Performance Rating Scale developed by Jayan and Dharmangadhan (1995) to measure the performance of employees. It consist of two rating scales - (Performance rating scale I and Performance rating scale II). Performance rating scale I included self-rating (absolute and relative rating) and coworker rating (absolute and relative rating). Performance rating scale II included supervisor rating. As a whole, the performance rating scale consist of five scales with one statement each to rate the performance of employees viz.,

- i. Self-rating (absolute rating)
- ii. Self-rating (relative rating)
- iii. Rating by coworker (absolute rating)
- iv. Rating by coworker (relative rating)
- v. Supervisor rating

‘Self-rating’ is the rating of the participant about his/her performance in the organization. ‘Rating by co-worker’ is the rating about the performance of the participant done by the participant’s colleague. Both the self-rating and co-worker rating includes two dimensions- absolute and relative rating. Here, the ‘absolute

rating' indicates the rating based on first perception about the performance of the participant. 'Relative rating' indicates the rating made by the participant and co-worker by comparing the participant's performance with others in the organization.

Scoring

Each scale is scored separately for subjects/self-rating, co-workers rating and his/her supervisors rating. Each scale constituted seven point scale ranging from 1 (least efficiency) to 7 (high efficiency). The performance of an individual is the average of the scores obtained in the above ratings.

A copy of the Performance rating scale (Self-rating, Co-worker rating and Supervisor rating) is appended as Appendix – IV.

Background information Schedule

Along with the research instruments, background information schedule is also administered to the participants to gather personal information about the participants. Through the background information schedule sex, experience, level of education, religious affiliation etc., of the participants was collected.

A copy of the Background Information Schedule is appended as Appendix – V.

Section C: Procedure

The investigator contacted the authority of selected organizations and requested for an appointment. After getting an appointment, the investigator met the authority formally and explained the importance, purpose and application of the research work. Then the investigator fixed a convenient date to collect data from the organization and informed the authority. The investigator reached the organizations on the fixed date, and met the supervisor in charge of work schedule. With the

assistants of supervisor in charge, investigator contacted the employees in the organization personally and met them separately.

Investigator established a good rapport with the employees and explained the importance of research work undergoing. After getting consent from the employees, all the standardized instruments along with background information schedule were given to the employees individually and requested them to respond to the instruments. They were assured that, the given information will only use for research purpose and will protect their privacy. All the doubts related with the instruments were cleared.

After responding to the instruments, the instruments were collected back and checked for omissions and errors. The scoring of each scale was done as per the instructions in the manual. Then the scored data was entered into a spread sheet for further statistical analysis.

Section D: Statistical analysis

To verify the hypothesis, appropriate statistical techniques were used. Statistical Package for the Social Sciences (SPSS) was used to execute the statistical techniques like descriptive statistics, Pearson product moment correlation, Regression analysis and Analysis of Variance (ANOVA).

Descriptive statistics

In any type of research, nature of the data determines the quality of a research work done. Understanding about the nature of distribution of the variable, a preliminary analysis like fundamental descriptive statistics is important. Descriptive statistics summarize the nature of sample selected for the study.

All descriptive statistics are either measures of central tendency or measures of variability (spread). Measures of central tendency describe the center position of a distribution for a data which include the mean, median, and mode. Measures of variability help in analyzing how data is spread-out which include the standard deviation, kurtosis and skewness.

Correlation

The measurement of the degree of relationship between variables is called correlation. When two variables move together, it is said that, they are correlated. Pearson product moment correlation (r) is used to know the extent of relation between two variables. In Pearson correlation, a correlation coefficient is a single number that states the relationship between two variables.

Generally correlational coefficient or ' r ' value 'ranges from -1 to +1. A negative value indicates a negative relation between the selected variables, i.e., when X decreases Y increases. A positive value indicates a positive relation between the variables, i.e., when X increases as Y also increases. The absolute value of the correlation coefficient measures the strength of the relationship between two variables.

Regression Analysis

Like Correlation, Regression is also used to analyze the relation between two variables. In addition to this, regression also helps the researcher to predict the influence of independent variables on dependent variables. More precisely, regression analysis helps to understand how the dependent variable change based on the changes in any one of the independent variable, while the other independent variables are held fixed.

In its simplest (bivariate) form, regression shows the relationship between one independent variable and a dependent variable. When researcher want to predict the value of a dependent variable based on the value of independent variable, the linear regression is used. If the regression analysis consists of two or more independent variables, rather than just one, multiple regression analysis is used in the analysis. Multiple regression also helps a researcher to predict relative contribution of each of the independent variables on dependent variable.

In a regression analysis, a dependent variable-the variable we want to predict, also known as the outcome, target or criterion variable. The independent variables which are used to predict are known as the predictor, explanatory or regressor variables. Beta (standard regression coefficient), B (partial regression coefficient), R and R square were the certain terms that is used in regression analysis to explain the result. Beta value explains how strongly the predictor variable influences the dependent variable. B is the contribution of predictor variable in determining the dependent variable. R value indicates the correlation between the observed value and predicted value. R square denotes states the proportion of variance in the dependent variable.

Analysis of Variance (ANOVA)

ANOVA is a collection of statistical models used for research purpose which was introduced by Ronald Fischer. Usually, the 't' test compare the means of two groups; more than two groups may lead to errors. But, ANOVA reduces those errors of 't' tests, when the variable consists of more than two independent groups. One-way ANOVA is the most common used model to determine whether there are any

statistically significant differences between among the means of three or more independent groups of one dependent variable/factor.

Models like two-way ANOVA, three-way ANOVA, etc., is an extension of one way ANOVA. The difference is in the number of independent variables in the analysis. In addition to the main effect of each independent variable on a single dependent variable, these models also help the researcher to find out the interaction between them. The additional information on group differences also obtained by using post hoc tests (follow up analysis) like Least Significant Difference (LSD), Scheffe's test, Duncan's Multiple Range test, Tukey's HSD test etc.

Chapter 4

RESULTS AND DISCUSSION

Studying the organizational culture, work engagement, work stress and performance will help the authorities/psychologists to know the nature and functioning of an organization. To understand more about these variables, the investigator collected information related to organizational culture, work engagement, work stress and performance from the employees who are working in different industries in the State of Kerala, India. The investigator has gone through all the stages which is explained in the 'research onion' mentioned by Saunders et al, (2009) and gathered information from employees through standardized instruments. All the procedures that were gone through by the investigator explained in the third chapter. This chapter presents the results of different statistical analysis, which was used for testing the hypotheses formulated. Analysis is an important aspect of any research work which test the 'hypothesis' formulated by the investigator on the base of existing literature. The results of different statistical analysis are presented in separate tables and discussed in detail.

Preliminary Analysis

In any research, understanding about the nature of distribution of the variables under study is important. To know the distribution of organizational culture, work engagement, work stress and performance, the investigator has done the fundamental descriptive statistics like arithmetic mean, median, mode, standard deviation, skewness and kurtosis. For organizational culture, the distribution of different dimensions of organizational culture such as organizational glue, organizational leadership, organizational mission, organizational group, organizational adaptability and organizational autonomy, dimensions of work engagement such as vigor, dedication and absorption and dimensions of

performance such as self- rating–absolute, self-rating-relative, co-worker rating-absolute, co-worker rating-relative and supervisor rating. The details are presented in table 7.

Table 7

Mean, Median, Mode, SD, Skewness and Kurtosis of Organizational Culture, Work Engagement, Work Stress and Performance

Variables	Mean	Median	Mode	SD	Skewness	Kurtosis
Organizational Glue	21.43	21.00	21	4.35	-1.17	2.50
Organizational Leadership	15.25	15.00	14	3.97	-1.01	0.93
Organizational Mission	21.19	23.00	24	5.53	-1.21	0.96
Organizational Group	38.61	39.00	42	5.93	-0.75	0.62
Organizational Adaptability	19.07	20.00	20	3.90	-0.57	-0.01
Organizational Autonomy	12.83	14.00	14	3.11	-0.08	0.11
Organizational culture	128.37	127.00	127	20.57	-0.74	0.25
Vigor	25.06	25.00	25	5.16	-0.60	0.90
Dedication	22.50	23.00	23	4.77	-0.32	-0.79
Absorption	22.58	24.00	26	6.55	-0.42	-0.36
Work engagement	70.14	71.00	74	11.99	-0.01	-0.79
Work stress	63.41	66.00	73	14.42	-0.11	-0.75
Self- Rating – Absolute	5.75	6.00	6	1.14	-0.96	0.42
Self-Rating- Relative	5.68	6.00	7	1.18	-0.56	-0.51
Co-worker Rating- Absolute	5.48	6.00	6	1.26	-0.11	1.78
Co-worker Rating- Relative	5.45	6.00	6	1.21	-0.81	0.48
Supervisor Rating	5.04	5.00	5	0.61	-1.25	4.64
Performance	5.413	5.500	5	0.86	-0.54	-0.38

Table 7 shows the pattern of distribution of the variables organizational culture, work engagement, work stress and performance. From the table 7, it can be seen that the mean, median, mode and SD as 21.43, 21.00, 21 and 4.35 for organizational glue, 15.25, 15.00, 14 and 3.96 for organizational leadership, 21.19,

23.00, 24 and 5.53 for organizational mission, 38.61, 39.00, 42 and 5.93 for organizational group; 19.07, 20.00, 20 and 3.90 for organizational adaptability, and 12.83, 14.00, 14 and 3.11 for organizational autonomy. From the table, it can be observed that only a slight difference in mean, median and mode for each dimension of organizational culture and therefore it can be assumed that the scores were normally distributed. Skewness and kurtosis of organizational glue was -1.17 and 2.50; -1.01 and 0.93 for organizational leadership; -1.20 and 0.96 for organizational mission; -0.75 and 0.61 for organizational group, -.56 and -0.01 for organizational adaptability, and -0.08 and 0.11 for organizational autonomy respectively. Even though organizational glue was slightly higher but within the limit, and all other dimensions were so close to zero and thus keep a normal distribution.

For the variable organizational culture- the sum of six dimensions, the mean score (128.37) is slightly higher than the values of median (127) and mode (127). In addition to this, skewness and kurtosis of the organizational culture was found to be -0.74 and 0.25 respectively. These values were not much deviated from the criteria and it can be assumed that the variable 'organizational culture' is normally distributed.

Descriptive statistics viz., mean, median and mode for the dimensions of variable work engagement was also calculated and it was found to be 25.06, 25.00, 25 and 5.16 for vigor, 22.50, 23.00, 23 and 4.77 for dedication; 22.58, 24.00, 26 and 6.55 for absorption. The skewness and kurtosis for work engagement was found to be -.60 and .90 -vigor, -0.32 and -0.78-dedication and -0.42 and -0.36-absorption respectively. These values indicate that, all the dimensions of work engagement were normally distributed.

In the case of Work Engagement which is sum total of vigor, dedication and absorption, the mean, median, and mode was found to be 70.14, 71.00, and 74 respectively. The mode is found to be slightly higher than median which is slightly higher than mean. The SD of work engagement was found to be 11.99. For the variable 'work engagement' the skewness and kurtosis were reported as -0.01, and -0.79 and this ensures the normality of the variable work engagement.

For the variable work stress, mean, median and mode was found to be 63.41, 66.00 and 63, 41. The calculated SD of stress was 14.417. The skewness (0-.108) and kurtosis (-0.75) of stress were within the limit. Therefore it is possible to assume that the variable work stress is normally distributed.

For the dimensions of performance rating, the mean, median, mode and SD were found to be 5.75, 6.00, 6.00 and 1.14 for the variable self- rating-absolute, 5.68, 6.00, 7.00 and 1.18 for self-rating-relative, 5.48, 6.00, 6.00 and 1.26 for co-worker rating-absolute, 5.45, 6.00, 6.00 and 1.21 for co-worker rating-relative; and 5.04, 5.00, 5 and 0.61 for supervisor rating. The skewness and kurtosis was found to be -0.96 and -0.42 for self- rating - absolute, -0.56 and -0.51 for self-rating-relative, -0.11 and 1.78 for co-worker rating-absolute, -.081 and 0.48 for co-worker rating- relative and -1.25 and 4.64 for supervisor rating.

The mean, median mode and SD for the variable 'performance', the combination of five ratings was calculated as 5.41, 5.50, 5.00 and 0.86 respectively. The skewness and kurtosis for the variable performance were -0.54 and -0.38. The central tendency and dispersion one can conclude that the variable performance was normally distributed.

The above results revealed that variables under investigation were not much deviated from the normality and can be considered as normally distributed. This made the investigator to proceed with the parametric tests like Pearson product moment coefficient of correlation, regression analysis and analysis of variance.

Relationship between the variables under study

Organizational variables often play a crucial role in determining the behavior of individuals who work in an organization. In the present study, to know how the different organizational variables such as, organizational culture and its dimensions (organizational glue, organizational leadership, organizational mission, organizational group, organizational adaptability and organizational autonomy); work engagement and its dimensions (vigor, dedication and absorption); work stress; and performance as well as its dimensions (self-rating-absolute, self-rating-relative, co-worker rating-absolute, co-worker rating-relative and supervisor rating) were related each other; Pearson product moment coefficient of correlation was calculated and the results are presented in table 8.

Table 8
Correlation of organizational culture, work engagement, work stress and performance

Variables	Vigor	Dedication	Absorption	Work Engagement	Organizational Glue	Organizational Leadership	Organizational Mission	Organizational Group	Organizational Adaptability	Organizational Autonomy	Organizational Culture	Self-Rating – Absolute	Self-Rating-Relative	Co-worker Rating-Absolute	Co-worker Rating-Relative	Supervisor Rating	Performance	Work stress
Vigor	-																	
Dedication	.187**	-																
Absorption	.326**	.321**	-															
Work engagement	.683**	.654**	.815**	-														
Organizational Glue	.076	.653**	.257**	.433**	-													
Organizational Leadership	.083	.425**	.091	.255**	.832**	-												
Organizational Mission	.017	.577**	.122*	.303**	.816**	.796**	-											
Organizational Group	.111	.671**	.141*	.392**	.318**	.219**	.396**	-										
Organizational Adaptability	.007	.279**	.274**	.264**	.386**	.374**	.484**	.215**	-									
Organizational Autonomy	.142*	.440**	.332**	.418**	.615**	.599**	.770**	.379**	.627**	-								
Organizational culture	.091	.688**	.247**	.448**	.849**	.807**	.917**	.602**	.630**	.832**	-							
Self- Rating – Absolute	.120*	.227**	.169**	.234**	.131*	-.002	-.096	.172**	-.109	.007	.031	-						
Self-Rating- Relative	.130*	.172**	.030	.140*	.105	.064	-.020	.073	-.148*	.003	.023	.821**	-					
Co-worker Rating-Absolute	-.173**	.086	-.027	-.055	.223**	.276**	.015	.069	-.240**	.050	.086	.505**	.527**	-				
Co-worker Rating-Relative	-.197**	-.003	-.095	-.138*	.158**	.192**	.024	-.032	-.138*	.137*	.062	.382**	.504**	.838**	-			
Supervisor Rating	-.066	.113*	-.061	-.017	.350**	.402**	.374**	.013	.137*	.334**	.332**	.084	.200**	.283**	.357**	-		
Performance	-.102	.109	-.045	-.025	.237**	.263**	.074	.041	-.164**	.128*	.121*	.620**	.754**	.900**	.905**	.479**	-	
Work stress	.250**	.258**	.038	.231**	.029	-.094	.031	.287**	.030	-.072	.074	-.008	-.061	-.130*	-.073	-.123*	-.116*	-

* $p < .05$. ** $p < .01$.

From table 8, it can be seen that how the variables organizational culture and its sub dimensions, work engagement and its dimensions, work stress and performance and its dimensions were related each other and the results were discussed under the following headings.

Relationship of Organizational Culture with Work Engagement

When the relationship between the organizational culture and work engagement of the employees were analyzed by using Pearson correlation, it was found that there exists a significant relationship between the variables. When the total scores of the variables taken into consideration, it seems that both the variables significantly and positively correlated each other ($r=.448$, $p<.01$). This result suggest that culture of an organization and work engagement of the employee who are working in the organization has a positive relation, that is, when the employees perceive their organizational culture as good enough to supports them in their work, the employee shows a good work engagement in their organization. Schneider, et al. (2013), studied the relationship of organizational culture with different employee attitudes and reported a direct relationships between them. Even if very limited studies which demonstrate the direct relationship between them, the relationship can be assumed by observing the studies related with work engagement and essential ingredients of organizational culture such as supervisor support, appreciation and information sharing (Bakker *et al.*, 2007), access to information, and support from co-workers, supervisors and the organization (Crawford *et al.*, 2010), etc.

To know more about the relationship of organizational culture with work engagement of the employees working in industrial sector, investigator considered the different sub dimensions of the selected variables such as the relationship of

organizational culture with work engagement dimensions (vigor, dedication and absorption); work engagement with the dimensions of organizational culture (organizational glue, organizational leadership, organizational mission, organizational group, organizational adaptability and organizational autonomy).

In the case of organizational culture, it seems that, the total score of organizational culture which describe the whole culture of the organization was significantly correlated with the work engagement sub dimension- dedication ($r = .688, p < .01$) and absorption ($r = .244, p < .01$). But the organizational culture has no significant correlation with vigor - the energy level of employees at any level.

Similarly the work engagement has a significant positive correlation with all the organizational culture sub dimensions- organizational glue ($r = .433, p < .01$), organizational leadership ($r = .255, p < .01$), organizational mission ($r = .303, p < .01$), organizational group ($r = .392, p < .01$), organizational adaptability ($r = .264, p < .01$) and organizational autonomy ($r = .418, p < .01$). The significant correlation revealed that, when the employee meets above characteristics of the organizational culture, work engagement of the employee's increases.

The positive relationships suggest that, organization with essential resources will motivate the employees to show more engagement in their work. Crawford et al. (2010) stated the joint effects of a number of job resources such as access to information, support from co-workers, supervisors and organization also create some significant positive relationships with work engagement.

Then, the relationship between sub dimensions of organizational culture and work engagement were analyzed. The result revealed that variable organizational glue, sub dimension of organizational culture was significantly and positively related

with work engagement dimension dedication ($r=.653$, $p< .01$) and absorption ($r = .257$, $p< .01$), but relationship with vigor was not significant. It means that when there is a culture with glue that hold employee each other and helps the employee to stick with the organization, the employees are dedicated as well as absorbed to the work that they are doing.

When the sub dimension of organizational culture- organizational leadership was correlated with dedication, a significant positive correlation ($r=.425$, $p< .01$) was observed which suggests that when there is a good leaders in the organization, the employees will be dedicated in their work, may be because of the motivation given by leaders.

The other dimension, organizational mission was also found to be significantly correlated with dedication ($r=.577$, $p< .01$) and absorption ($r = .122$, $p< .01$). This positive correlation suggests that when the employees were well informed about the mission of the organization, they exert dedication and absorption in their work.

Similar result was observed for organizational group, where dedication ($r=.671$, $p< .01$) and absorption ($r = .141$, $p< .01$) resulted in a significant positive correlation with organizational group. This result implies that when there exist a good group (cohesive group) in the organization to work together, the employee feel absorption and dedication on their work.

The result also revealed a positive relationship for organizational adaptability with dedication ($r = .279$, $p< .01$) and absorption ($r = .274$, $p< .01$). The significant correlation indicate that organizational culture with adaptable climate always tend to create dedication and absorption in employees towards the work.

In the case of organizational autonomy, a positive correlation was found with dedication ($r = .440, p < .01$), absorption ($r = .332, p < .01$), and vigor ($r = .142, .01$). The result suggests that wherever, employees enjoy freedom at work; they are fully engaged in their work.

The result of the correlational analysis between dimensions of organizational culture and dimensions of work engagement suggests that, there is significant relationship between the selected dimensions. The study of Schaufeli and Bakker (2004) support the relationship between the dimensions of organizational culture and work engagement. In their study, they found a positive correlation between components of organizational culture such as performance feedback, social support, and supervisory coaching with work engagement dimensions such as vigor, dedication and absorption.

The relationship between Organizational Culture and Work Stress

In addition to the relationship of organizational culture with work engagement, the relationship of organizational culture with work stress of employees was also found out. The results revealed that there exists a positive relationship between organizational group- sub dimension of organizational culture with work stress ($r=.287, p < .01$). When the employee have good relationship with the group members, the employee will be more conscious about his work performance and work outcomes, this may be contributed to the positive correlation of work stress with the organizational group.

Except the dimension- organizational group, the other dimensions of organizational culture showed no significant relationship with work stress of the employees. This may strengthened the relationship between organizational culture

(total of six dimensions) and work stress of the employees which showed that, there is no significant relationship between two variables; either creating stress or reducing stress.

Supporting to the above result, Sarath and Manikandan (2016) reported that there was no significant influence of organizational culture on work stress of employees exposing absence of significance difference in work stress dimensions- control, demand, support and role. But several studies have reported that, work stress has a significant relationship with the organizational culture. For example, Pienaar and Rothmann (2003) reported that stress at work place originates from job demands and a lack of job resources which characterize the culture of the organization.

Relationship of Work Stress with Work Engagement

The relationship between work stress and work engagement of the employees were also analyzed and can be seen in table 8. From the table, it can be observed that, work engagement ($r = .231, p < .01$) as well as its dimensions vigor ($r = .250, p < .01$) and dedication ($r = .258, p < .01$) were significantly and positively correlated with work stress of the employees. But many studies reported a negative relationship of work stress with work engagement. Rothmann (*nd*) suggested that stress is significantly and negatively related to work engagement variables- Vigor and Dedication. Some other studies also reported stress will decrease the employee's engagement level (Coetzer & Rothmann, 2007; Koyuncu *et al.*, 2006; Hakanen *et al.*, 2006).

The present study revealed that whenever the employee has work engagement, he or she will experience work stress. It is possible to assume that, the

present work stress may be a reaction to their engagement, as whenever he or she got energized or dedicated towards the job they may be worried about the consequences of the work and also the outcome of the work. This type of stress exists in every individual since optimum level of stress motivates an individual to perform well at work.

The results suggest that an optimum level of stress is needed for an individual to be engaged in their work. Schaufeli and Bakker (2004) also expressed that even when the employees were exposed to stress related factors such as high job demands and working long hours, employees do not show symptoms of disengagement but instead they seem to find pleasure in dealing with these stressors.

Relationship between Organizational Culture and Performance

The relationship between organizational culture and its dimensions and performance and its dimensions revealed a positive relationship of organizational glue with self-rating-absolute ($r = .131, p < .05$), co-worker rating-absolute ($r = .233, p < .01$), co-worker rating-relative ($r = .158, p < .01$) and supervisor rating ($r = .350, p < .01$); positive relationship of organizational leadership with co-worker rating-absolute ($r = .276, p < .01$), co-worker rating-relative ($r = .192, p < .01$) and supervisor rating ($r = .402, p < .01$); positive relationship of organizational mission with supervisor rating ($r = .374, p < .01$); positive relationship of organizational group with self-rating-absolute ($r = .172, p < .01$); and positive relationship of organizational autonomy with co-worker rating-relative ($r = .137, p < .05$) and supervisor rating ($r = .334, p < .01$).

The positive relationship between the above dimensions of organizational culture and performance rating indicates that, the performance of the employee in

the organization is significantly correlated with the dimensions of organizational culture. But, the correlation analysis also found a negative relationship between organizational adaptability and self-rating-relative ($r = -.148, p < .05$), co-worker rating-absolute ($r = -.240, p < .01$) and co-worker rating-relative ($r = -.138, p < .05$).

The correlation between performance (total of five dimensions) and dimensions of organizational culture revealed a positive relationship of performance with organizational glue ($r = .237, p < .01$), organizational leadership ($r = .263, p < .01$) and organizational autonomy ($r = .128, p < .05$). A significant negative relationship was found between performance and organizational adaptability ($r = -.164, p < .01$). When the organizational culture was correlated with performance rating of employees, it was found that organizational culture has a positive relationship with supervisor rating ($r = .332, p < .01$).

Even though, the correlation between dimensions of organizational culture and dimensions of performance produced both positive and negative correlation, the relation between organizational culture (total of different dimensions) and performance (total of different rating) revealed a significant positive correlation between the variables ($r = .121, p < .01$). This significant relationship between organizational culture and performance suggests that performance of the employees has a direct relationship with the organizational culture. It means that when an individual employee feel organizational culture as strong in nature, then the organization can witness a good performance from the employees. Most of the studies in the literature support the above result by suggesting a positive relationship between organizational culture and performance (Lok & Crawford, 2004; Calori & Sarnin, 1991). Some studies exposed the relationship of organizational culture

dimensions such as strategic direction, learning, fair reward, support, teamwork, communication, reward and recognition, and training and development with the performance of the employees (Ginevicius & Vaitkunaite, 2006; Zain *et al.* 2009) But Lahiry (1994) reported a weak relationship between organizational culture and performance of the employees.

Relationship between Work Engagement and Performance

The correlation between work engagement and performance revealed that work engagement dimensions have a significant relationship with certain dimensions of performance. The variable vigor showed a significant positive relationship with self-rating-absolute ($r = .120, p < .05$) and self-rating-relative ($r = .130, p < .01$), but a negative relation was found with co-worker rating-absolute ($r = -.173, p < .01$) and co-worker rating-relative ($r = -.197, p < .01$). In the case of dedication, there was a positive relationship with self-rating-absolute ($r = .227, p < .01$), self-rating-relative ($r = .172, p < .01$) and supervisor rating ($r = .113, p < .05$). The dimension absorption has a positive relationship with self-rating-absolute ($r = .169, p < .01$) but no other performance ratings showed any significant relationships.

When the work engagement correlated with performance (total of different rating), it was found that all the three dimensions (vigor, dedication and absorption) have no significant relationship with the performance of the employees. But when the total score of work engagement and dimensions of performance rating were taken into consideration, the analysis found a positive relationship of work engagement with self-rating-absolute ($r = .234, p < .01$) and with self-rating-relative ($r = .140, p < .05$). But the analysis found a negative relationship between work engagement and co-worker rating-relative ($r = -.138, p < .05$). But Bakker *et al.*

(2004) reported a positive relationship between work engagement and performance rating by colleagues. They reported that, employee with high work engagement rated as high performers by their colleagues. Gorgievski, Moriano and Bakker (2014) stated that work engagement was related positively with the performance of the employees than negative affect.

Even though there was no significant relationship between work engagement and performance, the dimensions of work engagement and dimensions of performance were significantly correlated with each other. It suggests that, besides work engagement, there may be some other factors which are associated with work engagement and play a crucial role in determining the performance of the employees.

Relationship between Work Stress and Performance

Table 8 also shows the relationship of work stress with performance dimension such as co-worker rating-absolute ($r = -.130, p < .05$) and supervisor rating ($r = -.123, p < .05$) were significantly negatively correlated. When the relationship between work stress and performance (total of all the dimensions) taken into consideration, the result revealed a negative relationship ($r = -.116, p < .05$).

The result implies that when the employees feel stress at their work, their performance will come downwards and when the employee feel less stress at the work, their performance will go upwards. Studies in the area of stress and performance suggest a significant negative correlation between job stress and job performances (Ahmed & Ramzan, 2013; Bashir & Ramay, 2010). But some studies also reported that stress of the employees and performance of them are not related.

For example, Manzoor, Awan and Mariam (*nd*), in their study reported that stress of the employees does not have a significant relationship with employee performance.

Predictors of Performance

Both the correlation and regression analysis was used to analysis the relation between two continuous variables. However, regression will help a researcher to find ‘functional dependencies’ between dependent variable and independent variables. Multiple regression analysis produces the finest prediction of a dependent variable from a number of independent variables (Hair, 2006). Here, the investigator has performed multiple regression analysis to know the joint effect (overall fit) as well as the relative contribution of organizational culture, work engagement and work stress in determining the performance of the industrial employees in Kerala.

In the present regression analysis, investigator has entered organizational glue, organizational leadership, organizational mission, organizational group, organizational adaptability, organizational autonomy vigor, dedication, absorption and work stress as independent variables which predict the variance in the dependent variable performance. The results of the regression analysis are presented in two separate tables (Table 9 & 10).

Table 9 shows the R , R^2 , adjusted R^2 and the standard error of the estimate (model summary), which can be used to determine how well a regression model fits the data. The table also shows F-ratio (statistical significance) which is used to find whether the overall regression model is a good fit for the data.

Table 9
Model summary and statistical significance of overall regression

R = .568				
R Square = .323				
Adjusted R Square = .299				
Std. Error of the Estimate = .7213				
Model	Sum of Squares	df	Mean Square	F
Regression	72.12	10	7.21	
Residual	151.41	291	0.52	13.86**
Total	223.53	301		

**p< .01

From table 9, it can be seen that the estimated R value (multiple correlation coefficients) was found to be 0.568, which indicate a good level of prediction. The "R Square" (coefficient of determination) was found to be 0.323 which means that, 32.3% of the variance in the performances was accounted by the linear combination of organizational glue, organizational leadership, organizational mission, organizational group, organizational adaptability, organizational autonomy, vigor, dedication, absorption and work stress.

The table also shows the statistical significance of the data. The calculated 'F' value (F= 13.86, p<.01) suggests that, the selected independent variables significantly predict the performance of employees. Thus, the overall regression model is a good fit for the data. Supporting to the present result, various studies related with work setting also found similar results, which showed the role of work engagement, organizational culture and work stress in predicting the performance of the employees as well as in predicting the factors which influence the performance

of employees (Halbesleben, 2010; Ahmed & Ramzan, 2013; Mone & London, 2010; Paschal & Nizam, 2016).

Table 10 shows the relative contribution of the independent variable under study in predicting the performance of the employees.

Table 10

Relative contributions of the independent variables under study on the performance of employees

Model	Unstandardized Coefficients		Standardized Coefficients	't'
	B	Std. Error	Beta(β)	
Constant	5.763	.404		14.260**
Vigor (V)	-.039	.009	-.232	-4.146**
Dedication (D)	.029	.017	.163	1.782
Absorption (A)	-.016	.008	-.121	-2.007*
Organizational glue (OGL)	.057	.024	.285	2.357*
Organizational leadership (OL)	.107	.023	.490	4.685**
Organizational mission (OM)	-.139	.019	-.892	-7.368**
Organizational group (OGR)	-.004	.010	-.026	-.361
Organizational adaptability (OAD)	-.094	.014	-.425	-6.671**
Organizational autonomy (OAU)	.174	.027	.626	6.473**
Work stress (WS)	.002	.003	.035	.627

* $p < .05$. ** $p < .01$

The 't' value shown in the table (table 10) tells whether or not, an individual variable significantly predicts the dependent variable. Statistically, a 'p' value with .05 or below shown in the table conclude that the coefficients are statistically significant. Therefore, the prediction of vigor ($t=4.146$, $p < .01$), absorption ($t = 2.007$, $p < .05$), organizational glue ($t = 2.357$, $p < .05$), organizational leadership ($t = 4.685$, $p < .01$), organizational mission ($t = 7.368$, $p < .01$), organizational adaptability

($t = 6.672$, $p < .01$) and organizational autonomy ($t = 6.473$, $p < .01$) found to be significant predictor of performance of the employees. Even though, other independent variables also predict the performance of the employee, but not in a significant way.

The unstandardized coefficients in the table (table 10) indicate how much the dependent variable varies with an independent variable when all other independent variables in the model are held constant. The table suggests that, for every unit changes in the vigor, absorption, organizational glue, organizational leadership, organizational mission, organizational adaptability and organizational autonomy leads to certain degrees of predictability. The general form of the equation to predict the performance of the employees derived from the regression analysis is -

$$\text{PERFORMANCE} = 5.763(\text{constant}) + (-.039*V) + (-.016*A) + (.057*OGL) \\ + (.107* OL) + (-.139* OM) + (-.094*OAD) + (.174*OAU)$$

(Where V=Vigor, A=Absorption, OGL=Organizational glue, OL=Organizational leadership, OM=Organizational mission, OAD=Organizational adaptability, and OAU= Organizational autonomy)

A positive regression weight indicate that, an increase in every unit of independent variable will be accounted for an increase in performance of participants and the negative regression weights indicate that, an increase in independent variable will be accounted for a decrease in the performance of employees.

The regression analysis suggests that, for every unit changes in the perception of organizational glue, organizational leadership and organizational autonomy, the performance of the participant increase by .029, .057, .107, and .174 units respectively. The analysis also suggests that, for every unit change in vigor,

absorption, organizational mission and organizational adaptability, the performance of the employee decrease by .039, .016, .139, and .094 units respectively.

Regarding the work engagement of the employee, when the employees have high vigor in their work and are absorbed to their work, the employee may perform low in the organization. But, it was also found that, the dedication level of the employee does not significantly predicting the performance of them. When the dimensions of organizational culture taken into account, the high performance of the employee was predicted -when the employee perceive the organizational; glue as good enough to develop the cohesiveness in the organization, when the employee perceive their leaders are supportive; and when the employee feel they have enough freedom in the organization. But a low performance of the employee predicted when they know more about organizational mission and when they feel that they are adaptable to any changes in their organization. It was also found that; organizational culture dimension- organizational group does not significantly predict the performance of the employee in the work setting. When the work stress was considered for prediction of performance in the analysis and found that, work stress doesn't have a significant role in predicting the performance of the employee independently.

Influence of Experience, Organizational Culture, Work Engagement and Work Stress on Performance of the Employees

The productivity/effectiveness of every organization is determined by the performance of each individual employee in the organization. Performance of the employees is related with all the activities of the employees in the organization. There are different factors which influence the performance of the employees. This

section discusses the main and interaction effect of organizational culture, work engagement, work stress and experience on performance of employees.

To know the main and interaction effect of organizational culture, work engagement, work stress and experience in determining the performance of the industrial employees, separate ANOVA was done on performance of the employees. Since the variables organizational culture, work engagement, work stress and experience were measured in interval scale, they were categorized in to different categories according to certain statistical principles and the procedures adopted were described.

Classification of organizational culture

The total score in organizational culture is the way to know the perceptions of employees towards their organizational culture. Investigator has decided to categorize the organizational culture into two groups as weak culture and strong culture. For this the median score of the variable organization culture was calculated (Median = 128.37) and the participants were categorized into two - those who scored above the median were labeled as strong culture and those who scored below the median as weak culture and the details of classification is presented in table 11.

Table 11

Number and percentage of participants in each group of organizational culture

Group	Frequency	Percentage
Weak culture	154	50.99%
Strong culture	148	49.01%
Total	302	100%

From table 11, it can be seen that the classification of the variable organizational culture as weak culture and strong culture. The table shows that there were 148 (49.01%) participants perceive their organizations culture as strong and 154 (50.99%) participants perceive their organizations culture as weak. Perception of strong culture is happens when the employees feel, their organization incorporates the same sort of beliefs and values and a weak culture is supposed to be there in an organization when the employees are loosely connected each other.

Classification of Work Engagement and Work Stress

As in the case of organizational culture, the variable work engagement and work stress were also classified into three groups as low, average and high based on the principle of $\pm \frac{1}{2}$ SD of each variable. The mean score of work engagement (Mean = 70.14) and standard deviation (SD = 11.99) were calculated and classified them into three groups. The details of the classification are given in table 12. Similarly the mean and standard deviation of the variable work stress (Mean = 63.41, SD = 14.42) was also classified and the details are presented in table 12.

Table 12

Number and percentage of participants in each category for work engagement and work stress

Group	Work Engagement		Work Stress	
	N	Percentage	N	Percentage
Low	96	31.79%	89	29.47%
Average	115	38.08%	98	32.45%
High	91	30.13%	115	38.08%
Total	302	100%	302	100%

From table 12, it can be seen that, work engagement and work stress is categorized into three separate groups. For work engagement, the table shows that, 66 (31.79) participants come under low group where the employees has a low engagement towards the work, 115 (38.08%) participants under average group and 91 (30.13%) participants under high work engagement where the employees has a high engagement towards the work. For the work stress 89 (29.47%) participants comes under low group where the employee experiences low stress at work place, 98 (32.45%) participants under average group and 115 (38.08%) participants under high group where the employee experience a high stress in the work place.

Classification of Experience

Experience of an employee in the job (present and past) is important in determining many work related behavior. Here the investigator has collected information regarding the work experience of the employee in the present job. There were employees with an experience of 1 year to 37 years of experience participated in the study. For understanding the role and impact of work experience on performance, they were classified into 3 groups with an experience of 10 or below as group I, in between 11 to 20 years group II, and employees with an experience of 21 to 37 years of in the present job as group III. The detail of classification is given in table 13.

Table 13

Number and percentage of participants in each category for experience

Group	Frequency	Percentage
Group I (1 to 10 years)	96	31.79%
Group II (11 to 20 years)	115	38.08%
Group III (21 to 37 years)	91	30.13%
Total	302	100%

Table 13 shows that, among 302 participants, 96 (31.79%) were belongs to group I where the experience of participant was in between 1 to10 years, 115 (38.08%) were come under group II, and their experience as in between 11 to 20 years, and 91 (30.13%) were labeled as group III where the experience of the participants was in between 21 to 37 years.

The performance of the participants was measured with the performance rating done by the participant -self-rating (absolute & relative), co-worker (absolute & relative) and by the supervisor (supervisor rating). Average of all the rating was considered to be the performance of the participants. To know the effect of categorical variables such as work experience, organizational culture, work engagement and work stress on performance (Self- Rating- Absolute, Self-Rating-Relative, Co-worker Rating-Absolute, Co-worker Rating-Relative and Supervisor Rating) of the employees, three-way ANOVA with different combination was done and the results are presented in separate tables.

The main and interaction effect of experience, work engagement and organizational culture on Self- Rating - Absolute, Self-Rating- Relative, Co-worker Rating- Absolute, Co-worker Rating- Relative and Supervisor rating were calculated

using three-way ANOVA and discussed. The tables and figures of the analysis give an overall all evaluation about different ratings about the performance of the participants. Then the three-way ANOVA was computed on performance (average of five ratings) by experience, work engagement and organizational culture.

Influence of Experience, Work engagement and Organizational Culture on Self-Rating- Absolute (3x3x2)

Self-rating-absolute is the rating of employee about the performance of himself/herself. To know whether there exist any difference in ‘self-rating-absolute’ by experience, organizational culture and work engagement, three-way ANOVA was carried out and the results are presented in the following tables.

Table 14

Summary of 3-way ANOVA of Self-Rating- Absolute by Experience, Work Engagement and Organizational Culture (3 x 3 x 2)

Source of variance	Sum of Squares	Df	Mean Square	F
Experience	11.15	2	5.58	5.87**
Work Engagement	6.13	2	3.06	3.23*
Organizational Culture	2.69	1	2.69	2.83
Experience * Work engagement	36.65	4	9.16	9.65**
Experience * Organizational Culture	0.18	2	0.09	0.10
Work Engagement * Organizational Culture	2.55	2	1.27	1.34
Experience * Work Engagement * Organizational Culture	0.21	1	0.21	0.22
Error	272.53	287	0.95	
Total	10396.00	302		

*p< .05. **p< .01.

Table 14 shows the result of three-way ANOVA of self-rating-absolute by experience, work engagement and organizational culture. No significant three-way interaction of experience, work engagement and organizational culture on self-rating-absolute was observed from the analysis. It suggests that, when the different levels of experience, work engagement and organizational culture taken into consideration, the interaction between these variables has no influence on the self-rating-Absolute of the participants.

When the two-way interaction was considered on self-rating-absolute no significant two-way interaction effect was found, between experience and organizational culture; and work engagement and organizational culture. But a two-way interaction effect was found between experience and work engagement ($F=9.65$, $p< .01$). The interaction effect suggests that, when the different levels of work experience and different levels of work engagement interact, the interaction creates a significant difference in the evaluation of the participant about their performance (self-rating-absolute).

Significant main effect of experience ($F= 5.87$, $p< .01$) and work engagement ($F = 3.23$, $p< .05$) on self-rating-absolute was observed. Supporting to the present result, various studies conducted in organizational field also reported the role of experience (Shaffril & Uli, 2010; Hassan, Olufemi & Ogunkoya, 2014) and work engagement (Anitha, 2014; Gorgievski, Moriano, & Bakker, 2014) in determining the performance of employees working in different organizations.

The result suggests that, experience and work engagement of the participants do have an important role in determining the evaluation of their performance (self-

rating-absolute) independently. In short, these variables have a significant main effect on the performance of the participants.

To know more about the two-way interaction effect of experience with work engagement on self-rating- absolute, the cell mean of the variables were calculated and presented in the table 15.

Table 15

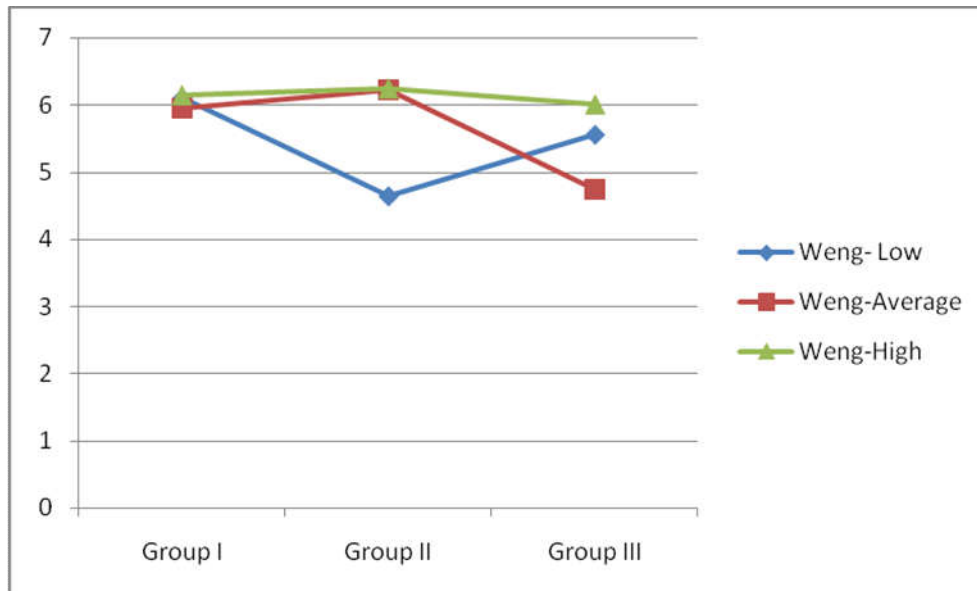
Mean, Sd, and N of Self-Rating- Absolute by Experience and Work Engagement

Variable		Work Engagement			Total	
Experience	Group	Low	Average	High		
	Group I (1-10 years)		6.10	5.94	6.14	6.05
			0.30	0.67	0.83	0.63
			31	32	29	92
	Group II (11-20 years)		4.64	6.22	6.24	5.83
		1.19	0.85	0.72	1.13	
		33	49	50	132	
Group III (21-37 years)		5.56	4.74	6.00	5.27	
		0.95	1.86	.01	1.45	
		32	34	12	78	
Total		5.42	5.70	6.18	5.75	
		1.083	1.357	0.71	1.14	
		96	115	91	302	

(Note: Cell order= Mean, SD and n)

From table 15, which shows the cell means of self-rating- absolute by work engagement and experience, it is observed that the cell mean of employees with high work engagement and having a work experience of 11 to 20 years (Group II) showed high mean score (Mean = 6.24) compared to other cell means. The table also showed that, when the mean score for the participants with the same experience (11 to 20 years) and low work engagement shows a low mean score (Mean = 4.64) compared to other cell means. The result suggests that, work engagement of the participants with their experience at work has a significant role in determining the self-rating of the participants about their performance in the organization.

To know the exact place where the experience and work engagement interact each other, a graph was drawn based on the cell mean scores and presented in the figure 1.



(Note: Weng=work engagement, Group I =Experience 1-10 years, Group ii =Experience 11 to 20 years, Group III = Experience 21 to 37 years)

Figure 1: Interaction graph of Self-Rating –Absolute by Experience and Work Engagement

The figure 1 shows the high performance rating (self-rating-absolute) with high work engagement irrespective of the experience level. It shows the importance of high work engagement in participants, from new comer (group I) to veteran employee (group II). Various scholars also observed the importance of work engagement in determining the performance of employees. Crawford, LePine, and Rich (2010), stated that, when the employees are engaged in the work, they will find their work to be easier and interesting. Gorgievski, Moriano, and Bakker (2014) reported a positive relationship between work engagement and performance which

suggests that, when an employee has a high work engagement, their performance in the organization also becomes high.

In addition to the importance of work engagement, the figure also revealed the importance of work experience of the employee in the organization. The long years' of experience of the employees in the organization may have developed new skills, attitudes etc in the employee, which may be influenced the performance of employees. This may be the reason even the low work engaged employee rated their performance as better when they met an experience more than 30 years and above (Group III). Supporting to this, Shaffril and Uli (2010) reported that, when the employee has a good experience in the organization, the employee will perform well.

Influence of Experience, Work engagement and Organizational Culture on Self-Rating- Relative (3x3x2)

Self-rating-relative is the rating of employee about the performance of him/her by comparing their performance with the performance of co-workers in the organization. To know whether there is any significant difference in self-rating-relative by experience, work engagement and organizational culture, three-way ANOVA was executed and the results are presented in table 16.

Table 16

Summary of 3-way ANOVA of Self-Rating- Relative by Experience, Work Engagement and Organizational Culture (3 x 3 x 2)

Source of variance	Sum of Squares	Df	Mean Square	F
Experience	22.73	2	11.37	10.44**
Work Engagement	1.08	2	.54	0.50
Organizational Culture	1.74	1	1.74	1.60
Experience * Work Engagement	43.56	4	10.89	10.00**
Experience * Organizational Culture	2.46	2	1.23	1.13
Work Engagement * Organizational Culture	8.33	2	4.17	3.83*
Experience * Work Engagement * Organizational Culture	0.14	1	0.14	0.13
Error	312.44	287	1.09	
Total	10172.00	302		

* $p < .05$. ** $p < .01$.

From table 16, it can be seen that, the three-way interaction does not showed any significant interaction effect on self-rating- relative. No significant interaction effect suggests that when the different levels of experience, work engagement and organizational culture taken together, it does not create a significant effect in the performance of employees while addressing the self-rating-relative.

The table also shows that, there was no significant two-way interaction of experience and organizational culture on self-rating-relative. But a significant two-way interaction was observed on self-rating-relative when the experience and work engagement ($F = 10.00$, $p < .01$) were considered; similarly work engagement and organizational culture interact together ($F = 3.83$, $p < .05$). The interaction effect revealed that when the work engagement interacts with experience and

organizational culture, the interaction brings a significant difference in the evaluation of participants (self-rating-relative) about their performance.

In addition to interaction effects, the analysis also revealed the significant main effect of experience on self-rating-relative ($F = 10.44, p < .01$). The main effect of experience on self-rating-relative suggests that, the experience of the employee in the organization do have a significant role in deciding the performance of the employees. Several studies also exposed the role of experience in determining the performance of the employee in the organization (Manikandan, 2010; Hassan, Olufemi, & Ogunkoya, 2014).

In summary the ANOVA revealed that there is a significant main effect of experience, and two-way interaction effect of work engagement and experience; work engagement and organizational culture on performance (self-rating-relative) of the participants. Even though, work engagement and organizational culture do not have a main effect, the significant difference in performance (self-rating-relative) was found when the different levels of the variables interacted. To get more clarity about the two-way interaction effect of experiences with work engagement and organizational culture with work engagement, cell mean of self-rating- relative were calculated and presented in separate tables.

Table 17

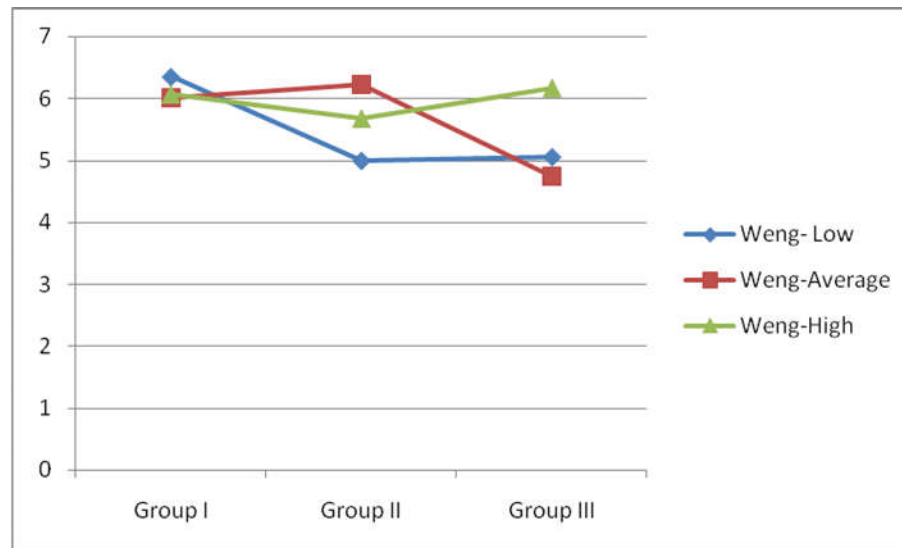
Mean, Sd, and N of Self-Rating- Relative by Experience and Work Engagement

Variable		Work Engagement			Total
Experience	Group	Low	Average	High	
	Experience	Group I (1-10 years)	6.00 0.71 31	6.00 0.72 32	6.07 0.84 29
Group II (11-20 years)		5.00 1.20 33	6.22 0.85 49	5.68 1.08 50	5.71 1.13 132
Group III (21-37 years)		5.06 0.80 32	4.74 1.86 34	6.17 .39 12	5.09 1.42 78
Total		5.46 1.11 96	5.72 1.37 115	5.87 0.96 91	5.68 1.18 302

(Note: Cell order= Mean, SD and n)

From table 17, it can be seen that, the cell mean of the participants with average work engagement and an experience of 11 to 20 years (Group II), show high mean score (Mean = 6.22) compared to other cell means on self-rating- relative. The lowest mean score (Mean = 4.74) in the self-rating-relative was observed in the combination of average work engagement and experience of 20 years and above (Group III) compared to other cell means observed. The result of cell means indicate that, the interaction of different levels of work engagement and different levels of work experience do produce difference in the performance of the participants (self-rating-relative).

To get more clarity regarding the interaction effect a graph was drawn on the basis of calculated cell means of self-rating-relative and presented as figure 2.



(Note: Weng=work engagement, Group I =Experience 1-10 years, Group ii =Experience 11 to 20 years, Group III = Experience 21 to 37 years)

Figure 2: Interaction graph of Self-Rating –Relative by Experience and Work Engagement

The figure 2 shows the performance mean score of the employee based in self-rating- relative. The figure states that, all the participants performed well at the beginning of their career (Group I) irrespective of the levels of work engagement (low, average and high group). Bigliardi, Dormio, Galati and Schiuma (2012) stated that when an employee new to the organization they will show a good performance in the organization. But when the experience of the employees in the work was increased (Group II & Group III), it was observed that the performance of them significantly differ and level of experience interact with various level of work engagement. Employees with high work engagement showed a high rating of performance when they had more than 20 years of experience in the job (Group III). It underlines the importance of having high work engagement in the employees in our organizations. Various studies have reported that, work engagement is a positive variable which is positively related with the behaviors which help the organization to perform better in a competing work environment (Harter, Schmidt & Hayes,

2002; Sonnentag, 2003; Bakker & Demerouti, 2008, Munoz, Vergel, Demerouti & Bakker, 2014).

To know more about the interaction between organizational culture and work engagement, the cell means of self-rating-relative was calculated and presented in the table 18.

Table 18

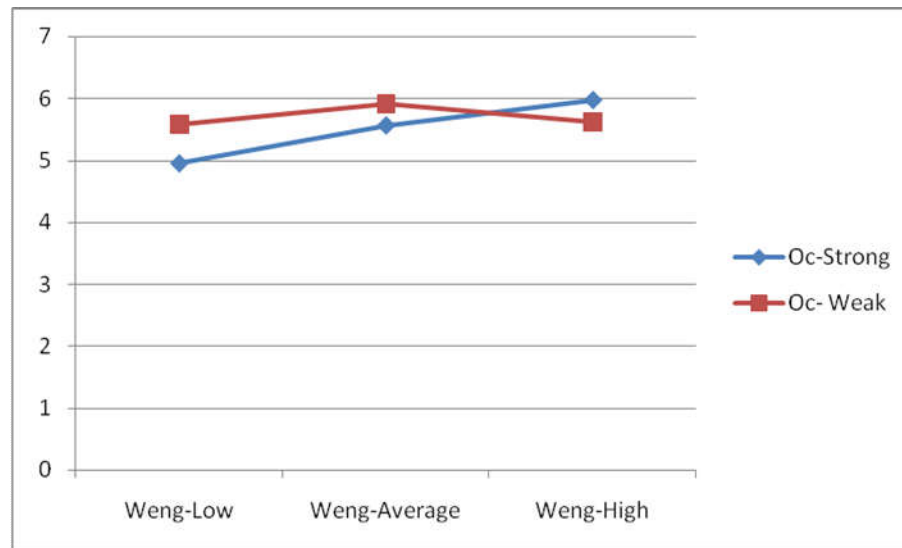
Mean, Sd, and N of Self-Rating- Relative by Organizational Culture and Work Engagement

Variable		Work Engagement			Total
Organizational culture	Group	Low	Average	High	
	Organizational culture	Weak	5.58	5.92	5.62
1.11			0.87	1.17	1.05
77			51	26	154
Strong		4.95	5.56	5.97	5.66
		1.03	1.65	.85	1.31
		19	64	65	148
Total		5.46	5.72	5.87	5.68
		1.11	1.37	0.96	5.68
		96	115	91	302

z (Note: Cell order= Mean, SD and N)

From table 18, it can be seen that when comparing the mean scores on self-rating-relative, cell means of work engagement and strong organizational culture scored high mean score (Mean = 5.97). At the same time participants with low work engagement and strong organizational culture (Mean = 4.95) showed low mean score compared to other cell means. The results revealed that, when the different levels of work engagement and organizational culture taken together these variables interact in this stage and brings a significant difference in the evaluation of the participants about their performance (self-rating-relative) in the organization.

To get more clarity about the interaction of organizational culture with work engagement on self-rating- relative, an interaction graph was drawn and presented in the figure 3.



(Note: Weng= Work Engagement, Oc= Organizational Culture)

Figure 3: Interaction graph of Self-Rating-Relative by Organizational Culture and Work engagement

The figure 3 shows that the performance rating (self-rating-relative) was high when the high work engagement interacted with strong organizational culture. That is, the result revealed that even though low work engaged and average work engaged participants showed lesser performance in a strong organizational culture than weak organizational culture, participants with high work engagement showed higher performance in strong organizational culture than weak organizational culture. The results suggest the importance of having high engagement and strong organizational culture in the organization. As work engagement can offer organizations with competitive advantage (Bakker, Schaufeli, Leiter, & Taris, 2008) organizational leaders may consider different ways of increasing work engagement among employees.

The high performance rating of low work engaged participants with weak organizational culture was another finding observed in the analysis which raise the curiosity of any person. There may be some other factors like poor job satisfaction,

conflict between higher level of management etc., which influence the performance of the low engaged participants in a weak organizational culture.

Influence of Experience, Work engagement and Organizational Culture on Co-worker Rating- Absolute (3x3x2)

Co-worker rating-absolute is the performance rating, done by a co-worker about the performance of the participant in the organization. To know whether there exists any significant difference in the co-worker's evaluation about the performance of the participants when the experience, work engagement and organizational culture taken together, three-way ANOVA was calculated and the results are presented in the table 19.

Table 19

Summary of 3-way ANOVA of Co-worker Rating- Absolute by Experience, Work engagement and Organizational Culture (3 x 3 x 2)

Source of variance	Sum of Squares	df	Mean Square	F
Experience	16.64	2	8.32	7.05**
Work Engagement	9.68	2	4.84	4.10*
Organizational Culture	11.75	1	11.75	9.97**
Experience * Work Engagement	11.05	4	2.76	2.34*
Experience * Organizational Culture	9.17	2	4.58	3.89*
Work Engagement * Organizational Culture	37.40	2	18.70	15.86**
Experience * Work Engagement * Organizational Culture	12.21	1	12.21	10.35*
Error	338.47	287	1.18	
Total	9558.00	302		

*p< .05. **p< .01.

Table 19 shows the three-way interaction effect of experience, work engagement and organizational culture on co-worker rating-absolute. When the experience, work engagement and organizational culture taken into consideration, a

significant three-way interaction ($F = 10.35$, $p < .05$) was observed. The significant interaction effect suggests that, when different levels of experience, work engagement and organizational culture taken together, its interaction create a significant influence on the performance of the participants.

Besides the three-way interaction a significant two-way interaction between experience and work engagement ($F = 2.34$, $p < .05$), experience and organizational culture ($F = 3.89$, $p < .05$), and work engagement and organizational culture ($F = 15.86$, $p < .01$) on co-worker-rating-absolute was found. These significant interactions suggest that, when the different levels of experience, work engagement and organizational culture interact with each other a significant difference in the performance (co-worker-rating-absolute) can be seen among the employees.

The analysis also revealed a significant main effect in the performance (co-worker-rating- absolute) of employees by experience ($F = 7.05$, $p < .01$), work engagement ($F = 4.10$, $p < .05$) and organizational culture ($F = 9.97$, $p < .01$). Some other researchers were also reported the influence of experience (Hassan, Olufemi, & Ogunkoya, 2014), work engagement (Bakker, Schaufeli, Leiter, & Taris, 2008; Bashir, 2010) and organizational culture (Glomseth, Gottschalk, & Solli-Saether, 2007; Uddin, Luva, & Hossian, 2013) in different organizations.

In short the analysis showed that all the variables under study have a significant main as well as interaction effect on the performance (co-worker-rating-absolute) of the participants. The result suggests that the performance of the employee in our organization may differ based on the extent of experience, work engagement and organizational culture they have. To know more about interaction between experience, work engagement and organizational culture on performance

rating done by the co-worker about the participants (co-worker-rating-absolute), the cell mean were Calculated for each interaction and presented in separate tables.

Table 20 shows the cell mean for co-worker-rating-absolute by experience, work engagement and organizational culture.

Table 20

Mean, Sd, and N of Co-worker Rating- Absolute by Experience, Work Engagement and Organizational Culture

Experience	Work engagement	Organizational culture		Total
		Weak	Strong	
Group I (1-10 years)	Low	5.96 (0.19, 27)	7.00 (0.01, 4)	6.10 (0.40, 31)
	Average	5.36 (0.66, 22)	6.40 (0.51, 10)	5.69 (0.78, 32)
	High	-	6.21 (0.41, 29)	6.21 (0.41, 29)
	Total	5.69 (0.55, 49)	6.33 (0.47, 43)	5.99 (0.60, 92)
Group II (11-20 years)	Low	4.89 (0.57, 19)	6.14 (1.03, 14)	5.42 (1.01, 33)
	Average	6.00 (0.96, 29)	4.45 (2.44, 20)	5.37 (1.87, 49)
	High	4.50 (0.71, 26)	6.08 (0.65, 24)	5.26 (1.05, 50)
	Total	5.19 (1.03, 74)	5.53 (1.74, 58)	5.34 (1.39, 132)
Group III (21-37 years)	Low	5.52 (0.93, 31)	7.00 (1)	5.56 (0.95, 32)
	Average	-	4.71 (1.85, 34)	4.71 (1.85, 34)
	High	-	5.17 (0.39, 12)	5.17 (0.39, 12)
	Total	5.52 (.93, 31)	4.87 (1.62, 47)	5.13 (1.42, 78)
Total	Low	5.52 (0.77, 77)	6.37 (0.95, 19)	5.69 (0.87, 96)
	Average	5.73 (0.90, 51)	4.89 (2.02, 64)	5.26 (1.66, 115)
	High	4.50 (0.71, 26)	5.97 (0.64, 65)	5.55 (0.93, 91)
	Total	5.42 (0.90, 154)	5.55 (1.54, 148)	5.48 (1.26, 302)

(Note: Cell order= Mean, SD and n)

Table 20 shows the cell means of co-worker-rating-absolute when different groups of experience, work engagement and organizational culture interacted. Among the cell means it is observed that two combinations organizational culture, work engagement and experience scored high mean score (Mean = 7.00) compared to other cell means. First combination which showed high means score was the cell mean of strong organizational culture, low work engagement and group with 1-10 years of experience (Group I). The second combination was the interaction of strong organizational culture, low work engagement and 21-37 years of experience (Group III). At the same time, a low mean score (Mean = 4.45) was observed with the interaction of strong organizational culture, average work engagement and 11-20 years of experience (Group II).

From this table, it is observed that both high and low mean score was observed with strong organizational culture. High mean score and low mean score was the result of the interaction of organizational culture with work engagement and experience. Different studies also suggested the importance of strong organizational culture to have better performance. According to Deal and Kennedy (1982) employees in strong organizational culture incorporate the same sort of beliefs and values related with the organization. When an employee incorporates same sort of beliefs and values associated with the organization, the employee will work to achieve the organizational goals. Karlsen (2011) stated that, the organizations with culture where employees' goals are aligned to the organization's goals are often thought of as successful culture. Supporting to this, various studies reported that organizational culture has significant effect on the performance or productivity of employees in the organization (Biswas, 2009; Ojo, 2009). Along with previous

studies, the above result also suggests to have a culture (strong organizational culture) which supports the employee to reach his maximum performance.

Based on the two-way interaction between experience and work engagement on co-worker rating absolute, cell means were found for the interaction between different levels of experience and work engagement. The calculated cell means are presented in the table 21.

Table 21

Mean, Sd, and N Of Co-worker Rating- Absolute by Experience and Work Engagement

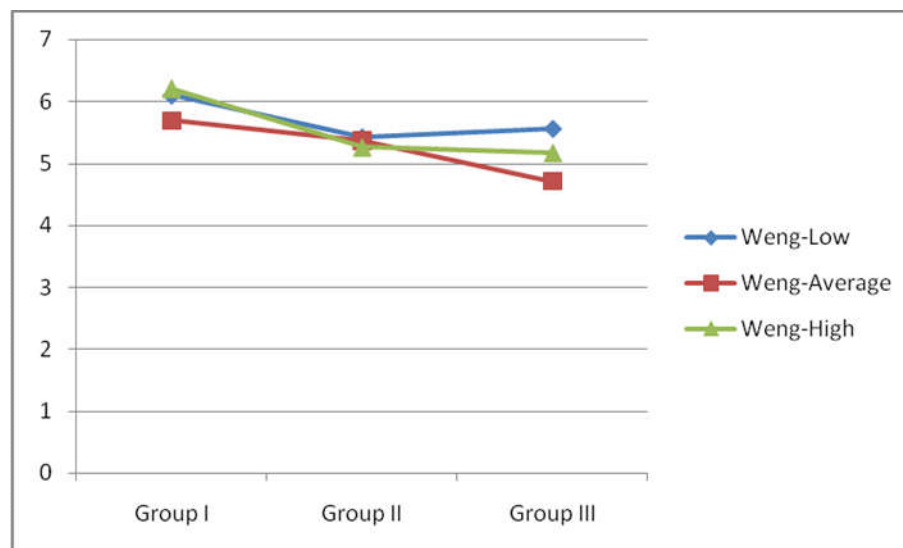
Variable		Work Engagement			Total
Group		Low	Average	High	
Experience	Group I (1-10 years)	6.10 0.40 31	5.69 0.78 32	6.21 0.41 29	5.99 0.60 92
	Group II (11-20 years)	5.42 1.00 33	5.37 1.87 49	5.26 1.05 50	5.34 1.39 132
	Group III (21-37 years)	5.56 0.95 32	4.71 1.85 34	5.17 0.39 12	5.13 1.42 78
Total		5.69 0.87 96	5.26 1.66 115	5.55 0.93 91	5.48 1.26 302

(Note: Cell order= Mean, SD and n)

Table 21 shows the cell means of co-worker-rating-absolute when different groups of experience and work engagement interacted. Among the cell means scores of co-worker rating-absolute, high mean score (Mean = 6.21) was observed with the interaction of high work engagement with the group of employees with 1-10 years of experience (Group I). However, the mean score was observed (Mean = 4.71) when average work engagement interacted with the group of employees with more than 20

years of experience (Group III) interacted. The cell means of interaction between different levels suggests that the performance rating done by co-workers (co-worker-rating-absolute) is significantly differs when different levels of experience and work engagement interact each other.

To know more about the interaction between experience and work engagement the cell means of co-worker-rating-absolute on difference levels of experience and work engagement were graphically plotted in the following figure.



(Note: Weng=work engagement, Group I =Experience 1-10 years, Group II =Experience 11 to 20 years, Group III = Experience 21 to 37 years)

Figure 4: Interaction graph of Co-worker Rating- Absolute by Experience and Work Engagement

Figure 4 suggests that during the first years of life as an employee in the organization, participants show their best performance with different levels of work engagement. As a new comer to the organization, the employees have to prove he/she was capable of taking the responsibilities in the organization. This may be reason even low engaged participants rated their performance as high. Based on the

meta analysis, Ng and Feldman (2010) reported that the organizational tenure-performance relationship was stronger for younger workers, but the strength of the association decreases as organizational tenure increases. Supporting to this figure 4 also shows that an increase in the work experience was marked by a decrease in the performance of the employees. When the employees had an experience more than 20 years, it is observed that low engaged employees are performing well than average and high engaged employees. For the participants with low engagement, they have to prove that they are worth for the organization even at last years of life in the organization. It may have reflected in the activities of the low engaged employees and influenced the co-worker in performance rating.

Based on the two-way interaction of experience and organizational culture, the cell means of co-worker rating-absolute were calculated and presented in the table 22.

Table 22

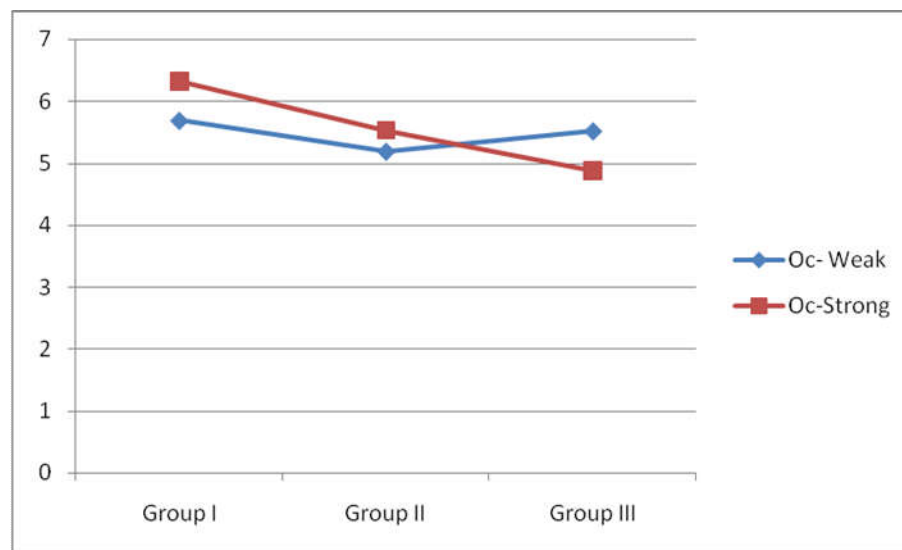
Mean, Sd, and N of co-worker rating- absolute by Experience and Organizational Culture

Variable		Experience			Total
Organizational culture	Group	Group I (1-10 years)	Group II (11-20 years)	Group III (21-37 years)	
	Weak	5.69 0.55 49	5.19 1.03 74	5.52 0.93 31	5.42 0.90 154
	Strong	6.33 0.47 43	5.53 1.74 58	4.87 1.62 47	5.55 1.54 148
Total		5.99 0.60 92	5.34 1.39 132	5.13 1.42 78	5.48 1.26 302

(Note: Cell order= Mean, SD and n)

The cell means presented in table 22 shows the cell means on co-worker rating-absolute shows a high mean score (Mean = 6.33) when strong organizational culture interacted with the group of 1-10 years of experience (Group I). A low means score for co-worker rating-absolute was observed with strong organizational culture and group of employees with more than 20 years of experience (Group III). From the cell mean table, it was observed that both the high and low rating on co-worker rating absolute belong to the participants who feel their organizations culture as strong, with different level of experience. It suggests that the interaction of experience and organizational culture have a significant role in determining the performance (co-worker rating-absolute) of the employees in an organization.

To get more clarity about the interaction effect the cell means of co-worker rating- absolute based on the interaction between organizational culture and experience were graphically plotted and given as figure 5



(Note: Oc = Organizational culture, Group I = Experience 1-10 years, Group II = Experience 11 to 20 years, Group III = Experience 21 to 37 years)

Figure 5: Interaction graph of Co-worker-Rating-Absolute by Organizational culture and experience

Figure 5 revealed a high performance rating (co-worker rating-absolute) of the employees during the first years of an employee in the organization. Supporting to the result Bigliardi, Dormio, Galati and Schiuma (2012) in their study reported that new employees who joined in an organization, may put high effort to participate in the organization which ultimately results in high performance of the employees. This may resulted in high performance of the participants in both strong and weak culture.

When employees had an experience between 1-20 years (Group I & Group II) and had a strong organizational culture they performed better than employees with a weak organizational culture. But a drastic decrease in the performance rating was observed in the strong culture with an experience of 20 years and above (group III). Previous studies also reported that organizations with strong organizational culture are more successful than organizations with weak organizational culture (Sokro, 2012; Uddin, Luva, & Hossian, 2012). But the above figure suggests that the interaction between high experience and strong organizational culture may also result in lower performance.

The significant interaction effect of work engagement and organizational culture on co-worker rating-absolute also motivated the investigator to find out the cell means of the interaction between work engagement and organizational culture. The calculated cell means are presented in the table 23.

Table 23

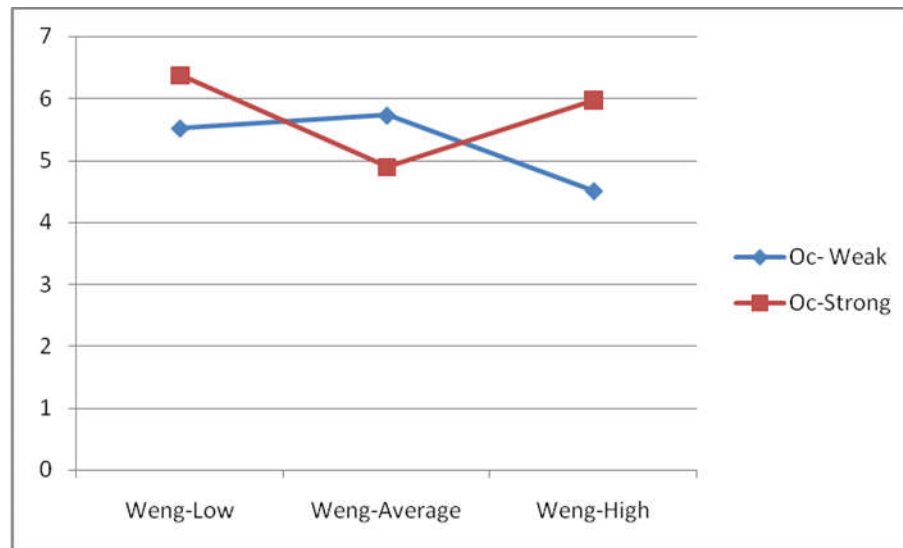
Mean, Sd, and N of Co-worker Rating- Absolute by Work Engagement and Organizational Culture

Variable		Work engagement			Total
Group		Low	Average	High	
Organizational culture	Weak	5.52	5.73	4.50	5.42
		0.77	0.90	0.71	0.90
		77	51	26	154
	Strong	6.37	4.89	5.97	5.55
		0.95	2.02	.64	1.54
		19	64	65	148
Total		5.69	5.26	5.55	5.48
		0.87	1.66	0.93	1.26
		96	155	91	302

(Note: Cell order= Mean, SD and n)

Table 23 shows the cell means of co-worker rating when different groups of work engagement and organizational culture interacted. Among the observed mean scores, a high mean score was observed (Mean = 6.37) in the combination of low work engagement and strong organizational culture comparing to other cell means. At the same time, a low mean score was observed (Mean = 4.50) with weak organizational culture and high work engagement. The calculated cell means observed in co-worker rating-absolute suggests that the performance of the employee differ when different levels of organizational culture and work engagement interact with each other.

To know more about the interaction between organizational culture and work engagement, the calculated cell means for co-worker rating-absolute was graphically plotted and given in figure 6.



(Note: Weng= Work Engagement, Oc= Organizational Culture)

Figure 6: Interaction graph of Co-worker-Rating-Absolute by Organizational culture and work engagement

Figure 6 gives the interaction of work engagement and organizational culture on performance of the participants (co-worker-rating-absolute). From the figure 6, high performance of the employee was observed among participants in strong organizational culture with low and high work engagement. This suggests the importance of having strong organizational culture in the organization. According to Sokro (2012) the culture of the organization plays an important role in the organization related with how people feel about the job and their level of motivation. In the present study, the motivation that got from their strong organizational culture might have been influenced even the low engaged employees to perform well in the organization. But somewhere in between low and high work engagement, the performance of the participants in strong organizational culture comes down.

Even though low work engaged participants in a strong organizational culture maintains a good performance different studies related with work

engagement points out the importance of having high work engagement in any organization (Perrin, 2008; Mokaya & Kipyegon, 2014) for its better performance in our competing business world. Thus, it is important to keep a strong organizational culture with high work engaged employees in the organization to improve the performance of the individual employees as well as the performance of the organization.

Influence of Experience, Work engagement and Organizational Culture on Co-worker Rating- Relative (3x3x2)

The co-worker rating-relative indicates the performance evaluation done by co-workers by comparing it with the performance of other workers in the organization. To know whether there exists significant interaction between experience, work engagement and organizational culture on co-worker rating-relative, three-way ANOVA was performed. The results of the analysis are presented in the table 24.

Table 24

Summary of 3-way ANOVA of Co-worker Rating- Relative by Experience, Work engagement and Organizational Culture (3 x 3 x 2)

Source of variance	Sum of Squares	df	Mean Square	F
Experience	12.83	2	6.41	6.43**
Work engagement	40.21	2	20.10	20.15**
Organizational Culture	21.82	1	21.82	21.87**
Experience * Work engagement	9.27	4	2.32	2.32
Experience * Organizational Culture	3.80	2	1.90	1.90
Work engagement * Organizational Culture	34.42	2	17.21	17.25**
Experience * Work engagement * Organizational Culture	2.51	1	2.51	2.52
Error	286.31	287	0.99	
Total	9440.00	302		

**p< .01.

Table 24 shows the three-way interaction of experience, work engagement and organizational culture on co-worker rating-relative. From table it can be seen that there is no significant three-way interaction among the variables. It suggests that when the different levels of experience, work engagement and organizational culture taken into consideration the variables makes no change in their performance rating.

When the two-way interaction between the experience, work engagement and organizational culture was considered, a significant interaction of work engagement and organizational culture on co-worker rating-relative ($F = 1.25, p < .01$) was observed. But the other two interactions, such as experience with work engagement and experience with organizational culture does not showed a significant interaction effect on co-worker rating-relative. The significant two-way interaction suggests that, the interaction between different levels of work engagement and organizational culture have a significant role in determining the performance (co-worker rating- relative) of the employees.

A significant main effect of experience ($F = 6.43, p < .01$), work engagement ($F = 20.15, p < .01$) and organizational culture ($F = 21.87, p < .01$) was seen in co-worker rating-relative. Supporting to the present result previous studies also revealed that performance of the employees was influenced by the work experience of the employees (Manikandan, 2010), level of engagement (Gorgievski, Moriano, & Bakker, 2014) and nature of organizational culture (Lee & Yu, 2004). While addressing the co-worker rating- relative, the results revealed the importance of work experience, level of work engagement and nature of organizational culture in determining the performance of employees. The results also points the significant

interaction of different levels of work engagement and organizational culture in determining the performance of the employees.

To know more about the two-way interaction between work engagement and organizational culture, the cell means on co-worker rating- relative was calculated and presented in table 25.

Table 25

Mean, Sd, and N Of Co-worker Rating- Relative by Work Engagement and Organizational Culture

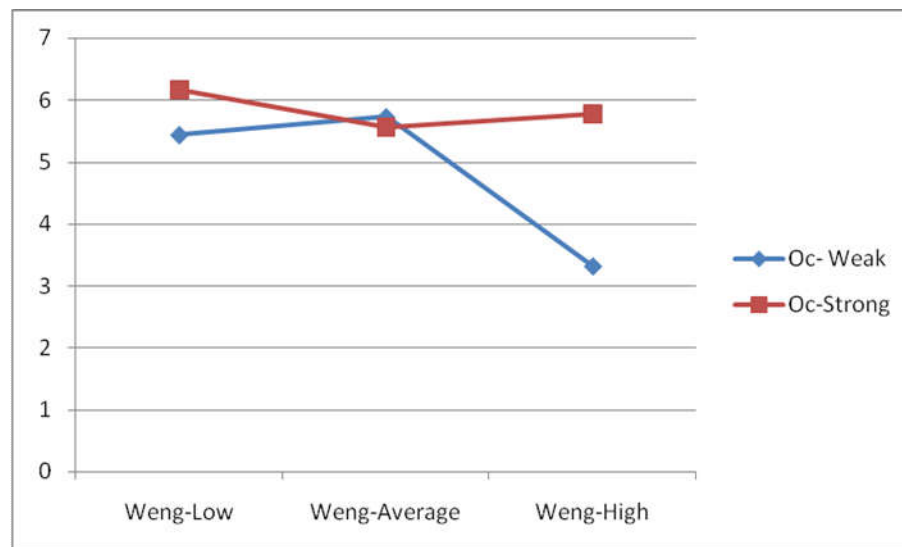
Variable		Work engagement			Total	
Organizational culture	Group	Low	Average	High		
	Weak		5.44	5.73	3.31	5.18
			0.80 77	0.90 51	1.38 26	1.27 154
	Strong		6.16	5.56	5.78	5.74
		0.90 19	1.51 64	0.74 65	1.16 148	
Total		5.58 0.87 96	5.63 1.27 115	5.08 1.48 91	5.45 1.25 302	

(Note: Cell order= Mean, SD and n)

From table 25, the cell means of co-worker rating-relative revealed that, the combination of strong organizational culture with low work engagement brings a high cell mean score (Mean= 6.16) compared to all other cell means. The lower cell means (Mean = 3.31) was observed with weak organizational culture and high work engagement compared to other cell means. The co-worker rating-relative is the evaluation of a co-worker about the performance of the participants. The cell means for the co-worker rating-relative suggests that when organizations have a culture which is strong in nature, then even without or low work engagement the employee can do better in the organization. And at the same time high work engagement of the

employee may not result in good performance, when the employee working in a weak organizational culture.

To get a more clarification about the interaction between organizational culture and work engagement on co-worker rating- relative, the cell means were graphically plotted and presented in figure 7.



(Note: Weng= Work Engagement, Oc= Organizational Culture)

Figure 7: Interaction graph of Co-worker-Rating-Relative by Organizational culture and work engagement

Figure 7 shows the importance of having strong organizational culture in the organization for the high performance of the employees. While addressing the co-worker rating-relative, the interaction suggests that the employees who feel their culture as strong shows high performance consistently in the organization with all the work engagement levels (low, average and high). Various studies were also reported the good performance of highly engaged employees (Bakker et al, 2004; Perrin, 2008), but in this case, even the low work engaged employees who perceive their culture as strong was rated as high performers (co-worker rating-relative) in the organization. According to Stewart (2010) norms and values of organizational

culture have high impact on performance of employees. Thus from the result, it can be assume that when an organizational culture said to be strong- which shares the norms and values in the organization, and thereby the employees maintains a good performance in the organization.

Influence of Experience, Work engagement and Organizational Culture on Supervisor Rating

Supervisor rating is the performance rating done by supervisor about the performance of the participant in the organization. To know whether there exists any significant interaction of experience, work engagement and organizational culture on supervisor rating, three-way ANOVA was performed. The result of the analysis is presented in the table 26.

Table 26

Summary of 3-way ANOVA of Supervisor Rating by Experience, Work engagement and Organizational Culture (3 x 3 x 2)

Source of variation	Sum of Squares	Df	Mean Square	F
Experience	0.99	2	0.49	1.54
Work engagement	1.64	2	0.82	2.55
Organizational Culture	1.732	1	1.73	5.40*
Experience * Work engagement	0.65	4	0.17	0.50
Experience * Organizational Culture	0.33	2	0.17	0.52
Work engagement * Organizational Culture	2.13	2	1.07	3.32*
Experience * Work engagement * Organizational Culture	0.12	1	0.12	0.38
Error	92.11	287	0.32	
Total	7773.01	302		

*p< .05. **p< .01.

Table 26 gives the result of three-way ANOVA and found no significant three-way interaction of experience, work engagement and organizational culture on supervisor rating. It suggests that, while considering the influence of experience, work engagement and organizational culture together on supervisor rating, these three variables did not produce any significant effect on the performance of the participants.

When the two-way interaction was considered, no significant interaction effect except between work engagement and organizational culture ($F = 3.32, p < .05$) on supervisor rating was observed. The significant two-way interaction suggests that, different levels of work engagement of employees together with the organizational culture influence the evaluation of supervisor about the performance of the participants.

A significant difference in supervisor rating on performance of the employees between strong and weak culture also observed from the analysis ($F = 5.40, p < .01$). According to Karlsen (2011) organizations with culture where employees' goals are aligned to the organization's goals are often thought of as successful culture. Only with this type of culture, an employee in the organization can perform better.

Hence, based on the nature of organizational culture (strong or weak), the performance of the employee may differ. Sometimes, some other variables also interact with the organizational culture and influence the performance of the employees. The present analysis revealed a significant main effect of organizational culture; and a significant interaction effect of organizational culture with work engagement in determining the supervisor rating about the performance of the employees.

To know more about the interaction of work engagement and organizational culture, the cell means of supervisor rating were calculated and presented in the table 27.

Table 27

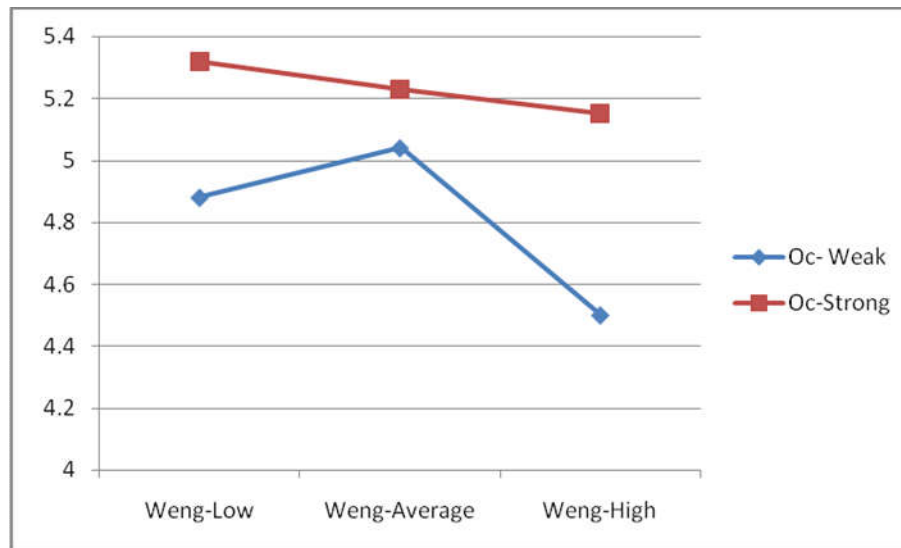
Mean, Sd, and N of Supervisor Rating by Work Engagement and Organizational Culture

Variables		Work engagement			Total	
Organizational culture	Group	Low	Average	High		
	Weak		4.88	5.04	4.50	4.87
			0.71	0.44	0.81	0.67
Strong		77	51	26	154	
		5.32	5.23	5.15	5.21	
Total		0.48	0.43	0.54	0.48	
		19	64	65	148	
		4.97	5.15	4.97	5.04	
		0.48	0.44	0.69	0.61	
		96	115	91	302	

(Note: Cell order= Mean, SD and n)

Table 27 shows that the cell means calculated for the interaction between organizational culture and work engagement on supervisor rating and revealed that when the strong organizational culture interacted with low work engagement, a high mean score (Mean =5.32) was observed. And at the same time, when the weak organizational culture interacted with high work engagement, the interaction shows the low mean score (Mean = 4.40) compared to other mean scores. The high and low cell means in levels of work engagement and organizational culture on supervisor rating indicates that there is significant difference in performance of the employees when different levels of work engagement and organizational culture interact with each other.

To get more clarity about the interaction the cell means of supervisor rating based on work engagement and organizational culture was graphically plotted and presented in figure 8.



(Note: Weng= Work Engagement, Oc= Organizational Culture)

Figure 8: Interaction graph of supervisor rating by Organizational culture and work engagement

The figure 8 shows the performance (supervisor rating) of the employees by work engagement and organizational culture. From the figure, it is observed that, irrespective of the work engagement, employee who feels their organizations culture as strong rated as high performers than employee who felt their organizational culture as weak. Uddin, Luva, and Hossian (2013) suggested both positive and negative mannerism of organizations culture has a significant role determining the performance of the employees. The positive mannerisms of strong organizational culture may have motivated the employees to perform well in the organization. This may be the reason why even low and average engaged employees show a higher performance of the employees. Since, the work engagement is considered to be a positive factor in the organization, high work engagement of the employee will lead the employees in maximum performance of the employee. Alessandri, Borgogni, Schaufeli, Caprara, and Consiglio (2014) reported a significant relationship between

work engagement and performance on the basis of the basis of ratings obtained from supervisors.

Influence of Experience, Work engagement and Organizational Culture on Performance

Performance of the employee is the sum total of all the five rating- which include- self rating absolute, self-rating- relative, co-worker rating absolute, co-worker rating relative and supervisor rating. The investigator has done three-way ANOVA to know the interaction effect of experience, work engagement and organizational on the perceptions of the participant, co-worker and supervisor about the performance of the employee. The average of five perceived ratings gives the performance of the participant in the organization. The results of the analysis are presented in the table 28.

Table 28
Summary of 3-way ANOVA of Performance by Experience, Work engagement and Organizational Culture (3 x 3 x 2)

Source of variation	Sum of Squares	Df	Mean Square	F
Experience	9.10	2	4.55	7.83**
Work engagement	4.85	2	2.42	4.17*
Organizational Culture	7.20	1	7.20	12.40**
Experience * Work engagement	6.59	4	1.65	2.84*
Experience * Organizational Culture	1.84	2	0.92	1.58
Work engagement * Organizational Culture	10.17	2	5.08	8.75**
Experience * Work engagement * Organizational Culture	1.18	1	1.18	2.03
Error	166.79	287	0.58	
Total	9072.56	302		

*p< .05. **p< .01.

From table 28, it can be seen that no significant three-way interaction of experience, organizational culture and work engagement on performance of the

employees was observed. It suggests that, when the different levels of experience, work engagement and organizational culture were taken together, the interaction of these different levels of the variables did not yield a significant influence in ratings of the performance of industrial employees.

Even though the three-way interaction was absent on performance, the presence of two-way interactions of experience and work engagement ($F = 2.84, p < .05$), work engagement and organizational culture ($F = 8.75, p < .01$) can be seen. It suggests that, experience, work engagement and organizational culture play a significant role in deciding when rating the performance of industrial employees.

The results also revealed a significant main effect of experience ($F = 7.83, p < .01$), organizational culture ($F = 12.40, p < .01$) and work engagement ($F = 4.17, p < .05$) on performance of employees. The significant main effect of the variables suggests that, there exists a significant difference in the performance of participants among different levels of experience (Group I, Group II & Group III), different levels of work engagement (low, average and high) and the different levels of organizational culture (strong and weak). Studies are there in literature which states the impact of these variables on performance of employees in different organizations or industries (Manikandan, 2010; Shaffril & Uli, 2010; Hassan, Olufemi & Ogunkoya, 2014; Anitha, 2014, Gorgievski, *et al.*, 2014; Ginevicius & Vaitkunaite, 2006).

The main and interaction effect of experience, organizational culture and work engagement suggests that, these variables have a significant role in deciding the performance of the industrial employees. Since the performance of an employee includes all the activities that are relevant in achieving organizational goals, the

variables such as experience, organizational culture and work engagement which determine the activities of them is important to study. To know more about the two-way interaction between work engagement and organizational culture, cell means were calculated for each combination and presented in the table 29.

Table 29

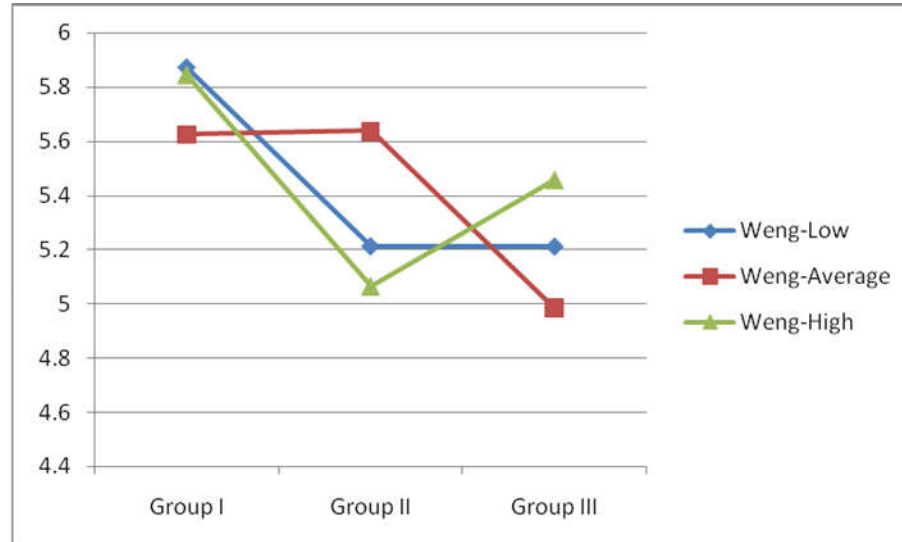
Mean, Sd, and n of Performance by Work Engagement and Experience.

Variables		Work Engagement			Total
Experience	Group	Low	Average	High	
	Group I (1-10 years)	5.87	5.62	5.84	5.78
		0.32	0.55	0.41	0.45
		31	32	29	92
	Group II (11-20 years)	5.21	5.64	5.06	5.31
0.57		0.89	0.94	0.87	
33		49	50	132	
Group III (21-37 years)	5.21	4.98	5.46	5.15	
	0.89	1.32	0.38	1.06	
	32	34	12	78	
Total		5.42	5.44	5.36	5.41
		0.70	1.00	0.82	0.86
		96	115	91	302

(Note: Cell order= Mean, SD and n)

Table 29 shows the cell means of performance when different groups of experience and work engagement taken together. From the table, a higher cell mean (Mean = 5.87) was observed when the group with the experience 1-10 years (Group I) interacted with low work engagement. A low cell mean (Mean = 4.98) was observed with the group of an experience with 20 years and above (Group III) interacted with average work engagement. The mean scores obtained for performance suggest that, the performance of the participants significantly differ when the different levels of experience and work engagement considered together.

To get more clarity of the interaction, cell means calculated were graphically plotted and presented in figure 9.



(Note: Weng=work engagement, Group I =Experience 1-10 years, Group II =Experience 11 to 20 years, Group III = Experience 21 to 37 years)

Figure 9: Interaction graph of Performance by experience and work engagement

Figure 9 suggests that, participants who have entered in to the job (Group I) have high performance rating irrespective of their work engagement while comparing the performance of the participants with more than 10 years of experience in the work (Group II & Group III). Supporting to the result, Bigliardi, Dormio, Galati, and Schiuma (2012) reported that when the employee were new to the organization they will show a good performance because new employees who join the organizational may put an effort to participate in the organization which resulted in high performance.

The results of the interaction graph also suggest the importance of having high work engagement among the employees. That is, when the employees with an experience of 21 to 37 years showed high work engagement and they marked their

highest performance than average and low work engagement. Different scholars have outlined the importance of work engagement in the employee to perform well in the organization (eg. Crawford, LePine, & Rich, 2010; Bakker *et al.*, 2004).

In addition to this, the result also revealed a better performance of highly engaged participants at first years of work life and last years of life in the organization. But, in between first years and last years, the performance of the participants went down drastically. There may be some intervening factors like job satisfaction, interference of trade unions, family issues, life related developments etc which influence their performance in the organization.

The three-way ANOVA table also revealed significant interaction between different levels of work engagement and organizational culture on performance rating. To know more about the interaction between different levels of these variables, the cell means for performance was calculated and presented in the table 30.

Table 30

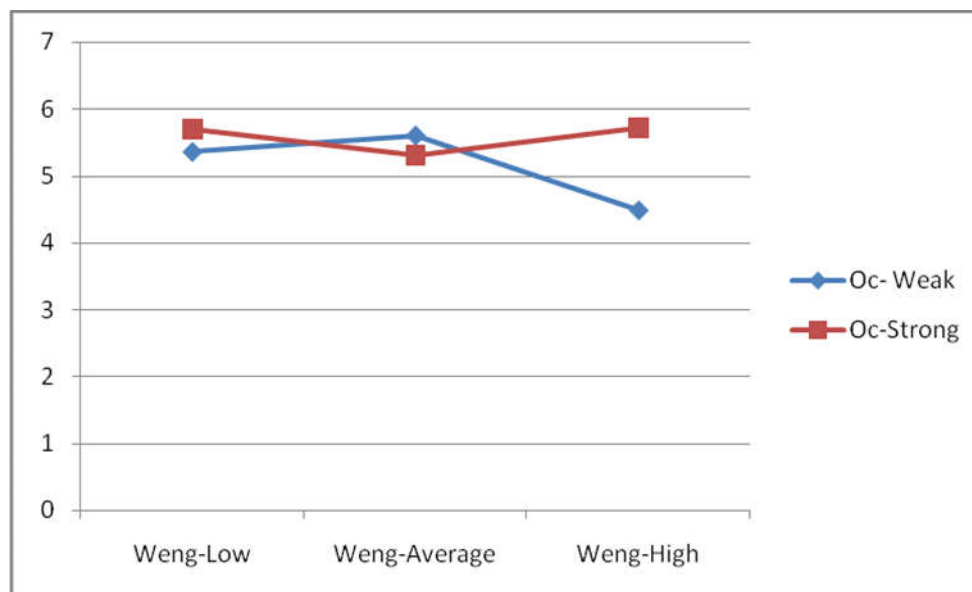
Mean, Sd, and N of Performance by Work Engagement and Organizational Culture.

Variable		Work engagement			Total
Group		Low	Average	High	
Organizational culture	Weak	5.36 0.69 77	5.60 0.68 51	4.48 0.76 26	5.29 0.80 154
	Strong	5.69 0.70 19	5.31 1.19 64	5.72 0.53 65	5.54 0.91 148
Total		5.42 0.70 96	5.44 1.00 115	5.36 0.82 91	5.41 0.86 302

(Note: Cell order= Mean, SD and n)

From table 30, it can be seen that, among the cell means observed for supervisor rating, a high mean score (Mean = 5.72) was observed in the combination of high work engagement and strong organizational culture. The low mean score (Mean = 4.48) was found when high work engagement interacted with weak organizational culture. The results suggest that, when different levels of work engagement are linked with strong and weak organizational culture and have a significant effect on the performance of the participants.

To know more about interaction between work engagement and organizational culture on performance of the participants, the cell means were graphically represented in the figure 10.



(Note: Weng= Work Engagement, Oc= Organizational Culture)

Figure 10: Interaction graph of performance by Work Engagement and organizational culture

Figure 10 shows the performance rating of the participants in work engagement and organizational culture taken together. High and consistent performance of the participants was observed from the figure, which suggests the

importance of having strong organizational culture in the working environment. Even when the participants had a low work engagement, they performed well than with weak organizational culture. Studies in the area of organizational culture also suggested that, employee who scored on organizational culture develops different organizational variables which influence the productivity of them (Naqshbandi, Kaur, & Ma, 2015; Tastan & Turker, 2014).

Summary

Since, the performance rating is the average of five different rating (self-rating absolute, self-rating relative, co-worker rating- absolute, co-worker rating relative and supervisor rating) separate ANOVA was performed to know the three-way interaction of experience, organizational culture and work engagement on performance. The analyses found that, when the co-worker rating absolute was considered as the indicator of employee performance, interaction between different groups of experience, organizational culture and work engagement does not lead to a significant difference in the performance of the employee. But all other performance ratings suggest, the performance of the employee does not differ when experience, organizational culture and work engagement of the employee interact with each other.

When the performance rating, which is average of all five ratings considered, it was also observed that the performance of the employee does not differ in the organization when different groups of experience, organizational culture and work engagement of the employee interact with each other.

Above section discussed the main and interaction effect of experience, work engagement and organizational culture on performance of the industrial employees.

In this section, investigator used separate three-way ANOVA and follow up analysis to know the main and interaction effect of experience, work engagement and work stress on performance of the employees. As the performance of the employee comprised of five ratings, investigator also computed ANOVA for five performance ratings, viz; self- rating - absolute, self-rating- relative, co-worker rating- absolute, co-worker rating- relative and supervisor rating.

Influence of experience, work engagement and work stress on self-rating-absolute

Self-rating-absolute is the evaluation of performance which is rated by the participants. To know is there any significant interaction in the evaluation of performance (self-rating- absolute) by experience, work engagement and work stress, three-way ANOVA was performed. The results of the analysis are presented in table 31.

Table 31

Summary of 3-way ANOVA of Selfrating -Absolute by Experience, Work engagement and Work Stress (3 x 3 x 2)

Source of Variance	Sum of Squares	Df	Mean Square	F
Experience	12.42	2	6.21	15.82**
Work engagement	23.80	2	11.90	30.31**
Work Stress	3.49	2	1.74	4.44*
Experience * Work engagement	26.60	4	6.65	16.93**
Experience * Work Stress	33.65	4	8.41	21.42**
Work engagement * Work Stress	56.06	4	14.01	35.69**
Experience * Work engagement * Work Stress	55.0	6	9.17	23.36**
Error	108.77	277	0.393	
Total	10396.00	302		

*p< .05, **p< .01.

Table 31 shows the main and interaction effect of experience, work engagement and work stress on performance (self-rating-absolute) of employees. While addressing the self-rating-absolute by experience, work engagement and work stress, a significant three-way interaction ($F = 23.36, p < .01$) was observed. The significant interaction effect reveals that, when the variables experience, work engagement and work stress taken together the interaction between different levels of these variables brings significant difference in the performance evaluation.

In addition to the three-way interaction, two-way interactions on self-rating-absolute between experience and work engagement ($F = 16.93, p < .01$), experience and work stress ($F = 21.42, p < .01$), and work stress and work engagement ($F = 35.69, p < .01$) was observed. These two-way interactions suggests that, when the different levels of experience, work engagement and work stress taken together, it creates a significant influence on the performance (self-rating- absolute) of the employees.

A significant main effect in the performance (self-rating-absolute) also found among different levels of experience ($F = 15.82, p < .01$), work engagement ($F = 30.31, p < .01$) and work stress ($F = 4.44, p < .05$) which suggest the independent role of the selected variables on the performance of the employees. Substantiating to the observed result, different studies conducted in the organizational field also reported the influence of experience, work engagement and work stress on the performance of the employees (Shaffril & Uli, 2010; Anitha, 2014; Ahmed & Ramzan, 2013). In short, while considering the experience, work engagement and work stress together, the analysis revealed both main and interaction effect of the experience, work

engagement and work stress on performance of the employees (self-rating-absolute).

To know more about the three-way interaction on self-rating-absolute, cell means were calculated and presented in the table 32.

Table 32

Mean, Sd, and N of Self-Rating- Absolute by Experience, Work Engagement and Work Stress

Experience	Work engagement	Work stress			Total
		Low	Average	High	
Group I (1-10 years)	Low	6.00 (0.00, 1)	6.00 (0.00, 14)	6.19 (0.40, 16)	6.10 (0.30, 16)
	Average	5.50 (0.51, 16)	6.67 (0.50, 9)	6.00 (0.00, 7)	5.94 (0.67, 32)
	High	7.00 (0.00, 1)	6.00 (0.00, 7)	5.53 (0.54, 17)	6.14 (0.83, 29)
	Total	5.61 (0.61, 18)	6.50 (0.51, 34)	5.88 (0.51, 40)	6.05 (0.63, 92)
Group II (11-20 years)	Low	4.50 (1.20, 18)	3.00 (0.00, 4)	5.45 (0.52, 11)	4.64 (1.19, 33)
	Average	5.33 (0.50, 9)	6.50 (0.82, 34)	6.00 (0.00, 6)	6.22 (0.85, 49)
	High	5.47 (0.91, 16)	6.46 (0.52, 13)	5.95 (0.57, 22)	6.24 (0.71, 50)
	Total	5.38 (1.30, 42)	6.22 (1.19, 51)	5.82 (0.55, 39)	5.83 (1.13, 132)
Group III (21-37 years)	Low	5.00 (0.00, 16)	-	6.12 (1.09, 16)	5.56 (0.95, 32)
	Average	6.92 (0.28, 13)	5.00 (0.00, 3)	3.11 (0.47, 18)	4.74 (1.86, 34)
	High	-	6.00 (0.00, 10)	6.00 (0.00, 2)	6.00 (0.00, 12)
	Total	5.86 (0.99, 29)	5.77 (0.44, 13)	4.61 (1.71, 36)	5.27 (1.45, 78)
Total	Low	4.77 (0.910, 35)	5.33 (1.28, 18)	5.98 (0.80, 43)	5.42 (1.08, 96)
	Average	5.95 (0.84, 38)	6.43 (0.83, 46)	4.32 (1.94, 31)	5.70 (1.36, 115)
	High	6.50 (0.89, 16)	6.50 (0.51, 34)	5.78 (0.57, 41)	6.18 (0.71, 91)
	Total	5.58 (1.106, 89)	6.26, (0.94, 98)	5.46 (1.19, 115)	5.75 (1.14, 302)

(Note: Cell order= Mean, SD and n)

Table 32 shows the cell means of performance (self-rating-absolute) of the employees when different groups of experience, work engagement and work stress interacted. While considering the cell means of self-rating-absolute, a high mean score (Mean = 7.00) was observed when high work engagement, low work stress and the group with 1-10 years of experience interacted while comparing other cell means. A low mean score was observed for the interaction of group with 11-20 years of experience, low work engagement and average work stress. From the cell mean scores, it can observe that performance of the employee may differ significantly when different groups of experience, work engagement and work stress interact. The result also suggests that employees with high work engagement and low work stress perform better in the organization, if they have the characteristics of new comers. Supporting to the above result, different studies also suggested that, employee at their first years (Bigliardi, Dormio, Galati, & Schiuma, 2012), who have high work engagement (Bakker *et al.* (2004) and employee with low stress (Siu, 2003) perform well in the organization.

Besides the three-way interaction effect, the ANOVA also revealed two-way interactions between experience and work stress, work stress and work engagement and experience and work engagement on self-rating absolute. To know more about the two-way interaction, the cell means were found for each two-way interaction on self-rating-absolute and presented in separate tables. The calculated cell means for the interaction between experience and work engagement on self-rating-absolute was not presented here, because the cell mean table for the interaction between the variables on self-rating absolute were already presented with earlier combination (Table 15).

The cell means of self-rating-absolute when different groups of experience and work stress interacted were given in the table 33.

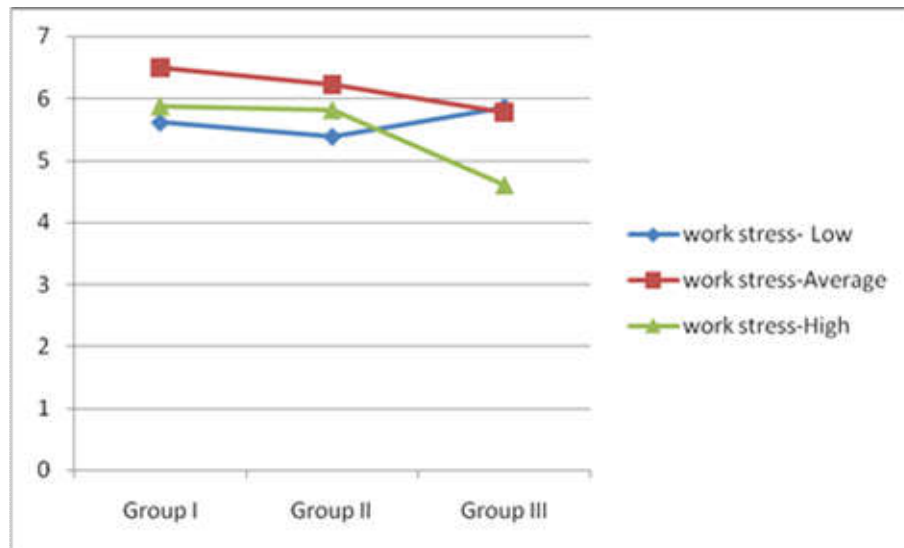
Table 33

Mean, Sd, and N Of Self rating - Absolute by Experience and Work Stress

Variables		Work Stress			Total	
Experience	Group	Low	Average	High		
	Group I (1- 10 years)		5.61	6.50	5.88	6.05
			0.61	0.51	0.51	0.63
			18	34	40	92
	Group II (11-20 years)		5.38	6.22	5.82	5.83
		1.30	1.19	0.56	1.13	
		42	51	39	132	
Group III (21- 37 years)		5.86	5.77	4.61	5.27	
		0.99	0.44	1.71	1.45	
		29	13	36	78	
Total		5.58	6.26	5.46	5.75	
		1.106	0.95	1.19	1.14	
		89	98	115	302	

(Note: Cell order= Mean, SD and N)

From table 33 which shows the two-way cell mean of work experience and work stress on self-rating-absolute, a high mean score (Mean= 6.50) was observed when the group with 1-10 years of experience (Group I) interacted with average work stress, and a mean score was observed (Mean = 4.61) with high work stress and the group with 20-37 years of experience (Group III). The observed cell means of self-rating-absolute suggests that, there exists significant difference in performance rating when different levels of work stress and experience were taken together. To know more about the interaction between different levels of experience and work stress on self-rating-absolute, a figure was drawn on the basis of calculated mean scores and presented in figure 11.



(Note: Group I =Experience 1-10 years, Group II =Experience 11 to 20 years, Group III = Experience 21 to 37 years)

Figure 11: Interaction graph of Self rating - Absolute by Experience and Work Stress

Figure 11 shows the performance (self-rating-absolute) of the participants by their level of experience and work stress. From the figure, it is observed that, participants with average work stress perform well in the organization irrespective of their work experience than participants with high and low work stress. Stress is considered to be negative variable only when it exceeds and affect the daily activities of employees. An optimum level of stress is needed for every individual to do better performance. Substantiating to the concept, the figure shows that an average work stress is essential for an individual employee in every organization and if the stress exceeds the limit, the performance of the employee will come downwards. Earlier studies also reported that high stress reduce the performance of the employees. For example, in their study, Bashir and Ramay (2010) reported that there exist a significant negative correlation between job stress and job performances

which suggest that an increase in the job stress significantly reduce the performance of an individual.

Cell means for self-rating-absolute due to two-way interaction between work engagement and work stress were calculated and presented in the table 34.

Table 34

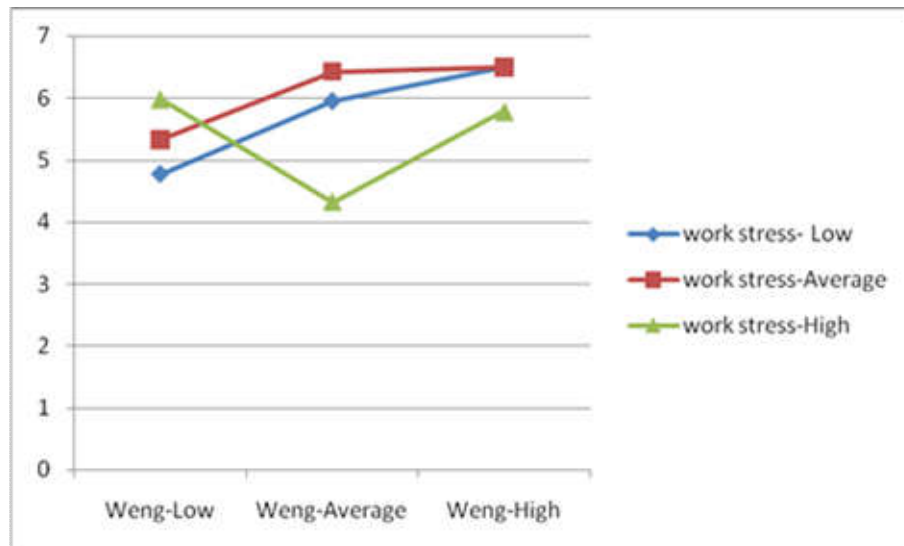
Mean, Sd, and N of Selfrating-Absolute by Work Engagement and Work Stress

Variables		Work Stress			Total	
Work Engagement	Group	Low	Average	High		
	Low	Mean	4.77	5.33	5.98	5.42
		SD	0.91	1.283	0.80	1.08
		N	35	18	43	96
	Average	Mean	5.95	6.43	4.32	5.70
SD		0.84	0.83	1.49	1.36	
N		38	46	31	115	
High	Mean	6.50	6.50	5.78	6.18	
	SD	0.89	0.51	0.57	0.71	
	N	16	34	41	91	
Total		5.58	6.26	5.46	5.75	
		1.10	0.94	1.19	1.14	
		89	98	115	302	

(Note: Cell order= Mean, SD and n)

Table 34 shows the cell means for self-rating-absolute by work engagement and work stress. While considering the cell means of self-rating- absolute, a high mean score (Mean = 6.50) was observed for the combination- low work stress with high work engagement and average work stress with high work engagement. A low mean score (Mean = 4.32) was observed for the combination of high work stress with average work engagement on self-rating absolute. The result suggests that performance (self-rating-absolute) of the participants differ when the different groups of work engagement interact with work stress.

To know more about the interaction, the cell mean scores were plotted using line graph and it is presented in figure 12.



(Note: Weng= Work Engagement)

Figure 12: Interaction graph of Self rating - Absolute by Work Engagement and Work Stress

Figure 12 shows the performance (self-rating-absolute) of the participants by work engagement and work stress. While considering the self-rating-absolute, it was observed that, employees with average work stress shown a consistent high performance in the organization when they had an average and high work engagement. The result suggests that, employee with average or optimum level of stress performs better in the organization than employees with high stress. A high stress in the individual will reduce the efficiency of the individual employee. The present finding was supported by earlier studies of different scholars (Bashir & Ramay, 2010; Warraich, Ahmed, Nawaz, & Khoso, 2014). The figure also suggests the role of work engagement, pointing employees who experience average and low

stress performed well in the organization, when they have high work engagement. The work engagement related factors such as hard work, creativity, self-efficacious (Bakker & Demerouti, 2008; Xanthopoulou *et al.*, 2007) may have motivated them to perform well in the organization.

Influence of Experience, Work engagement and Work Stress on Self-Rating-Relative (3x3x3)

Self-rating-relative is the performance marked by employee by comparing them with other employees in the organization. To know the main and interaction effect of experience, work engagement and work stress self-rating relative, three-way ANOVA was computed and the results are presented in the table 35.

Table 35

Summary of 3-way ANOVA of Self rating – Relative by Experience, Work engagement and Work Stress (3 x 3 x 3)

Source of Variation	Sum of Squares	df	Mean Square	F
Experience	11.94	2	5.97	12.56**
Work engagement	5.33	2	2.66	5.59**
Work Stress	11.59	2	5.79	12.20**
Experience * Work engagement	25.51	4	6.38	13.42**
Experience * Work Stress	26.20	4	6.55	13.78**
Work engagement * Work Stress	9.81	4	2.45	5.16*
Experience * Work engagement * Work Stress	56.89	6	9.48	19.95**
Error	131.64	277	0.47	
Total	10172.00	302		

*p< .05. **p< .01.

Table 35 revealed that, there is significant three-way interaction (F = 19.95, p< .01) on self-rating relative, when the variables experience, work engagement and

work stress considered together. The significant interaction suggests that different levels of experience, work engagement and work stress jointly influence the performance (self-rating-relative) of the employees.

The significant two-way interaction effect on performance of the employees (self-rating-relative) also observed between experience and work engagement ($F = 13.42, p < .01$), experience and work stress ($F = 13.78, p < .01$), and work stress with work engagement ($F = 5.17, p < .05$). A significant main effect in performance rating (self-rating relative) was also observed among different levels of experience ($F = 12.56, p < .01$), work engagement ($F = 5.59, p < .01$) and work stress ($F = 12.20, p < .01$).

The main and interaction effects of experience, work engagement and work stress on self-rating-relative suggests that when these variables taken together, each of the variable independently as well as jointly influence the performance of the industrial employees. The role of these variables in determining the performance of employees was also commented by different studies conducted in this area (Manikandan, 2010; Perrin, 2008; Bashir & Ramay, 2010).

As the table shows the significant three-way interaction effect of experience, work engagement and work stress on self-rating- relative, cell means were found for the interaction to know more about it. The results are presented in the table 36.

Table 36

Mean, Sd, and N Of Self rating – Relative by Experience, Work Engagement and Work Stress

Experience	Work engagement	Work stress			Total
		Low	Average	High	
Group I (1-10 years)	Low	7.00 (1, -)	7.00 (14, 0.00)	5.75 (16, 0.45)	6.35 (31, 0.71)
	Average	5.50 (16, 0.51)	6.89 (9, 0.33)	6.00 (7, 0.00)	6.00 (32, 0.71)
	High	5.00 (1, -)	7.00 (11, 0.00)	5.53 (17, .51)	6.07 (29, 0.84)
	Total	5.56 (18, 0.61)	6.97 (34, 0.17)	5.70 (40, 0.46)	6.14 (92, 0.76)
Group II (11-20 years)	Low	5.06(18, 1.43)	5.00 (4, 0.00)	4.91 (11, 1.04)	5.00 (33, 1.19)
	Average	5.33 (9, 0.50)	6.50 (34, 0.82)	6.00 (6, 0.00)	6.22 (49, 0.85)
	High	5.00 (15, 0.00)	7.00 (13, 0.00)	5.36 (22, 1.09)	5.68 (50, 1.07)
	Total	5.10 (42, 0.96)	6.51 (51, 0.83)	5.33 (39, 1.03)	5.71 (132, 1.13)
Group III (21-37 years)	Low	4.94 (16, .25)	-	5.19 (16, 0.11)	5.06 (32, 0.80)
	Average	6.92 (13, .27)	5.00 (3, 0.00)	3.11 (18, 0.47)	4.74 (34, 1.86)
	High	-	6.00 (10, 0.00)	7.00 (2, 0.00)	6.17 (12, 0.39)
	Total	5.83 (29, 1.03)	5.77 (13, 0.44)	4.25 (36, 0.46)	5.09 (78, 1.41)
Total	Low	5.06 (35, 1.08)	6.56 (18, 0.85)	5.33 (43, 0.94)	5.46 (96, 1.114)
	Average	5.95 (38, 0.84)	6.48 (46, 0.83)	4.32 (31, 0.49)	5.72 (115, 1.37)
	High	5.00 (16, 0.00)	6.71 (34, 0.46)	5.51 (41, 0.92)	5.87 (91, 0.97)
	Total	5.43 (89, 0.97)	6.57 (98, 0.73)	5.12 (115, 1.21)	5.68 (302, 1.18)

(Note: Cell order= Mean, 'n' and SD)

Table 36 shows the self-rating- relative of the employee by experience, work engagement and work stress. While considering all the three variables together, high

cell mean score (Mean = 7.00) observed for three combinations of experience, work engagement and work stress. At the same time, a low mean score (Mean = 3.11) was observed with average work engagement and the group of 21-37 years of experience (Group III) while comparing other cell means.

The result revealed that, among five interactions, three interaction of the high performance were among the employees who was new to the organization (between group I level experience (1-10 years), low work engagement and low work stress; group I level of experience (1-10 years), low work engagement and average stress; group I level of experience (1-10 years), high work engagement and average work stress. According to Bigliardi, Dormio, Galati, and Schiuma (2012) when the employees are new to the organization, they may put an effort to participate in organization activates which result in high performance of the participants. The other two high performance observed from the table, the role of high work engagement in determining the role of performance, viz; group II level of experience (11-20 years), high work engagement and average work stress; group III level of experience (21 to 37 years), high work engagement and high stress.

The high rating and low rating of self-rating-relative suggests that, the performance of the employees is determined by the level of experience, work engagement and work stress of the employees. It also suggests that average work stress level is optimum which helps the employees to perform well in the organization. Highly work engaged employees also marked their best performance in the organization. In addition, most of the high rating was observed among the employees who were new to the work.

Cell means were also calculated for two-way interactions of self-rating-relative by experience and work stress; work stress and work engagement. As the cell means of self-rating-relative by experience and work engagement already presented with the three-way interaction of self-rating relative by experience, work engagement and organizational culture (table 17), hence the same combination was not discussed here. The cell means of other two-way interactions were presented in two separate tables.

The two-way cell means of self-rating relative when different levels of experience and work stress interact was calculated and presented in table 37.

Table 37

Mean, Sd, and N of Selfrating - Relative by Experience and Work Stress

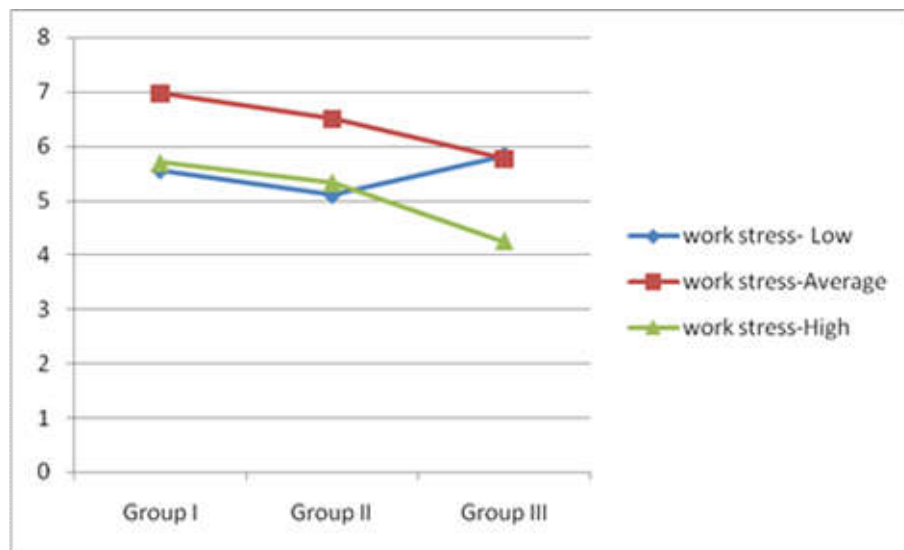
Variables		Work Stress			Total
Experience	Group	Low	Average	High	
	Experience	Group I (1- 10 years)	5.56 0.62 18	6.97 0.17 34	5.70 0.46 40
Group II (11-20 years)		5.10 1.04 29	6.51 0.83 51	5.33 1.03 39	5.71 1.13 132
Group III (21- 37 years)		5.83 1.04 29	5.77 0.44 13	4.25 1.46 36	5.09 1.42 78
Total		5.43 0.98 89	6.57 0.73 98	5.12 1.21 115	5.68 1.18 302

(Note: Cell order= Mean, SD and 'n')

Table 37 gives the cell means of self-rating-relative by experience and work stress. While looking into the cell means of self-rating-relative, the highest mean score (Mean = 6.97) was observed between group I level of experience (1-10 years) with average work stress and the lowest mean score (Mean = 4.25) was observed in

group III level of experience (21-37 years) with high work stress. The difference observed in the self-rating relative by experience and work stress indicates that, the performance of the employee was influenced by experience and work stress of them.

To know more about the interaction, cell means of self-rating-relative were graphically plotted and the details are presented in figure 13.



(Note: Group I =Experience 1-10 years, Group II =Experience 11 to 20 years, Group III = Experience 21 to 37 years)

Figure 13: Interaction graph of Self rating – Relative by Experience and Work Stress

Figure 13 shows performance (self-rating- relative) of the participants by work experience and work stress. While addressing the self-rating-relative, it was observed that employee with average work stress rated as high performance than low and high stressed employees. It suggests that, stress was not an obstacle in front of the employees, if it is in an average or optimum level to perform well in the organization. Studies also reported a ‘inverted U’ shaped relationship between stress and performance, where the average stressed employees showed a high performance. Thus the work stress becomes a problem to the employees only if it

exceeds the limits or become very low. Supporting to this, the present result also revealed low performance of the employee with high stress. The negative correlation between work stress and performance extends its support to the present result (Rubina *et al.*, 2008; Warraich, Ahmed, Nawaz, & Khoso, 2014).

To know more about the interaction effect between different levels of work engagement and work stress on self-rating-relative the cell means of self-rating-relative by work engagement and work stress were calculated and presented in the table 38.

Table 38

Mean, Sd, and 'n' of Self rating – Relative by Work Engagement and Work Stress

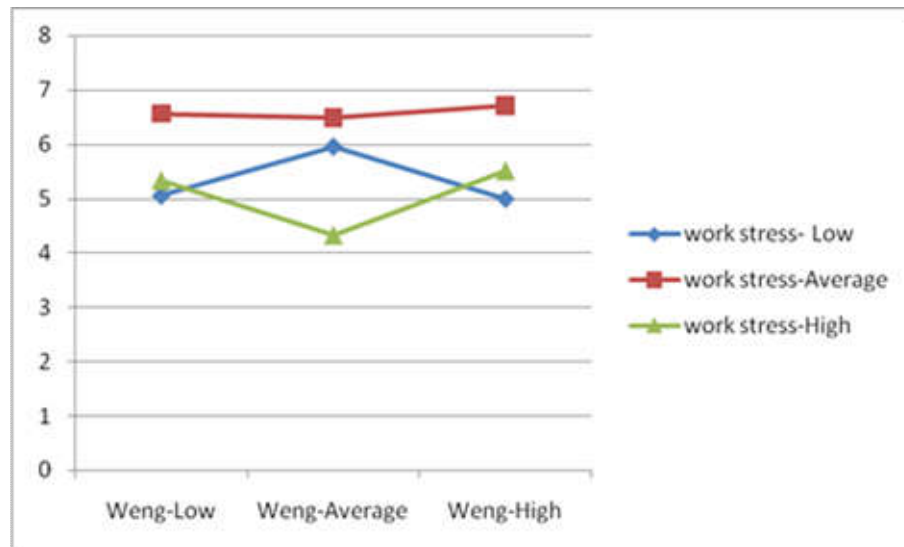
Variables		Work Stress			Total
Work Engagement	Group	Low	Average	High	
	Work Engagement	Low	5.06	6.56	5.33
1.08			0.86	0.94	1.11
35			18	43	96
Work Engagement	Average	5.95	6.48	4.32	5.72
		0.84	0.84	1.49	1.36
		38	46	31	115
Work Engagement	High	5.00	6.71	5.51	5.87
		0.00	0.46	0.92	0.96
		16	34	41	91
Total		5.43	6.57	5.12	5.68
		0.97	0.73	1.21	1.18
		89	98	115	302

(Note: Cell order= Mean, SD and N)

Table 38 shows the cell means of self-rating-relative by work engagement and work stress. The cell means calculated revealed a high mean score (Mean = 6.71) when high work engagement and average work stress taken together and a low mean score (Mean = 4.32) in the case of average work engagement with high work stress were taken together. The cell means of self-rating-relative indicate that, when

different levels of work engagement interact with work stress, the interaction brings a significant influence on performance of the employees.

To know more about the interaction position, the calculated cell means were graphically plotted and presented in figure 14.



(Weng = work engagement)

Figure 14: Interaction graph of Self rating – Relative by Work engagement and Work Stress

Figure 14 shows the performance (self-rating relative) of employees when various groups of work engagement and work stress interacted. The figure indicates that the average level of work stress to the employee was essential to push them in maximizing their performance. That is, irrespective of the work engagement (low, average and high), employees with average work stress showed a highest performance (self-rating-relative) than employees with low and high work stress. Different studies related with work stress (eg.- Yerkes & Dodson, 1908) also suggested that, employees with average work stress perform well in the

organization. From the figure 14, it can be observed that the highest rating in the performance was in the combination of average work stress and high work engagement. The result suggests that, a high work engagement in the employee will support the employees to perform well in the organization. In accordance with the present result previous studies also reported the influence of work engagement on performance related factors (Demerouti, 2006; Bakker *et al.*, 2012).

Influence of Experience, Work engagement and Work Stress on Co-worker rating -Absolute

Co-worker rating-absolute is the performance rating done by the co-worker about the participant. To know is there any significant interaction of experience, work engagement and work stress exist on co-worker rating-absolute, three-way ANOVA was executed and the results are presented in the table 39.

Table 39

Summary of 3-way ANOVA of Co-worker rating- absolute by Experience, Work engagement and Work Stress (3 x 3 x 3)

Source of variation	Sum of Squares	df	Mean Square	F
Experience	13.23	2	6.61	7.03**
Work engagement	4.46	2	2.23	2.37
Work stress	4.50	2	2.25	2.39
Experience * Work engagement	7.99	4	1.99	2.12
Experience * Work stress	43.83	4	10.96	11.65**
Work engagement * Work stress	24.97	4	6.24	6.64**
Experience * Work engagement * Work stress	44.67	6	7.44	7.91**
Error	260.60	277	0.94	
Total	9558.00	302		

**p< .01.

A significant three-way interaction effect of experience, work engagement and work stress on co-worker rating-absolute can be seen from the analysis ($F = 7.03$, $p < .01$). It suggests that, when the experience, work engagement and work stress taken together, the interaction between different levels of selected variables have a significant effect on the performance (co-worker rating- absolute) of the employees.

In addition to three-way interaction, the analysis also found the significant two-way interactions of experience with work stress ($F = 11.65$, $p < .01$) and work engagement with work stress ($F = 6.64$, $p < .01$) on self-rating relative. It revealed the role of different levels of work stress and work engagement in determining the performance (co-worker rating-absolute) of employees. A significant difference in performance (co-worker rating-absolute) also found among different levels of experience ($F = 7.03$, $p < .01$) by which it showed the influence of work experience of the employee on the performance of them.

From the results, it can be seen that the experience has a both main and interaction effect on performance (co-worker rating-absolute) of the employees. Even though work engagement and work stress doesn't have a main effect in this combination, it creates an interaction effect, which significantly influence the performance of industrial employees. As the analysis has found the three-way interaction effect mean scores were found for co-worker rating-absolute by experience, work engagement and work stress.

Table 40 shows the calculated cell means of co-worker rating-absolute when different groups of experience, work engagement and work stress interacted.

Table 40

Mean, Sd, and N Of Co-worker Rating Absolute By Experience, Work Engagement and Work Stress

Experience	Work engagement	Work stress			Total
		Low	Average	High	
Group I (1-10 years)	Low	6.00 (1, -)	6.00 (14, 0.00)	6.19 (16, 0.54)	6.10 (31, 0.39)
	Average	5.00 (16, 0.00)	6.67 (9, 0.50)	6.00 (7, 0.00)	5.69 (32, 0.78)
	High	6.00 (1, -)	6.55 (11, 0.52)	6.00 (17, 0.00)	6.21 (29, 0.41)
	Total	5.11 (18, 0.32)	6.35 (34, 0.48)	6.08 (40, 0.350)	5.99 (92, 0.60)
Group II (11-20 years)	Low	5.50 (18, 0.86)	4.00 (4, 0.00)	5.82 (11, 0.98)	5.42 (33, 1.00)
	Average	5.00 (9, 0.00)	5.35 (34, 2.23)	6.00 (6, 0.00)	5.37 (49, 1.87)
	High	5.73 (15, 0.46)	5.92 (13, 1.04)	4.55 (22, 0.91)	5.26 (50, 1.04)
	Total	5.48 (42, 0.67)	5.39 (51, 1.94)	5.13 (39, 1.08)	5.34 (132, 1.39)
Group III (21-37 years)	Low	5.88 (16, 0.50)	-	5.25 (16, 1.18)	5.56 (32, 0.95)
	Average	6.85 (13, .555)	5.00 (3, .000)	3.11 (18, .47)	4.71 (34, 1.851)
	High		5.00 (10, 0.00)	6.00 (2, 0.00)	5.17 (12, 0.39)
	Total	6.31 (29, 0.71)	5.00 (13, 0.00)	4.22 (36, 1.42)	5.13 (78, 1.42)
Total	Low	5.69 (35, 0.72)	5.56 (18, 0.86)	5.74 (43, 1.00)	5.69 (96, 0.87)
	Average	5.63 (38, 0.94)	5.59 (46, 1.99)	4.32 (31, 1.49)	5.26 (115, 1.66)
	High	5.75 (16, 0.44)	5.85 (34, 0.92)	5.22 (41, 0.99)	5.55 (91, 0.93)
	Total	5.67 (89, .78)	5.67 (98, 1.51)	5.17 (115, 1.27)	5.48 (302, 1.26)

(Note: Cell order= Mean, N and SD)

Table 40 shows the cell means for co-worker rating-absolute by experience, work engagement and work stress. When different levels of experience, work engagement and work stress interacted, both high and low mean score (co-worker

rating- absolute) was observed for average work engaged employees with group III level of experience (21-37 years). But when these levels interacted with low work stress, a low mean score (Mean = 6.85) was observed and at the same time when these variables are interacted with high work stress, a lower rating was observed (Mean = 3.11). The results suggest the importance of work stress level of the employee in defining the performance of them in the organization. Earlier studies also found a negative relationship of performance with work stress (Bashir & Ramay, 2010; Ahmed & Ramzan, 2013) which stated that when the work stress of the employee increases performance of them decreases.

Table 41 shows the cell means calculated for co-worker rating-absolute by experience and work stress. The results are discussed.

Table 41

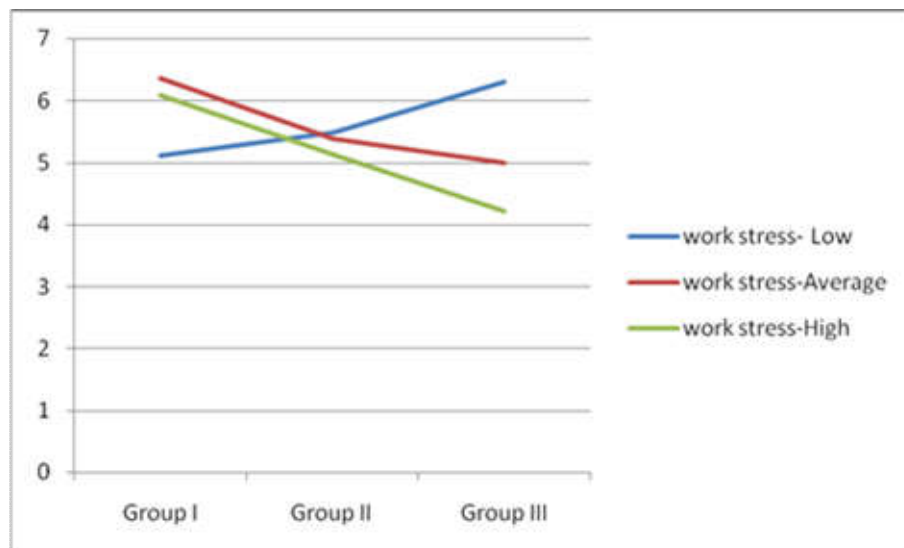
Mean, Sd, and N of Co-worker Rating Absolute by Experience and Work Stress

Variables		Work Stress			Total
<i>Experience</i>	Group	Low	Average	High	
	Group I (1- 10 years)	5.11 18 0.32	6.35 34 0.48	6.08 40 0.35	5.99 92 0.60
	Group II (11-20 years)	5.48 42 0.67	5.39 51 1.94	5.13 39 1.08	5.34 132 1.39
	Group III (21- 37 years)	6.31 29 0.71	5.00 13 0.00	4.22 36 1.42	5.13 78 1.42
	Total	5.67 89 0.78	5.67 98 1.51	5.17 115 1.27	5.48 302 1.26

(Note: Cell order= Mean, N and SD)

From the cell means of co-worker rating-absolute (Table 41) by experience and work engagement, the high mean score was observed (Mean = 6.35) in the

combination of average work stress and group I level of experience. The low mean score was observed when high work stress interacted with group III level of experience (Mean = 4.22). To know where the interaction takes place, a graph was drawn on the basis of calculated cell means of co-worker rating-absolute by experience and work engagement and presented it as figure 15.



(Note: Group I = Experience 1-10 years, Group II = Experience 11 to 20 years, Group III = Experience 21 to 37 years)

Figure 15: Interaction graph of co-worker rating- absolute, by experience and work engagement

Figure 15 shows the performance of the employee (co-worker rating-absolute) revealed that high work stressed employees showed a high performance when they are new to the organization (group I). But when the employees with more than 10 years of experience (Group II and Group III) perceived a high work stress, their performance was decreased. Employee with more than 20 years of experience in the job perceived a high work stress; they showed very poor performance than employees with low and average work stress. The figure suggests that, even though

the highly stressed employees perform well in the organization during the first years when they work for a long time, high stress becomes a negative factor which decreases the performance of the employees.

Table 42 shows the calculated cell means for co-worker rating- absolute by work engagement and work stress.

Table 42

Mean, Sd, and N of Co-worker Rating-Absolute by Work Engagement and Work Stress

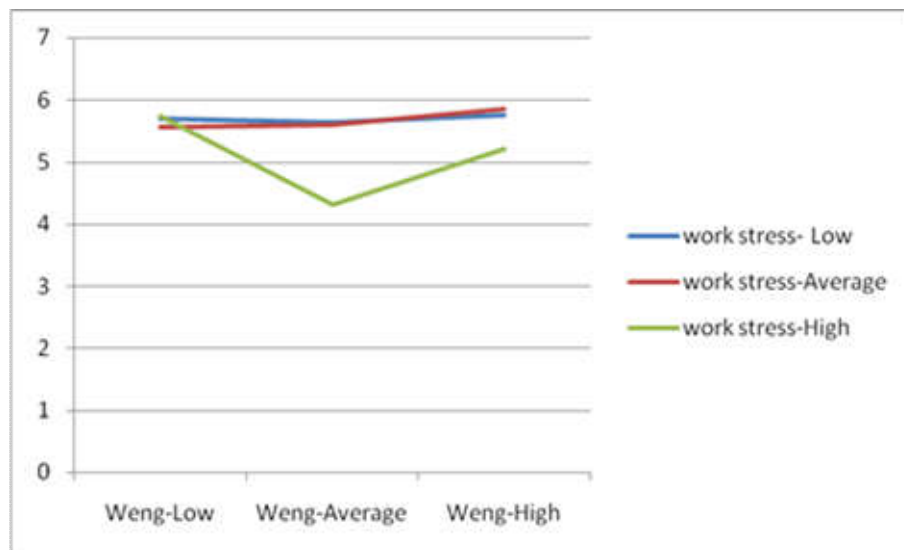
Variables		Work Stress			Total
Work Engagement	Group	Low	Average	High	
	Low	5.69	5.56	5.74	5.69
		35	18	43	96
		0.72	0.86	1.00	0.87
	Average	5.63	5.59	4.32	5.26
38		46	31	115	
0.94		1.99	1.49	1.665	
High	5.75	5.85	5.22	5.55	
	16	34	41	91	
	0.45	0.92	0.99	0.93	
Total		5.67	5.67	5.17	5.48
		89	98	115	302
		0.78	1.51	1.27	1.26

(Note: Cell order= Mean, N and SD)

Table 42 shows the cell mean score for co-worker rating-absolute by work stress and work engagement. While addressing the co-worker rating-absolute, a high mean score (Mean = 5.85) was observed for the interaction between average work stress and high work engagement. And at the same time a low mean score (Mean = 4.32) was observed for the interaction between high work stress and average work engagement. It suggests that when different levels of work engagement and work

stress interact with each other, the interaction creates a significant effect on performance of the employees.

To know more about the interaction between different levels on co-worker rating-absolute by work engagement and work stress, an interaction graph was drawn on the basis of cell means calculated and presented it as figure 16.



(Weng = work engagement)

Figure 16: Interaction graph of co-worker rating- absolute, by work engagement and work stress

Figure 16 shows the performance (co-worker rating-absolute) of the employees by work engagement and work stress. While considering the co-worker rating-absolute, the figure shows that low and average stressed employees maintains a good performance with different levels of work engagement. But when high stress interacts with different levels of work engagement, a lowest performance was observed with average work engagement. Various studies also reported that high stress significantly reduce the performance of the employees (Bashir & Ramay, 2010; Warraich, Ahmed, Nawaz & Khoso, 2014; Ahmed & Ramzan, 2013).

Substantiating to the studies, performance of the high stressed employees with average and high engaged employees was low when comparing to the performance average and low stressed employees.

Influence of Experience, Work engagement and Work Stress on Co-worker rating - Relative (3x3x3)

Co-worker rating-relative is the performance rating done by a co-worker about the participant's performance in the organization by comparing the participant's performance with others performance. To know whether there exists any significant main and interaction effect on co-worker rating-relative by experience, work engagement and work stress, three-way ANOVA was done and presented in the table 43.

Table 43

Summary of 3-way ANOVA of Co-worker rating- relative by Experience, Work engagement and Work Stress (3 x 3 x 3)

Source of variation	Type III Sum of Squares	Df	Mean Square	F
Experience	10.30	2	5.15	5.85**
Work engagement	2.39	2	1.19	1.36
Work stress	1.99	2	.99	1.13
Experience * Work engagement	16.55	4	4.14	4.69**
Experience * Work stress	35.30	4	8.83	10.02**
Work engagement * Work stress	13.14	4	3.28	3.73**
Experience * Work engagement * Work stress	25.83	6	4.30	4.89**
Error	244.00	277	.88	
Total	9440.00	302		

**p<0.01

Table 43 shows the main and interaction effect of experience, work engagement and work stress on the performance (co-worker rating-relative) of the employees. When the work experience, work engagement and work stress were taken together, a three-way significant interaction effect on co-worker rating-relative ($F = 4.89, p < .01$) was observed from the table. It suggests that, when the different levels of the selected variables interact with each other, the interaction has a significant influence over the performance (co-worker rating-relative) of the employees in the organization.

From the table, it was also observed that all of the two-way interactions were significant, which means that the interaction of experience and work engagement ($F = 4.69, p < .01$), experience and work stress ($F = 10.02, p < .01$) and work engagement and work stress ($F = 3.73, p < .01$) has a significant effect on performance (co-worker rating-relative) of the participants.

A significant difference in the co-worker rating-relative ($F = 5.85, p < .01$) was also observed between different levels of experience (group I, group II & group III) which suggests that experience has a significant influence over the performance of the employees. Several studies also found the significant role of work experience in determining the performance of the employees. Even though work engagement and work stress did not have significant main effect on performance of the employees, but they interact with the work experience and creates a significant effect on the performance of the employees.

To know more about the two-way interaction, the cell means were found for each interaction and presented in separate tables. Table 44 shows the cell means of co-worker rating-relative by experience, work engagement and work stress.

Table 44

Mean, Sd, and N of Co-worker rating-relative by Experience, Work Engagement and Work Stress

Work engagement		Work stress			Total
		Low	Average	High	
Group I (1-10 years)	Low	6.00 (1, -)	6.00 (14, 0.00)	5.94 (16, 0.77)	5.97 (31, 0.54)
	Average	5.00 (16, 0.00)	6.67 (9, 0.50)	6.00 (7, .000)	5.69 (32, 0.78)
	High	5.00 (1, -)	6.55 (11, 0.52)	6.00 (17, 0.00)	6.17 (29, 0.47)
	Total	5.06 (18, 0.24)	6.35 (34, 0.48)	5.98 (40, 0.48)	5.93 (92, 0.64)
Group II (11-20 years)	Low	4.94 (18, 0.80)	5.00 (4, 0.00)	5.82 (11, 0.98)	5.24 (33, 0.90)
	Average	5.67 (9, 1.00)	5.88 (34, 1.572)	6.00 (6, .000)	5.86 (49, 1.369)
	High	5.00 (15, 0.00)	5.38 (13, 1.56)	3.45 (22, 1.76)	4.42 (50, 1.64)
	Total	5.12 (42, 0.73)	5.69 (51, 1.51)	4.51 (39, 1.86)	5.16 (132, 1.51)
Group III (21-37 years)	Low	5.88 (16, .50)	-	5.25 (16, 1.18)	5.56 (32, 0.94)
	Average	7.00 (13, .00)	5.00 (3, .00)	4.06 (18, 0.24)	5.26 (34, 1.42)
	High	-	5.00 (10, 0.00)	6.00 (2, 0.00)	5.17 (12, 0.39)
	Total	6.38 (29, 0.77)	5.00 (13, 0.00)	4.69 (36, 1.04)	5.37 (78, 1.13)
Total	Low	5.40 (35, 0.81)	5.78 (18, 0.42)	5.65 (43, 1.02)	5.58 (96, 0.87)
	Average	5.84 (38, 1.00)	5.98 (46, 1.42)	4.87 (31, 0.99)	5.63 (115, 1.26)
	High	5.00 (16, 0.00)	5.65 (34, 1.18)	4.63 (41, 1.81)	5.08 (91, 1.48)
	Total	5.52 (89, 0.88)	5.83 (98, 1.21)	5.08 (115, 1.41)	5.45(302, 1.25)

(Note: Cell order= Mean, N and SD)

From table 44 shows performance of the employee's in respect to co-worker rating- relative and revealed that when different levels of experience, work engagement and work stress interact each other, the interaction of the low stress, average work engagement and group III level of experience (21-37 years) produce a

highest mean score (Mean = 7.00). The table also shows the lowest performance of the employee which is the product of the interaction between high stress, high work engagement and people with an experience of 11-20 years (Mean=3-45). The interaction results marks the importance of the level of stress in determining the performance of the employees. When the stress is low, the average engaged employee's works well, but when the work stress is high, the employees can't show a better performance even with high work engagement. Several studies also reported that stressed employees work less than high stressed employees. Siu (2003) found that job stressors and job performance were negatively related. Similarly, Rubina *et al.* (2008) also found a negative relationship between job stress and job performance.

As the analysis showed a two-way interaction of experience and work stress on co-worker rating-relative, the cell means were calculated to know more about the interaction. The calculated cell means are presented in the table 45.

Table 45

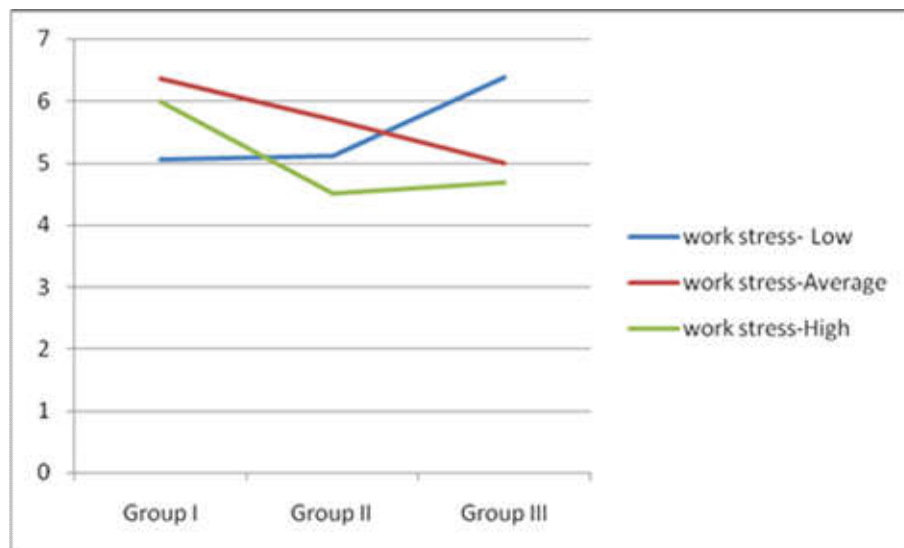
Mean, Sd, and N of Co-worker rating-relative by Experience and Work Stress

Variables		Work Stress			Total
Experience	Group	Low	Average	High	
	Group I (1- 10 years)	5.06 18 0.24	6.35 34 0.48	5.98 40 0.48	5.93 92 0.64
	Group II (11-20 years)	5.12 42 0.74	5.69 51 1.51	4.51 39 1.51	5.16 132 1.51
	Group III (21- 37 years)	6.38 29 0.68	5.00 13 0.00	4.69 36 1.04	5.37 78 1.13
	Total	5.52 89 0.88	5.83 98 1.21	5.08 115 1.41	5.45 302 1.25

(Note: Cell order= Mean, N and SD)

Table 45 gives the calculated cell means of co-worker-rating relative by experience and work stress. While addressing the co-worker rating, a high mean score (Mean = 6.38) was observed for the interaction between low work stress and group III experience level (21-37 years) compared to other cell means. And at the same time, the lowest mean score (Mean = 4.51) was for the combination of high stress with group II level of experience (11-20 years). The high and low mean scores on co-worker rating-relative suggests that, when the different levels of experience and work stress interacts each other, the interaction created some significant effect on the performance of the employees.

To know more about the interaction the calculated cell means of co-worker rating-relative by experience and work stress was plotted in the figure 17.



(Note: Group I =Experience 1-10 years, Group II =Experience 11 to 20 years, Group III = Experience 21 to 37 years)

Figure 17: Interaction graph of co-worker rating-relative, by experience and work stress

From the above figure, it can be seen that, while considering the co-worker rating-relative by experience and work stress the performance of the employee was found to be high when they are new to the organization (group I), but it declined when the employee had more than 10 years of experience in the work (Group II & Group III). It suggests that some sort of stress to the employee is essential in the first years of life as an employee for better performance but when the employee gain experience from the work, the low stress in the individual motivates the employees to work well.

To understand about the two-way interaction between work engagement and work stress on co-worker rating-relative, the cell means were calculated and presented in the table 46.

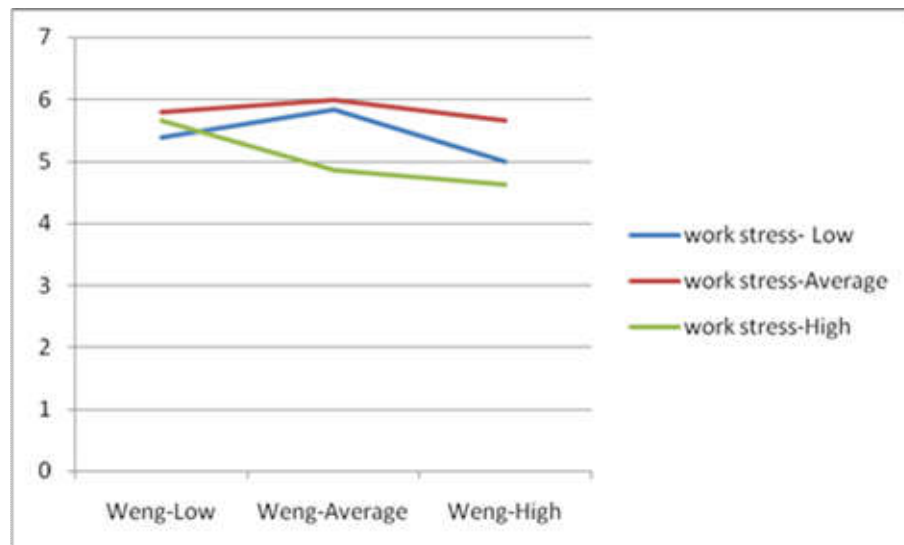
Table 46

Mean, Sd, and N of Co-worker Rating Relative By Work engagement and Work Stress

Variables		Work Stress			Total	
Work Engagement	Group	Low	Average	High		
	Low	Mean	5.40	5.78	5.65	5.58
		N	35	18	43	96
		SD	0.81	0.43	1.02	0.87
	Average	Mean	5.84	5.98	4.87	5.63
N		38	46	31	115	
SD		1.00	1.42	0.99	1.26	
High	Mean	5.00	5.65	4.63	5.08	
	N	16	34	41	91	
	SD	0.00	1.18	1.81	1.48	
Total		5.52	5.83	5.08	5.45	
		89	98	115	302	
		0.88	1.21	1.41	1.25	

(Note: Cell order= Mean, N and SD)

Table 46 shows the cell means of co-worker-rating relative by work engagement and work stress, a high mean score (Mean = 5.98) was observed when average work stress and average work engagement interacted. Low mean score was observed (Mean = 4.63) with the interaction of high work stress and high work engagement. The calculated cell means suggests that performance which is based in co-worker rating-relative may differ when different levels of work engagement and work stress interact with each other. To know more about the interaction, calculated cell means were plotted graphically and presented as figure 18.



(Note: Weng=work engagement)

Figure 18: Interaction graph of co-worker rating- relative by work stress and work engagement

The graphically plotted cell means of co-worker rating-relative by work stress and work engagement revealed a higher rating of performance to average stressed employees with any work engagement level (low, average or high). In the case of highly stressed employees, even high work engagement did not motivated

the employees to perform well in the organization. The figure also states that employee with average engaged employees maintain a consistent performance in the organization.

Influence of Experience, Work engagement and Work Stress on Supervisor rating

Supervisor rating is the rating of the supervisor about the performance of the participants. To know the influence of experience, work engagement and work stress of employees on supervisor rating, three-way ANOVA was executed and presented in the table 47.

Table 47

Summary of 3-way ANOVA of Supervisor rating by Experience, Work engagement and Work Stress (3 x 3 x 3)

Source of variation	Sum of Squares	Df	Mean Square	F
Experience	0.48	2	0.24	0.72
Work engagement	1.46	2	0.73	2.17
Work stress	1.28	2	0.64	1.89
Experience * Work engagement	7.96	4	1.99	5.89**
Experience * Work stress	2.75	4	0.68	2.03
Work engagement * Work stress	1.07	4	0.27	0.79
Experience * Work engagement * Work stress	1.06	6	0.17	0.52
Error	93.54	277	0.34	
Total	7773.00	302		

**p < .01

Table 47 shows the result of three-way ANOVA of supervisor rating by experience, work engagement and work stress. No significant three-way interaction was found on supervisor rating, which suggests that different levels of experience,

work engagement and work stress were not interacting each other, hence these variables did not have any effect on performance (supervisor rating) of the employees.

Even though no three-way interactions of experience, work stress and work engagement observed, two-way interaction between experience and work engagement found to be significant ($F=5.89$, $p < .01$) on performance (supervisor rating) of the employees. The analysis also found that there was no significant main effect of experience, work stress and work engagement on performance (supervisor rating). In conclusion the variables experience, work stress and work engagement did not have main or three-way interaction on supervisor rating except two-way of interaction between experience and work engagement. Therefore, cell means have calculated for supervisor rating by experience and work engagement and presented in the table 48.

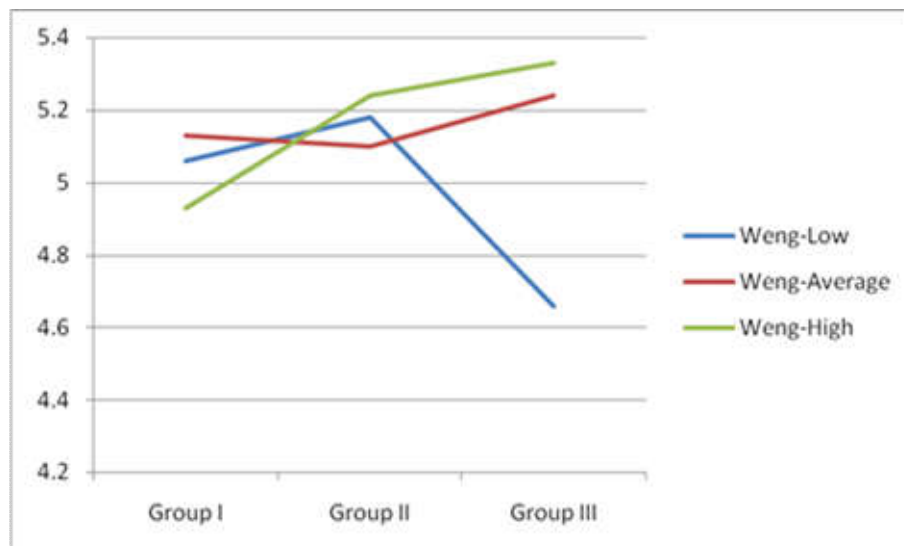
Table 48

Mean, Sd, and N of Supervisor rating by Experience and Work engagement

Variables		Work Engagement			Total
Experience	Group	Low	Average	High	
	Experience	Group I (1- 10 years)	5.06 31 0.25	5.13 32 336	4.93 29 0.53
Group II (11-20 years)		5.18 33 0.39	5.10 49 0.51	4.90 50 0.79	5.05 132 0.62
Group III (21- 37 years)		4.66 32 1.03	5.24 34 0.43	5.33 12 0.49	5.01 78 0.79
Total		4.97 96 0.67	5.15 115 0.44	4.97 91 0.69	5.04 302 0.61

(Note: Cell order= Mean, N and SD)

From the cell means table 48, it can be observed that when different levels of work engagement and experience considered together, both high and low mean score was observed in employees with group III level of experience along with different stress levels. A high mean score was (Mean = 5.33) observed when group III experience level interacted with high work engagement and a low mean score (Mean = 4.66) was observed when the same group of experience level (Group III) interacted with low work engagement. To know more about the interactions between experience and work engagement the calculated cell means were plotted in a graph and the details are presented in figure 19.



(Note: Weng=work engagement, Group I =Experience 1-10 years, Group II =Experience 11 to 20 years, Group III = Experience 21 to 37 years)

Figure 19: Interaction graph of supervisor rating by experience and work engagement

Figure 19 shows the performance (supervisor rating) of employees by experience and work engagement. From the figure, it can be observed that even though high work engaged employees are not performing well when they were new to the work, they showed a better performance than employees with low and average

work engagement when they attain an experience of 11-20 years (Group II) or 21-37 years (Group III) of experience. The experience did not make them efficient if they do not have high work engagement. Mokaya and Kipyegon (2014) stated that engagement is a very powerful factor which directs the employee towards superior performance. Here in the organization the work engagement may act as a powerful factor in the individual which may motivate the employee to work well. Low performance of high engaged employees during first years of life as an employee may be due to some other problems, which is to be addressed.

Influence of Experience, Work engagement and Work Stress on Performance

Performance is the average of all the five ratings (self-rating-absolute, self-rating- relative, co-worker rating-absolute, co-worker rating-relative and supervisor rating) which indicate the performance of the employee in the organization. To know the main and interaction effect of experience, work engagement and work stress on performance, three-way ANOVA was computed and presented in the table 49.

Table 49

Summary of 3-way ANOVA of Performance by Experience, Work engagement and Work Stress (3 x 3 x 3)

Source of variance	Sum of Squares	Df	Mean Square	F
Experience	6.09	2	3.05	7.94**
Work engagement	1.99	2	0.99	2.59
Work stress	2.22	2	1.11	2.89
Experience * Work engagement	10.14	4	2.54	6.61**
Experience * Work stress	21.82	4	5.46	14.22**
Work engagement * Work stress	7.64	4	1.91	4.98**
Experience * Work engagement * Work stress	21.74	6	3.62	9.44**
Error	106.30	277	0.38	
Total	9072.56	302		

**p<.01

Table 49 shows the main and interaction effect of experience, work engagement and work stress on performance (average of five ratings). From the table, it can be seen that there exist three-way interaction effect ($F= 9.44$, $p< .01$) which suggests that the variables experience, work engagement and work stress jointly influencing the performance of the employees.

Along with three-way interaction, all the two-way interactions were found to be significant; viz, experience and work engagement ($F= 6.61$, $p< .01$), experience and work stress ($F= 14.22$, $p< .01$), and work engagement with work stress ($F= 4.98$, $p< .01$). The two-way interaction between different levels suggests the importance of work experience, work engagement and work stress in organizational research.

A significant main effect of work experience ($F= 7.94$, $p< .01$) on performance of the employees was also found. But work engagement and work stress did not any individual effect on performance. But a two-way interaction between work engagement and work stress ($F=4.98$, $p< .01$), experience and work engagement ($F=6.61$, $p< .01$) and experience and work stress ($F=14.22$, $p< .01$) was observed. To know more about the three-way interaction of work experience, work engagement and work stress on performance, cell means of performance were calculated and presented in the table 50.

Table 50

Mean, Sd, and N of Performance By Experience, Work engagement and Work stress

Experience	Work Engagement	Work stress			Total
		Low	Average	High	
Group I (1-10 years)	Low	6.00 (1, -)	6.02 (14, 0.67)	5.73 (16, 0.40)	5.87 (31, 0.32)
	Average	5.15 (16, 0.1)	6.33 (9, 0.33)	5.78 (7, 0.09)	5.62 (32, 0.55)
	High	5.25 (1, -)	6.205 (11, 0.44)	5.64 (17, 0.12)	5.84 (29, 0.41)
	Total	5.21 (18, 0.23)	6.16 (34, .32)	5.70 (40, 0.27)	5.77 (92, 0.45)
Group II (11-20 years)	Low	5.19 (18, 0.41)	4.75 (4, 0.00)	5.409 (11, 0.77)	5.21 (33, 0.56)
	Average	5.25 (9, 0.58)	5.72 (34, 1.01)	5.750 (6, 0.00)	5.64 (49, 0.88)
	High	5.20 (15, 0.14)	5.81 (13, 0.84)	4.534 (22, 1.00)	5.06 (50, 0.94)
	Total	5.21 (42, 0.38)	5.67 (51, 0.95)	4.968 (39, 0.98)	5.31 (132, 0.87)
Group III (21-37 years)	Low	5.44 (16, 0.46)	-	4.98 (16, 1.15)	5.21 (32, 0.89)
	Average	6.56 (13, 0.21)	5.00 (3, 0.00)	3.84 (18, 0.29)	4.98 (34, 1.32)
	High	-	5.30 (10, .1054)	6.250 (2, 0.00)	5.45 (12, 0.38)
	Total	5.94 (29, 0.67)	5.23 (13, .16)	4.48 (36, 1.05)	5.15 (78, 1.05)
Total	Low	5.33 (35, 0.46)	5.74 (18, 0.54)	5.37 (43, 0.88)	5.42 (96, 0.70)
	Average	5.66 (38, 0.73)	5.79 (46, 0.93)	4.65 (31, 0.99)	5.44 (115, 1.00)
	High	5.20 (16, 0.13)	5.78 (34, 0.67)	5.079 (41, 0.95)	5.365 (91, 0.82)
	Total	5.44 (89, 0.58)	5.78 (98, 0.78)	5.074 (115, 0.97)	5.41 (302, 0.86)

(Note: Cell order= Mean, N and SD)

Table 50, the cell means of performance of the employees by their experience, work engagement and work stress were given. Different levels of experience, work engagement and work stress taken together, a high mean score (Mean = 6.56) was observed when employees with an experience of 21-37 years (Group III) with an average work engagement and low work stress combination. A

low mean score (Mean = 3.85) was observed among people with an experience of 21-37 years (Group III) in average work engagement and high work stress combination. The results suggest that different levels of stress interact with experience and work engagement and produce a significant effect on performance of the employees. Some researchers reported that stress induces different problems among individual employees (Ranjit & Mahespriya, 2012; Lim, Bogossian, & Ahern, 2010). Hence work stress will influence their work engagement even the employees who has a much experience. This may be one reason why employee with lower stress showed a higher performance and high stress showed a high performance.

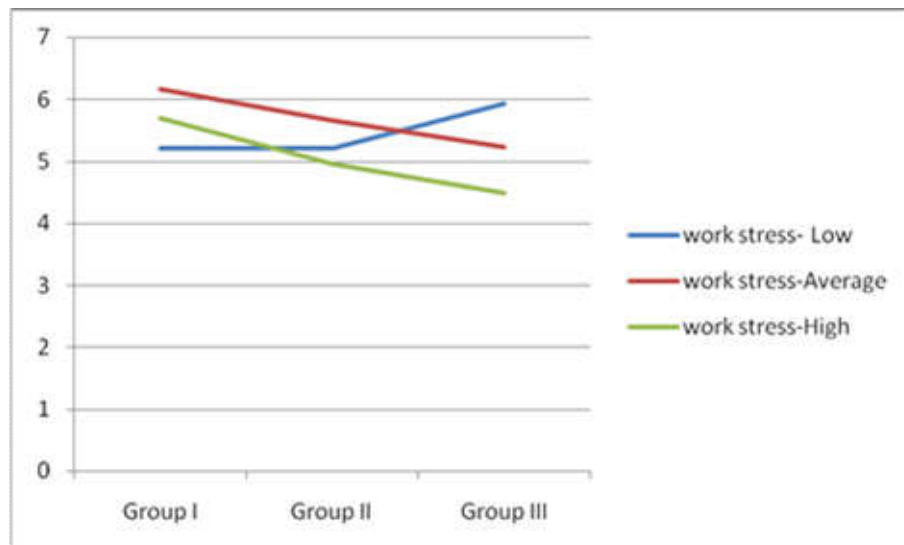
Regarding the two-way interactions, the cell means for the interactions were calculated for each combination except with the interaction of experience with work engagement, because it was already presented with the previous combination (table 29). The calculated cell means found for the two-way interaction between work stress and experience on performance of the employee is presented in the table 51.

Table 51
Mean, Sd, and N of Performance by Experience and Work stress

Variables		Work Stress			Total
Experience	Group	Low	Average	High	
	Experience	Group I (1- 10 years)	5.20	6.16	5.706
18			34	40	92
0.23			0.32	0.27	0.44
Group II (11-20 years)		5.208	5.66	4.96	5.31
		42	51	39	13
		0.38	0.95	0.98	0.87
Group III (21- 37 years)		5.94	5.23	4.48	5.15
		29	13	36	78
		0.67	0.16	1.05	1.05
Total		5.44	5.78	5.07	5.41
		89	98	115	302
		0.58	0.78	0.97	0.86

(Note: Cell order= Mean, N and SD)

Table 51 shows the cell means of performance by experience and work stress. From the table, high mean score (Mean = 6.16) was observed in average work stress with an experience of 1-10 years (Group I) while comparing with other cell means. But low mean score (Mean = 4.48) was observed people with high stress with an experience of 21-37 years (Group III) combination. It suggests that different levels of experience and work stress interact with each other on performance of the workers. To know where the interaction takes place, the calculated cell means were graphically plotted and presented in the figure 20.



Note: Weng=work engagement, Group I =Experience 1-10 years, Group ii =Experience 11 to 20 years, Group III = Experience 21 to 37 years)

Figure 20: Interaction graph of performance rating by experience and work stress.

The interaction graph which shows the performance of employees by work experience and work stress revealed that even though high stressed employees showed a good performance at their initial years in the industry, their performance were found to be very low when they attained more than 10 years of experience (group II and Group III). The results suggests that, high stressed employees shows a

better performance during the first years of life in the organization, but when the employee have a long experience, their performance goes down. It reminds the results shown by different scholars who found negative correlation between work stress and performance (Warraich, Ahmed, Nawaz, & Khoso, 2014; Rubina *et al.*, 2008; Siu, 2003), where the low stressed employees shown high performance and high stressed employees shown low performance.

To know the interaction of work engagement and work stress on performance, the cell means were found on performance rating and presented in the table 52.

Table 52

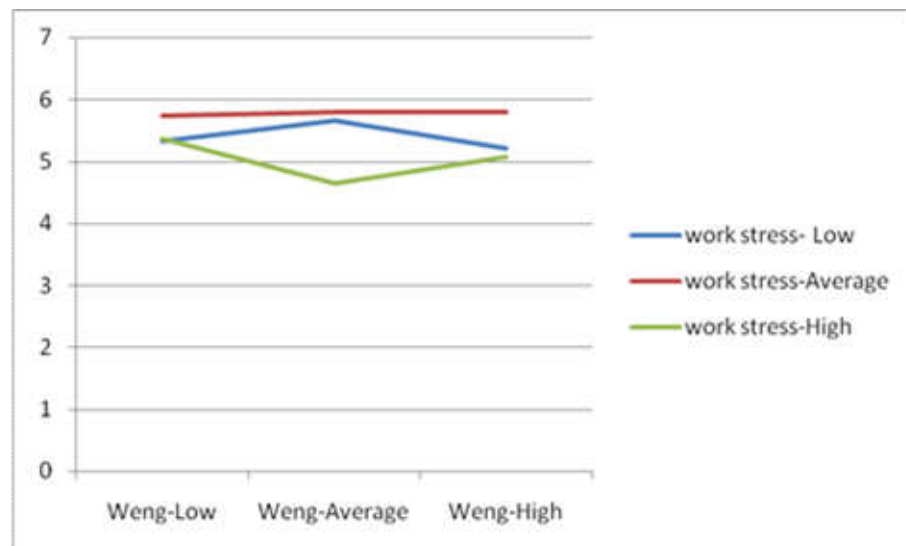
Mean, Sd, and N of Performance by Work engagement and Work stress

Variables		Work Stress			Total
Work Engagement	Group	Low	Average	High	
	Low		5.32	5.73	5.37
		35	18	43	96
		0.45	0.54	0.88	0.70
Average		5.65	5.79	4.65	5.44
		38	46	31	115
		0.72	0.93	0.99	1.00
High		5.20	5.78	5.07	5.36
		16	34	41	91
		0.13	0.67	0.95	0.82
Total		5.44	5.78	5.07	5.41
		89	98	115	302
		0.58	0.78	0.97	0.86

(Note: Cell order= Mean, N and SD)

Table 52 shows the cell means for the performance rating by work engagement with work stress. From table, it can be seen that a high mean score (Mean = 5.79) can be seen in the combination of average work stress with average work engagement. A low mean score (Mean = 4.65) was found when high stress

with average work engagement were considered. To know more about the interaction between different levels of work stress and work engagement, the cell means were calculated, plotted in a graph and presented in figure 21.



(Note; Weng = work engagement)

Figure 21: Interaction graph of performance rating by work engagement and work stress

Figure 21 gives the status of performance of the employees by work engagement and work stress. A high performance rating was observed for average engaged employees than low and high engaged employees irrespective of work engagement level they have. The result is consistent with studies of different scholars who reported a significant negative correlation between stress and performance (Rubina *et al.*, 2008; Siu, 2003) where the low stressed employees shown a higher performance and high stressed employees shown a low performance.

This section discusses the analysis of three-way ANOVA of performance by experience, organizational culture and work stress. As the performance of the

employee comprised of five ratings, investigator computed ANOVA on five performance ratings, viz; self-rating-absolute, self-rating-relative, co-worker rating-absolute, co-worker rating-relative and supervisor rating.

Influence of experience, organizational culture and work stress on self-rating-absolute

Self-rating-absolute is the evaluation of performance which is rated by the participants. To know the significant main and interaction effect of experience, work engagement and work stress on self-rating-absolute, three-way ANOVA was performed. The results of the analysis are presented in table 53.

Table 53

Summary of 3-way ANOVA of Self rating-absolute by Experience, Organizational culture and Work Stress (3 x 2 x 3)

Source of variance	Sum of Squares	df	Mean Square	F
Experience	13.19	2	6.59	9.79**
Organizational culture	4.32	1	4.32	6.42**
Work stress	21.57	2	10.78	16.01**
Experience * Organizational culture	4.00	2	2.00	2.97*
Experience * Work stress	23.38	4	5.84	8.68**
Organizational culture * Work stress	64.18	2	32.09	47.65**
Experience * Organizational culture * Work stress	26.84	3	8.95	13.28**
Error	191.96	285	0.67	
Total	10396.00	302		

* $p < .05$. ** $p < .01$.

Table 53 gives the results of three-way ANOVA on self-rating-absolute by experience, organizational culture and work stress, revealed a significant three-way interaction ($F = 13.28$, $p < .01$). The observed three-way interaction effect suggests

that when the variables experience, organizational culture and work stress taken together, the interaction between different levels of these variables create significant difference in the performance of employees.

It was also observed from the result (table 53) that all the two-way interactions were significant that is, between experience and work stress ($F = 8.68$, $p < .01$), experience and organizational culture ($F = 2.97$, $p < .05$), and work stress and organizational culture ($F = 47.65$, $p < .01$). The main effect of experience ($F = 9.79$, $p < .01$), organizational culture ($F = 6.42$, $p < .01$) and work stress ($F = 16.01$, $p < .01$) was also found to be significant on self-rating-absolute of employees.

The main and interaction effect of experience, organizational culture and work stress on self-rating-absolute suggests that these variables have an important role in determining the performance of industrial employees. Various scholars also reported the influence of experience, organizational culture and work stress on performance of the employees (eg. Manikandan, 2010; Perrin, 2008; Bashir & Ramay, 2010).

To know more about the three-way interaction effect, the cell means of self-rating- absolute by experience, organizational culture and work stress were calculated and the mean scores are given in table 54.

Table 54

Mean, Sd, and 'n' of Self-Rating-absolute by Experience, Organizational culture and Work Stress

Experience	Organizational culture	Work stress			Total
		Low	Average	High	
Group I (1-10 years)	Weak	5.53 (17, 0.51)	6.11 (18, 0.32)	6.21 (14, 0.42)	5.94 (49, 0.51)
	Strong	7.00 (1, 0.00)	6.94 (16, 0.25)	5.69 (26, 0.47)	6.19 (43, 0.73)
	Total	5.61 (18, 0.61)	6.50 (34, 0.51)	5.88 (40, 0.51)	6.05 (92, 0.63)
Group II (11-20 years)	Weak	4.95 (20, 0.83)	5.81 (31, 1.35)	5.96 (23, 0.56)	5.62 (74, 1.09)
	Strong	5.77 (22, 1.54)	6.85 (20, 0.36)	5.63 (16, 0.50)	6.10 (58, 1.13)
	Total	5.38 (42, 1.31)	6.22 (51, 1.19)	5.82 (39, 0.56)	5.83 (132, 1.13)
Group III (21-37 years)	Weak	5.00 (16, 0.00)	-	6.13 (15, 1.12)	5.55 (31, 0.96)
	Strong	6.92 (13, 0.28)	5.77 (13, 0.44)	3.52 (21, 1.12)	5.09 (47, 1.68)
	Total	5.86 (29, 0.99)	5.77 (13, 0.44)	4.61 (36, 1.71)	5.27 (78, 1.45)
Total	Weak	5.15 (53, 0.63)	5.92 (49, 1.09)	6.08 (52, 0.74)	5.71 (154, 0.93)
	Strong	6.22 (36, 1.33)	6.59 (49, 0.61)	4.95 (63, 1.26)	5.80 (148, 1.33)
	Total	5.58 (89, 1.11)	6.26 (98, 0.94)	5.46 (115, 1.19)	5.75 (302, 1.14)

(Note: Cell order= Mean, 'n' and SD)

Table 54 shows the cell means of different levels of experience, organizational culture and work stress on self-rating absolute (performance) revealed a high mean score (Mean = 7.00) in the combination of the group I (1-10 years) of experience, strong organizational culture and average work stress. The low mean score (Mean = 3.52) was observed when group III (21-37 years) of experience, strong organizational culture and high work stress interacted.

The cell means suggests that when the employee new to the organization perceive a strong organizational culture and low stress help them to perform well in

the organization. Supporting to the result, earlier studies reported that an employee who is new to the organization (Bigliardi, Dormio, Galati & Schiuma, 2012) perceive their organizations culture as strong (Sokro, 2012; Uddin, Luv, & Hossian, 2012) and experience low stress (Siu, 2003) performed well in the organization. The result also revealed that when the strong organizational culture interacts with high stress of employees who have more than 20 years' experience in the work, show poor performance. It means that employee with strong organizational culture and long years of experience may bring fatigue among them.

Besides the three-way interaction, the ANOVA also revealed two-way interactions. Therefore cell means were calculated for self-rating absolute for the two-way interaction of experience with organizational culture and organizational culture with work stress. Here the two-way interaction of experience with work stress have not been discussed because it is already discussed in earlier combinations of self-rating- absolute (table 33).

The calculated cell means of self-rating-absolute by organizational culture and work stress are presented in the table 55.

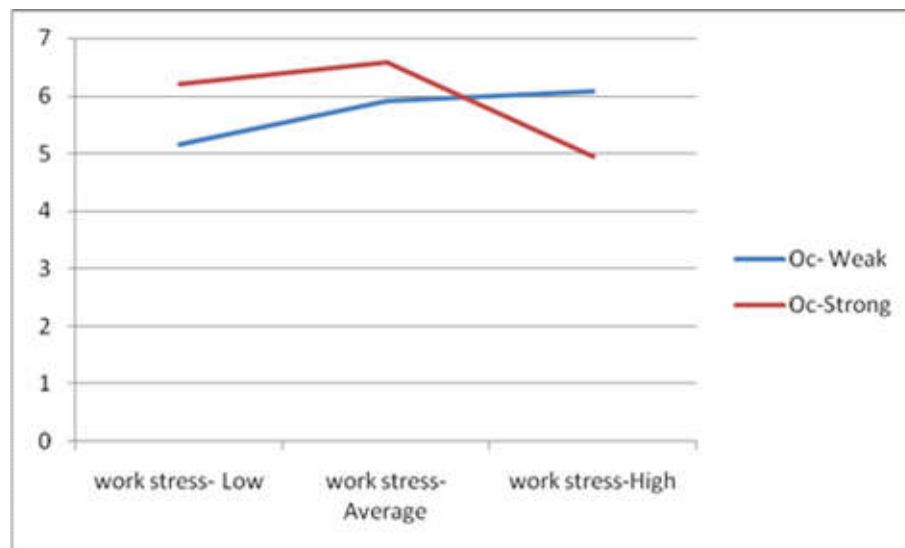
Table 55

Mean, Sd, and N of Selfrating -absolute by Organizational culture and Work Stress

Variable		Work stress			Total
Group		Low	Average	High	
Organizational culture	Weak	5.15 (53, 0.63)	5.92 (49, 1.09)	6.08 (52, 0.74)	5.71 (154, 0.93)
	Strong	6.22 (36, 1.33)	6.59 (49, 0.61)	4.95 (63, 1.26)	5.80 (148, 1.33)
Total		5.58 (89, 1.11)	6.26 (98, 0.94)	5.46 (115, 1.19)	5.75 (302, 1.14)

(Note: Cell order= Mean, 'n' and SD)

Table 55 shows the cell means of self-rating absolute of the employees by organizational culture and work stress. While comparing with all the cell means observed, a high mean score (Mean = 6.59) was observed for the interaction between average work stress and strong organizational culture and a low performance (Mean = 4.95) was observed for the interaction between high work stress and strong organizational culture. To know more about the interaction of organizational culture with work stress, an interaction graph was drawn based on the calculated cell means and presented in figure 22.



(Note: Oc- Organizational culture)

Figure 22: Interaction graph of Self rating-absolute by Organizational culture and Work Stress

When the self-rating-absolute was considered, it was observed that both the low stressed and average stressed employees in a strong organizational culture show a good performance than weak organizational culture. Previous studies suggested that employees in strong culture incorporate the same sort of beliefs and values related with the organization and therefore they work to achieve the organizational

goals (Deal & Kennedy, 1982; Karlsen, 2011). This may be the reason why employees who perceive their culture as strong with average or low stress performed well in the organization. But when the employees with strong organizational culture experienced high stress from the work and their performance were seems to be decreased. Warraich, Ahmed, Nawaz, and Khoso (2014) described that stress which arise from work setting reduces the efficiency of employees. The low performance of the employees in the strong culture may be interpreted from the negative effect of high stress on performance.

The cell means for two-way interaction between experience and organizational culture was calculated and presented in the table 56.

Table 56

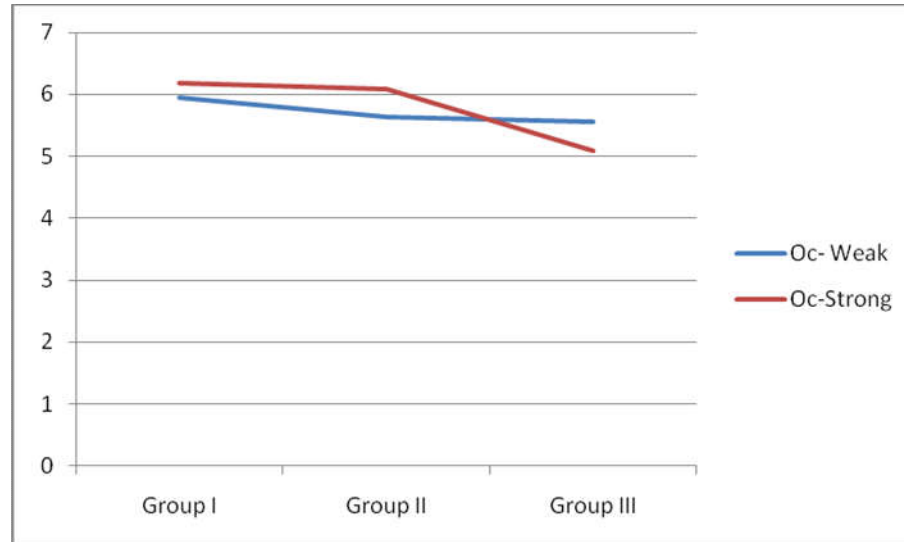
Mean, Sd, and N of Selfrating-Absolute by Experience and Organizational culture

Variable		Experience			Total
Organizational culture	Group	Group I (1-10 years)	Group II (11-20 years)	Group III (21-37 years)	
	Weak	5.94 (49, 0.51)	5.62 (74, 1.09)	5.55 (31, .96)	5.71 (154, 0.93)
	Strong	6.19 (43, 0.73)	6.10 (58, 1.13)	5.09 (47, 1.67)	5.80 (148, 1.33)
Total		6.05 (92, 0.63)	5.83 (132, 1.13)	5.27 (78, 1.45)	5.75 (302, 1.14)

(Note: Cell order= Mean, 'n' and SD)

While going through the cell means of self-rating-absolute - an indicator of performance - a high mean score (Mean = 6.19) was observed in the combination of strong organizational culture and employees with an experience 1-10 years. But when the strong organizational culture and employees with an experience of 21 to 37 years showed low mean score (Mean = 5.09) compared to other combinations. To

know more about the interaction between organizational culture and experience, the calculated cell means were graphically plotted and presented in figure 23.



(Note: Group I = Experience 1-10 years, Group II = Experience 11 to 20 years, Group III = Experience 21 to 37 years, Oc- Organizational culture)

Figure 23: Interaction graph of Self rating-Absolute by Experience and Organizational culture.

From the figure 23, it can be seen that, employees with strong and weak organizational culture perform well when they are new to the organization. Consistent with the study of Bigliardi, Dormio, Galati, and Schiuma (2012), employee who is new to the organization showed a good performance in the work place. But after few years of work in the organization (11 years and above-in this study), their performance seems to be coming downwards. In the case of self-rating-absolute, a drastic decrease in performance was observed when the employees having more than 21 years of experience with the perception of strong organizational culture.

Influence of experience, organizational culture and work stress on self-rating-relative

Self-rating relative is the performance rating marked by employee by comparing them with other employees in the organization. To know the main and interaction effect of experience, organizational culture and work stress on self-rating relative, three-way ANOVA was carried out and the results are presented in table 57.

Table 57

Summary of 3-way ANOVA of Self rating – Relative by Experience, Organizational culture and Work Stress (3 x 2 x 3)

Source of variance	Sum of Squares	df	Mean Square	F
Experience	9.41	2	4.70	7.32**
Organizational culture	0.22	1	0.22	0.32
Work stress	76.73	2	38.36	59.9**
Experience * Organizational culture	1.33	2	0.67	1.04
Experience * Work stress	35.27	4	8.82	13.78**
Organizational culture * Work stress	9.81	2	4.90	7.66**
Experience * Organizational culture * Work stress	40.64	3	13.55	21.18**
Error	182.32	285	0.64	
Total	10172.00	302		

**p< .01.

Table 57 shows the result of three-way ANOVA of self-rating relative by experience, organizational culture and work stress and found a significant three-way interaction effect (F = 21.18, p< .01). The significant three-way interaction suggests that, when different levels of experience, organizational culture and work stress interacts each other, the interaction produce some effect on the performance (self-rating-relative) of the employees.

The analysis also revealed the significant two-way interaction effect of experience with work stress ($F = 13.78, p < .01$) and organizational culture with work stress ($F = 7.66, p < .01$) on self-rating relative. The result suggests that when the self-rating relative taken as measure for rating performance, the variables experience, organizational culture do have a significant effect on the performance of employees. A significant difference in performance rating (self-rating relative) also found between different levels of experience ($F = 7.32, p < .01$) and work stress ($F = 59.9, p < .01$) on this combination.

The main and interaction effect suggests that experience, organizational culture and work stress has an important role in determining the performance of the employees. The role of experience, organizational culture and work stress in determining the performance of the employees was also reported by other scholars who conducted studies in this area (Ng & Feldman, 2010; Bakker, Demerouti, & Verbeke, 2004; Ahmed & Ramzan, 2013). To know more about the interaction between different levels of experience, organizational culture and work stress, cell means were calculated for each significant interaction.

Based on three-way interaction of experience, organizational culture and work stress on self-rating relative, cell means were found and presented in the table 58.

Table 58

Mean, Sd, and N of Self-Rating- Relative by Experience, Organizational culture and Work Stress

Experience	Organizational culture	Work stress			Total
		Low	Average	High	
Group I (1-10 years)	Weak	5.59 (17, 0.61)	7.00 (18, 0.00)	5.71 (14, 0.46)	6.14 (49, 0.79)
	Strong	5.00 (1, -)	6.94 (16, 0.25)	5.69 (26, 0.47)	6.14 (43, 0.74)
	Total	5.56 (18, 0.61)	6.97 (34, 0.17)	5.70 (40, 0.46)	6.14 (92, 0.76)
Group II (11-20 years)	Weak	5.25 (20, 1.25)	6.29 (31, 0.97)	5.26 (23, 0.91)	5.69 (74, 1.14)
	Strong	4.95 (22, 0.57)	6.85 (20, 0.36)	5.44 (16, 1.21)	5.74 (58, 1.12)
	Total	5.10 (42, 0.96)	6.51 (51, .83)	5.33 (39, 1.03)	5.71 (132, 1.13)
Group III (21-37 years)	Weak	4.94 (16, 0.25)	-	5.13 (15, 1.12)	5.03 (31, 0.79)
	Strong	6.92 (13, 0.28)	5.77 (13, 0.44)	3.62 (21, 1.36)	5.13 (47, 1.71)
	Total	5.83 (29, 1.04)	5.77 (13, 0.44)	4.25 (36, 1.46)	5.09 (78, 1.42)
Total	Weak	5.26 (53, 0.88)	6.55 (49, 0.84)	5.35 (52, 0.90)	5.70 (154, 1.05)
	Strong	5.67 (36, 1.07)	6.59 (49, 0.61)	4.94 (63, 1.39)	5.66 (148, 1.31)
	Total	5.43 (89, 0.98)	6.57 (98, 0.73)	5.12 (115, 1.21)	5.68 (302, 1.18)

(Note: Cell order= Mean, 'n' and SD)

Table 58 shows the cell means of self-rating-relative when different groups of experience, organizational culture and work stress interacted. The calculated cell means on self-rating- relative revealed a high mean score (Mean = 7.00) for employees having an experience of 1-10 years of experience, weak organizational culture and average work stress. In the same combination, a low mean score (Mean = 3.62) was observed when the group III (21-37 years) of experience with strong organizational culture and high work stress stage.

The high performance suggests that even with weak organizational culture, an employee who is new to the organization with average stress, perform well in the organization. At the same time employee with strong organizational culture and long experience perform low, if they are experiencing a high stress. It suggests that when the different levels interact with low and high stress, it significantly affect the performance of employees. The role of work stress in determining the performance was mentioned by other scholars in this field. The present result supports the notion that, only if the stress at work exceeds the limit, it negatively affects the performance of employee. Supporting to this, Schaufeli and Bakker (2004) expressed that even when the employees are exposed to stress related factors, they enjoy pleasure in dealing with these stressors. But here, the stress at work exceeded the limit and reached high stress which influenced the performance of the employee negatively.

Besides the three-way interaction ANOVA also reported significant two-way interaction of organizational culture with work stress and experience with work stress. Cell means for the interaction between experience and work stress is not reported here to avoid repetition (see table 37). The cell means of self-rating-relative by organizational culture and work stress were calculated and presented in the table 59.

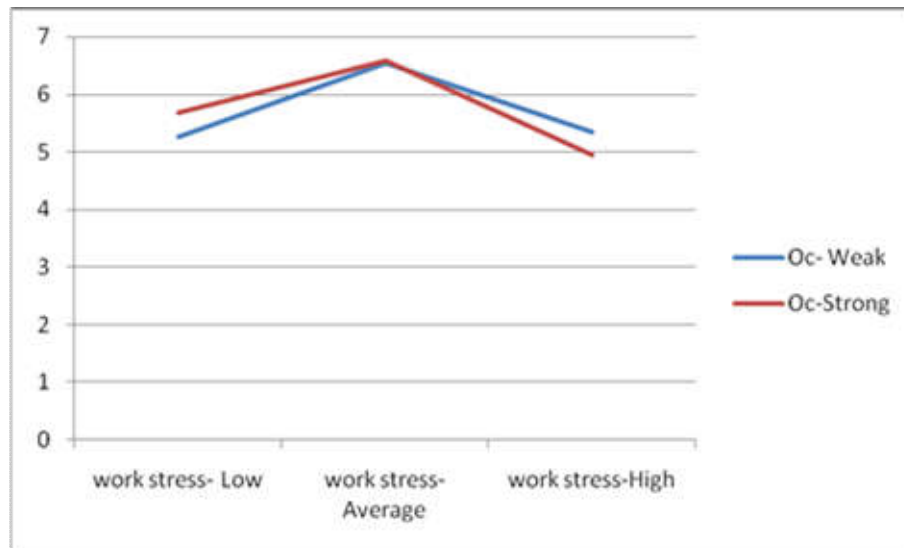
Table 59

Mean, Sd, and N of Self-Rating- Relative by Organizational culture and Work Stress

Variable		Work stress			Total
Organizational culture	Group	Low	Average	High	
	Weak	5.26 (53, 0.88)	6.55 (49, 0.84)	5.35 (52, 0.95)	5.70 (154, 1.04)
	Strong	5.67 (36, 1.07)	6.59 (49, 0.61)	4.94 (63, 1.39)	5.66 (148, 1.31)
Total		5.43 (89, 0.98)	6.57 (98, 0.73)	5.12 (115, 1.21)	5.68 (302, 1.18)

(Note: Cell order= Mean, 'n' and SD)

Table 59 shows the cell means of self-rating-relative by organizational culture and work stress. From the table 59, it can be seen that when the average work stress interacted with strong organizational culture, a high mean score (Mean = 6.59) was observed and when the strong organizational culture interacted with high work stress, a low mean score (Mean = 4.94) observed. The observed difference in the cell means suggests that, when different groups of organizational culture and work stress interact, the performance of the employee may differ. To know more about the interaction between organizational culture and work stress, the calculated cell means were graphically plotted and presented in figure 24.



(Note: Oc- Organizational culture)

Figure 24: Interaction graph of self-rating relative by Organizational culture and Work Stress

From figure 24, it can be observed that performance (self-rating-relative) by organizational culture and work stress of the group who has average work stress was higher than low work stressed and high work stressed group. When the weak and strong organizational culture interacts with low and high stress, the interactions were resulted in lower performance. The figure shows the importance of maintaining the work stress in an optimum level for good organizational performance. When the employee experience average work stress, they may searching for pleasure in that (Schaufeli & Bakker, 2004), that may be the reason why employees performed well in the organization. But when the work stress increased to higher level, even the employees with strong organizational culture were not able to cope up with stress and showed lower performance.

Influence of experience, organizational culture and work stress on Co-worker rating–Absolute

Co-worker rating-absolute is the rating done by the co-worker about the performance of the participant. To know the interaction effects of experience, organizational culture and work stress on co-worker rating-absolute, three-way ANOVA was performed and the results are presented in the table 60.

Table 60

Summary of 3-way ANOVA of Co-worker rating- absolute by Experience, Organizational culture and Work Stress (3 x 2 x 3)

Source of variance	Sum of Squares	df	Mean Square	F
Experience	9.83	2	4.92	4.86**
Organizational culture	1.54	1	1.54	1.52
Work Stress	14.42	2	7.21	7.13**
Experience * Organizational culture	9.85	2	4.92	4.87**
Experience * Work Stress	38.48	4	9.62	9.52**
Organizational culture * Work Stress	7.85	2	3.92	3.88*
Experience * Organizational culture * Work Stress	27.34	3	9.11	9.01**
Error	288.06	285	1.01	
Total	9558.00	302		

*p< .05. **p< .01.

Table 60 shows the main and interaction effect of experience, organizational culture and work stress on co-worker rating-absolute. A significant three-way interaction (F = 9.01, p<.01) of the selected variables on co-worker rating-absolute was observed from the analysis which suggests that, different levels of experience, organizational culture and work stress interacts significantly and this may bring changes in the performance of the employees.

Besides the three-way interaction, all the two-way interactions in this combination on co-worker rating-absolute were also found to be significant. That is, experience with organizational culture ($F = 4.87, p < .01$), experience with work stress ($F = 9.52, p < .01$) and organizational culture with work stress ($F = 3.88, p < .01$). Moreover, except organizational culture, experience ($F = 4.86, p < .01$) and work stress ($F = 7.13, p < .01$) showed a significant effect on the variable co-worker rating-absolute.

The main and interaction effect of experience, organizational culture and work stress on co-worker rating-absolute reveals the role of these variables in defining the performance of the employees. Researchers like Ng and Feldman (2010), Lee and Yu (2004), Siu (2003), etc were also reported the influence of the experience, organizational culture and work stress on performance of the employees. In the present study the result also found an interaction effect between experience, organizational culture and work stress.

To know more about the interaction, the cell means of co-worker rating-absolute by experience and organizational culture was calculated and the results are presented in table 61.

Table 61

Mean, Sd, and N of Co-worker Rating- Absolute by Experience, Organizational culture and Work Stress

Experience	Organizational culture	Work stress			Total
		Low	Average	High	
Group I (1-10 years)	Weak	5.06 (17, 0.24)	6.11 (18, 0.32)	5.93 (14, 0.28)	5.69 (49, 0.55)
	Strong	6.00 (1, -)	6.62 (16, 0.50)	6.15 (26, 0.37)	6.33 (43, 0.47)
	Total	5.11 (18, 0.32)	6.35 (34, 0.48)	6.08 (40, 0.35)	5.99 (92, 0.60)
Group II (11-20 years)	Weak	5.05 (20, 0.22)	5.71 (31, 1.16)	4.61 (23, 0.94)	5.19 (74, 1.03)
	Strong	5.86 (22, 0.71)	4.90 (20, 2.71)	5.87 (16, 0.81)	5.53 (58, 1.74)
	Total	5.48 (42, 0.67)	5.39 (51, 1.94)	5.13 (39, 1.08)	5.34 (132, 1.39)
Group III (21-37 years)	Weak	5.88 (16, 0.50)	-	5.13 (15, 1.12)	5.52 (31, .92)
	Strong	6.85 (13, 0.55)	5.00 (13, 0.00)	3.57 (21, 1.28)	4.87 (47, 1.62)
	Total	6.31 (29, 0.71)	5.00 (13, 0.00)	4.22 (36, 1.41)	5.13 (78, 1.42)
Total	Weak	5.30 (53, 0.50)	5.86 (49, 0.96)	5.12 (52, 1.02)	5.42 (154, 0.90)
	Strong	6.22 (36, 0.79)	5.49 (49, 1.90)	5.22 (63, 1.45)	5.55 (148, 1.54)
	Total	5.67 (89, 0.78)	5.67 (98, 1.51)	5.17 (115, 1.22)	5.48 (302, 1.26)

(Note: Cell order= Mean, 'n' and SD)

The cell mean table 61 shows the interaction cell means of different groups of experience, organizational culture and work stress on co-worker rating-absolute. When the co-worker rating-absolute taken into consideration as a measure of performance rating, it was observed that, the interaction of group III (21-37 years) of experience with strong organizational culture and low work stress resulted in high mean score (Mean = 6.85). A low mean score (Mean = 3.57) was observed from the

analysis with the same group of experience (Group III) and strong organizational culture interacted with high work stress.

The present cell means substitutes the studies of earlier researchers which suggest that, highly experienced employees and employees who perceive their culture as strong and performs well in the work settings (Uddin, Luva, & Hossian, 2012; Warraich, Ahmed, Nawaz & Khoso, 2014). But a low performance of the employees observed from the analysis when they have long years of experience, strong organizational culture with high stress. The high and low performance of the employees explains the role of stress in determining the performance of the employees.

Besides three-way interaction, the three-way ANOVA of co-worker rating-absolute by experience, organizational culture and work stress also revealed two-way interaction of experience with organizational culture, experience with work stress and organizational culture with work stress. As the two-way interaction of experience with organizational culture and experience with work stress on co-worker rating-absolute was explained in earlier discussions (Table 22 & Table 41) the same was not included here. But the cell means of co-worker rating- absolute by organizational culture and work was calculated and presented in the table 62.

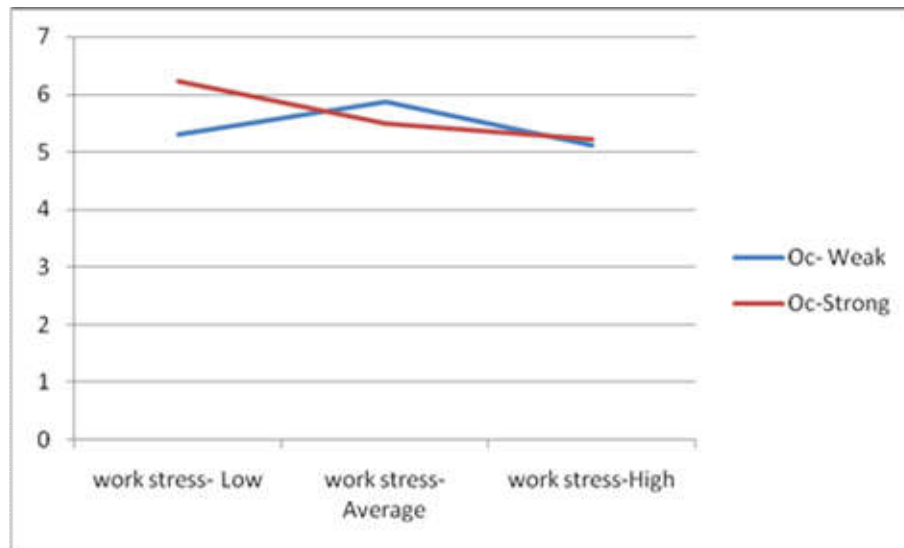
Table 62

Mean, Sd, and N of Co-worker Rating-Absolute by Organizational culture and Work Stress

Variable		Work stress			Total
Organizational culture	Group	Low	Average	High	
	Weak	5.30 (53, 0.50)	5.86 (49, 0.96)	5.12 (52, 1.02)	5.42 (154, 0.90)
	Strong	6.22 (36, 0.79)	5.49 (49, 1.90)	5.22 (63, 1.45)	5.55 (148, 1.54)
Total		5.67 (89, 0.78)	5.67 (98, 1.51)	5.17 (115, 1.27)	5.48 (302, 1.26)

(Note: Cell order= Mean, 'n' and SD)

Table 62 shows the cell means of co-worker rating-absolute by organizational culture and work stress. When the cell mean scores of co-worker rating-absolute was taken into consideration, it was observed that the interaction of strong organizational culture with low work stress brings a high mean score (Mean = 6.22) compared to other cell combinations. But when the weak organizational culture with high work stress was taken together, the interaction resulted in a low mean score (Mean = 5.12). The observed differences in the performance suggest that, interaction between organizational culture and work stress has a significant role in determining the performance of industrial employees. To know more about the interaction, calculated cell means were plotted graphically and presented in figure 25.



(Note: Oc- Organizational culture)

Figure 25: Interaction graph of co-worker rating-absolute by Organizational culture and Work Stress

From the figure 13, it can be seen that employees with strong organizational culture and low work stress shows a higher performance in the industries. But when the employees experience a high work stress in a strong organizational culture, their performance came downwards. The results suggest that as the stress level increases, the performance of the employee comes down even when the employees perceive strong organizational culture. In earlier studies, it was found that high level of stress negatively influence different organizational factors which influence the performance of employees (Bhatti, *et al.*, 2011; Fairbrother & Warn, 2003). From the present result, it can interpret that the stress may negatively influence the organizational factors which may in turn resulted in the low performance of the employees.

Influence of experience, organizational culture and work stress on Co-worker rating–Relative

Co-worker rating–relative is the performance rating done by the co-worker of the participant. To know the interaction effect of experience, organizational culture and work stress on co-worker rating–relative, three-way ANOVA was computed and the results are presented in the table 63.

Table 63

Summary of 3-way ANOVA of Co-worker rating- relative by Experience, Organizational culture and Work Stress (3 x 2 x 3)

Source of variance	Sum of Squares	df	Mean Square	F
Experience	10.05	2	5.03	5.46**
Organizational culture	10.78	1	10.78	11.69**
Work stress	21.85	2	10.92	11.85**
Experience * Organizational culture	12.57	2	6.28	6.89**
Experience * Work stress	31.20	4	7.80	8.46**
Organizational culture * Work stress	3.12	2	1.56	1.69
Experience * Organizational culture * Work stress	32.02	3	10.67	11.58**
Error	262.66	285	0.92	
Total	9440.00	302		

**p< .01.

From the three-way ANOVA table 63 of co-worker rating–relative by experience, organizational culture and work stress, it can be seen that there exist a significant three-way interaction effect ($F = 11.58, p < .01$). It means that, when different levels of experience, organizational culture and work stress taken together, these variables jointly influencing the rating of co-worker about employees performance. This implies that a co-worker of an employee when commending about his colleagues performance, thinks about colleagues experience in the

organization, and what type of culture the person perceive and the work stress the individual experiencing in the organization.

Along with three-way interaction, the analysis also revealed two-way interaction effect of experience and organizational culture ($F = 6.89, p < .01$), experience and work stress ($F = 8.46, p < .01$). A significant main effect between different levels of experience ($F = 5.46, p < .01$), organizational culture ($F = 11.69, p < .01$) and work stress ($F = 11.85, p < .01$) was also observed.

While considering the co-worker rating-relative, the main effect and interaction effect shows the significant role of experience, organizational culture and work stress on the performance of employees which substitutes earlier studies by indicating the role of these variables on the performance of the employees (Manikandan, 2010; Perrin, 2008; Bashir & Ramay, 2010). As there exists two-way interaction effects the cell means were calculated for interactions for co-worker rating-relative by experience, organizational culture and work stress and presented in the table 64.

Table 64

Mean, Sd, and N of Co-worker Rating-Relative by Experience, Organizational culture and Work Stress

Experience	Organizational culture	Work stress			Total
		Low	Average	High	
Group I (1-10 years)	Weak	5.06 (17, 0.24)	6.11 (18, 0.32)	5.64 (14, 0.49)	5.61 (49, 0.57)
	Strong	5.00 (1, -)	6.62 (16, 0.50)	6.15 (26, 0.38)	6.30 (43, 0.51)
	Total	5.06 (18, 0.23)	6.35 (34, 0.48)	5.98 (40, 0.48)	5.93 (92, 0.64)
Group II (11-20 years)	Weak	4.75 (20, 0.55)	5.61 (31, 1.25)	3.57 (23, 1.80)	4.74 (74, 1.57)
	Strong	5.45 (22, 0.74)	5.80 (20, 1.88)	5.87 (16, 0.80)	5.69 (58, 1.26)
	Total	5.12 (42, 0.74)	5.69 (51, 1.51)	4.51 (39, 1.86)	5.16 (132, 1.51)
Group III (21-37 years)	Weak	5.88 (16, 0.50)	-	5.13 (15, 1.12)	5.52 (31, 0.92)
	Strong	7.00 (13, 0.00)	5.00 (13, 0.00)	4.38 (21, 0.86)	5.28 (47, 1.24)
	Total	6.38 (29, 0.67)	5.00 (13, 0.00)	4.69 (36, 1.03)	5.37 (78, 1.12)
Total	Weak	5.19 (53, 0.65)	5.80 (49, 1.04)	4.58 (52, 1.64)	5.18 (154, 1.27)
	Strong	6.00 (36, 0.95)	5.86 (49, 1.36)	5.49 (63, 1.04)	5.74 (148, 1.15)
	Total	5.52 (89, 0.88)	5.83 (98, 1.21)	5.08 (115, 1.41)	5.45 (302, 1.25)

(Note: Cell order= Mean, 'n' and SD)

Table 64 shows the cell means of three-way interaction between experience, organizational culture and work stress on co-worker rating-relative. From the cell mean of the performance (co-worker rating-relative), it can be seen that employees with an experience of 21-37 years, perceiving strong organizational culture and experiencing low work stress revealed scored a high mean (Mean=7.00). A low mean score (Mean = 3.57) was observed for the combination - the group with experience of 11-20 years, weak organizational culture and high work stress.

The low and high performance observed from the cell means suggest that the different levels of experience interact with different levels of organizational culture and work stress. The interaction brings a significant difference in the performance of employees, where an employee perceive strong organizational culture brings high performance, weak organizational culture brings low performance, low stress brings high performance and high stress brings low performance. Supporting to this result, researchers in the academic area also reported that the nature of organizational culture (George & Jayan, 2012; Syauta, Troena, Setiawan & Solimun, 2012) and stress (Ahmed & Ramzan, 2013; Bashir & Ramay, 2010) in determining the performance of the employees in industries.

Regarding the significant two-way interaction effect observed in the model, cell means were calculated for co-worker rating-relative by experience and work stress which described earlier (Table 45), it was not included here. The cell means for the two-way interaction effect of co-worker rating- relative by experience with organizational culture was calculated and presented in the table 65.

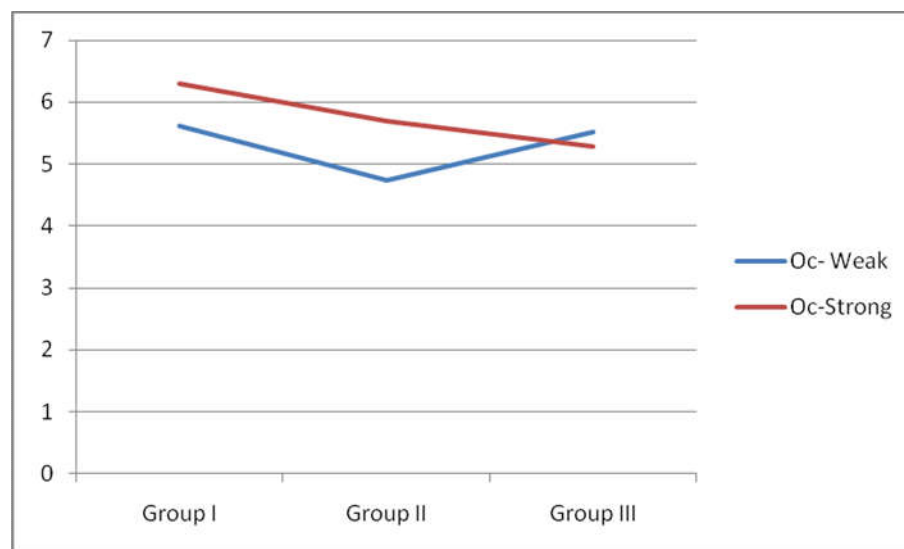
Table 65

Mean, Sd, and N of Co-worker Rating-Relative by Experience and Organizational culture

Variable		Experience			Total
Organizational culture	Group	Group I (1-10 years)	Group II (11-20 years)	Group III (21- 37 years)	
	Weak	5.61 (49, 0.57)	4.74 (74, 1.57)	5.52 (31, 0.92)	5.18 (154, 1.27)
	Strong	6.30 (43, 0.51)	5.69 (58, 1.26)	5.28 (47, 1.24)	5.74 (148, 1.15)
Total		5.93 (92, 0.64)	5.16 (132, 1.51)	5.37 (78, 1.13)	5.45 (302, 1.25)

(Note: Cell order= Mean, 'n' and SD)

Table 65 shows the cell means of performance (co-worker rating-relative) by experience and organizational culture. From the table, a high mean score (Mean = 6.30) was observed when strong organizational culture interacted with group I (1-10 years) level of experience. A low mean score (Mean = 4.74) was observed in the combination of strong organizational culture with group II (11 to 20 years) level of experience. The observed difference in the means score suggests that, when different levels of experience interact with organizational culture, the performance of the employee differ significantly. To know more about the interaction, the calculated cell means were graphically plotted in the figure 26.



(Note: Group I =Experience 1-10 years, Group II =Experience 11 to 20 years, Group III = Experience 21 to 37 year, Oc- Organizational culture)

Figure 26: Interaction graph of Supervisor rating by Experience and Organizational culture.

Figure 26 suggests that employee having a perception of strong organizational culture, they work better than employees who perceive their organizations culture as weak-up to 20 years of experience. It suggests the importance of having a strong organizational culture for the employee who had an

experience of 20 years and below in the organization. But, from the cell mean, it was also observed that, experience between 21 to 37 years, the performance of employees with strong organizational culture the performance of the employees were coming down, even lower than employee who perceive weak organizational culture. Similar to the present result, Ng and Feldman (2010) in their article stated that, organizational tenure-performance relationship was stronger for younger workers but the strength of the association decreased as organizational tenure increases.

Influence of experience, organizational culture and work stress on Supervisor rating

Supervisor rating is the performance rating done by the supervisor about the performance off the participants. To know the interaction effect of between experience, organizational culture and work stress on supervisor rating, three-way ANOVA was performed. The results of the analysis are presented in the table 66.

Table 66

Summary of 3-way ANOVA of Supervisor rating by Experience, Organizational culture and Work Stress (3 x 2 x 3)

Source of variance	Sum of Squares	Df	Mean Square	F
Experience	0.36	2	0.18	0.58
Organizational culture	4.74	1	4.74	15.25**
Work stress	1.43	2	0.72	2.31
Experience * Organizational culture	2.29	2	1.14	3.69*
Experience * Work stress	2.77	4	0.69	2.23
Organizational culture* Work stress	1.63	2	0.81	2.62
Experience * Organizational culture * Work stress	0.55	3	0.18	0.59
Error	88.50	285	0.31	
Total	7773.00	302		

*p< .05. **p< .01.

Table 66 shows the result of the three-way analysis of supervisor rating by experience, organizational culture and work stress. From the table 66, it can be seen that no three-way interaction effect between the experience, organizational culture and work stress on rating of their supervisor. This means that a supervisor while marking the performance of an individual employee, experience of the person in the industry, the individual perception of culture of the organization and work stress of the employee may not be his concerns. Here one thing is to remember that the perception of culture of the organization and experience of stress is purely personal one and the supervisor may not be skillful enough or trained to understand the employees' perceptions.

When look into the two-way interaction effect on supervisor rating, the analysis revealed an interaction effect between experience and organizational culture ($F = 3.96, p < .05$), no other combination produced any interaction effect on supervisor rating. A significant main effect of organizational culture was found in supervisor rating ($F = 15.25, p < .01$). As there exist two-way interaction between experience and organizational culture on supervisor rating, the cell means were calculated and presented in the table 67.

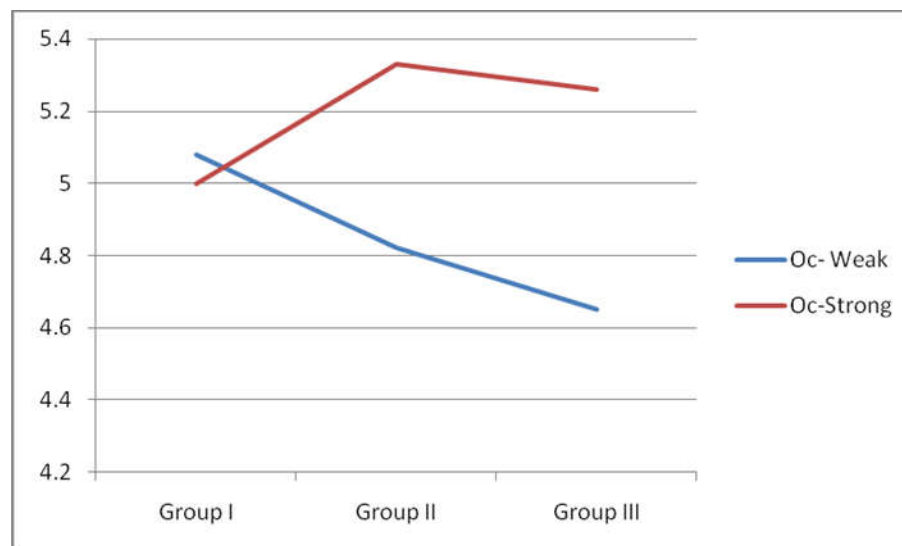
Table 67

Mean, Sd, and N of Supervisor rating by Experience and Organizational culture

Variable		Experience			Total
Organizational culture	Group	Group I (1-10 years)	Group II (11-20 years)	Group III (21-37 years)	
	Weak	5.08 (49, 0.28)	4.82 (74, 0.63)	4.65 (31, 1.05)	4.87 (154, 0.67)
	Strong	5.00 (43, 0.49)	5.33 (58, 0.47)	5.26 (47, 0.44)	5.21 (148, 0.48)
Total		5.04 (92, 0.39)	5.05 (132, 0.61)	5.01 (78, 0.79)	5.04 (302, 0.61)

(Note: Cell order= Mean, 'n' and SD)

Table 67, which shows the cell means of co-worker rating-relative by organizational culture and experience revealed a high mean score (Mean = 5.33) when strong organizational culture interacted with experience of 11-20 years (Group II). A low performance was observed (Mean = 4.65) when the weak organizational culture interacted with Group III (21-37 years) of experience in the work. As the table shows a difference in the cell means of supervisor rating, which is an indicator of performance suggests that, the interaction between different groups of experience and organizational culture brings difference in the performance of employees. Therefore, a graph was drawn by plotting the cell means of co-worker rating by organizational culture and experience to know more about the interaction and given as the figure 27.



(Note: Group I = Experience 1-10 years, Group II = Experience 11 to 20 years, Group III = Experience 21 to 37 years, Oc- Organizational culture)

Figure 27: Interaction graph of Supervisor rating by Experience and Organizational culture.

Figure 27 suggests that, even though employees with strong and weak organizational culture perform all most same in the initial years, but experience goes

up, employee with strong organizational culture perform far better than employees who perceive the organization as weak organizational culture. It suggests the importance of strong organizational culture to an employee to perform well in the organization. According to Bindl and Parker (2010) when an employee internalize and identify the values and goals of the organization they work in, show more positive behaviors at work which ultimately lead to higher employee performance.

Influence of experience, organizational culture and work stress on Performance

Performance rating is the average of all the ratings related with self-rating, co-worker rating and supervisor rating. To know the influence of experience, organizational culture and work stress on the performance of the employees, three-way ANOVA was done and the results are presented in the table 68.

Table 68

Summary of 3-way ANOVA of Performance by Experience, Organizational culture and Work Stress (3 x 2 x 3)

Source of variation	Sum of Squares	df	Mean Square	F
Experience	3.58	2	1.79	4.22*
Organizational culture	3.21	1	3.21	7.56**
Work stress	18.88	2	9.44	22.25**
Experience * Organizational culture	2.46	2	1.23	2.89
Experience * Work stress	20.49	4	5.12	12.07**
Organizational culture * Work stress	0.88	2	0.441	1.04
Experience * Organizational culture * Work stress	14.51	3	4.84	11.40**
Error	120.94	285	0.42	
Total	9072.56	302		

*p<.05. **p<.01.

From table 68, it can be seen that when the experience, organizational culture and work stress interact, the interaction brings a significant three-way interaction on performance ($F = 11.40, p < .01$). The results revealed that the performance of the employee in an industrial context was influenced by how long the employee with the organization, the perception of organizational culture and the stress the work produces in a working context.

Even though the two-way interaction effect of experience and organizational culture, organizational culture and work stress was absent, there exist a significant interaction effect between experience and work stress on performance ($F = 12.07, p < .01$). A significant main effect of experience ($F = 4.22, p < .01$), organizational culture ($F = 7.56, p < .01$) and work stress ($F = 22.25, p < .01$) was observed on performance of employees.

From the results it can be assumed that experience, organizational culture and work stress of employees have a main as well as an interaction effect on the performance of employees. The role of experience, organizational culture and work stress on performance was reported by Manikandan (2010) that experience of an employee will help to predict the performance of workers. Regarding the organizational culture, Hossian (2013) advocated both positive and negative mannerism of culture in the organization has a significant role in the performance of employees. Warraich, Ahmed, Nawaz, and Khoso (2014) reported that stress which ascends from different stressors in the work setting such as workload and role conflict, inadequate monetary reward etc., reduces the efficiency of employees in the education sector.

To have more clarity about the interaction effect of experience, organizational culture and work stress on performance, three-way cell means were found out and presented in the table 69.

Table 69

Mean, Sd, and N of Performance by Experience, Organizational culture and Work Stress

Experience	Organizational culture	Work stress			Total
		Low	Average	High	
Group I (1-10 years)	Weak	5.20 (17, 0.23)	6.08 (18, 0.21)	5.57 (14, 0.23)	5.63 (49, 0.43)
	Strong	5.25 (1, -)	6.25 (16, 0.41)	5.77 (26, 0.27)	5.94 (43, 0.41)
	Total	5.21 (18, 0.23)	6.16 (34, 0.32)	5.70 (40, 0.27)	5.77 (92, 0.44)
Group II (11-20 years)	Weak	4.98 (20, 0.29)	5.62 (31, 0.79)	4.52 (23, 0.91)	5.11 (74, 0.87)
	Strong	5.40 (22, 0.34)	5.72 (20, 1.18)	5.60 (16, 0.71)	5.57 (58, 0.81)
	Total	5.21 (42, 0.38)	5.67 (51, 0.95)	4.98 (39, 0.98)	5.31 (132, 0.87)
Group III (21-37 years)	Weak	5.44 (16, 0.46)	-	4.90 (15, 1.14)	5.17 (31, 0.89)
	Strong	6.56 (13, 0.20)	5.23 (13, 0.16)	4.19 (21, 0.90)	5.13 (47, 1.16)
	Total	5.94 (29, 0.67)	5.23 (13, 0.16)	4.48 (36, 1.05)	5.15 (78, 1.05)
Total	Weak	5.19 (53, 0.38)	5.79 (49, 0.68)	4.91 (52, 0.95)	5.29 (154, 0.79)
	Strong	5.82 (36, 0.63)	5.76 (49, 0.87)	5.20 (63, 0.97)	5.54 (148, 0.91)
	Total	5.45 (89, 0.58)	5.78 (98, 0.78)	5.07 (115, 0.97)	5.41 (302, 0.86)

(Note: Cell order= Mean, 'n' and SD)

Table 69 shows the three-way cell means of performance by experience, organizational culture and work stress. The calculated cell means revealed that, by comparing with other cell means, the combination of group III of experience, strong organizational culture and low work stress resulted in a high cell mean (Means = 6.56). A low performance (Means = 4.19) was observed in the combination of

experience (group III), strong organizational culture and high work stress comparing with other cell means.

The results revealed that, when the different levels of stress interacted with experience (group III) and strong organizational culture, a significant difference in the performance of employees can be observed. It suggests the role of work stress in the performance even with long years of experience in the job and perception of strong organizational culture, the employees performs low or high based on the level of work stress they experience in the organization.

The cell means for the interaction between experience and work stress on performance was not found, because the result was all ready discussed in earlier combination (Table 51).

Influence of experience, organizational culture and work stress on performance and its dimensions

To know how the interaction of experience, organizational culture and work stress on performance, ANOVA was performed with five different performance ratings (self-rating- absolute, self-rating-relative, co-worker rating- absolute, co-worker rating-relative and supervisor rating) and with the average of all the ratings, that is performance. From the analysis done so far it was found that, the performance of the employee differ when different groups of experience, organizational culture and work stress interact with each other for all the performance ratings, excepts the supervisor rating.

Regarding the performance rating which is the average of all the performance ratings, it was found that, when the different groups of experience, organizational culture and work stress with each other, performance of the employee differs in the group. The calculated cell means concluded that a combination with strong organizational culture, low work stress and experience of 20 years and above

resulted in a high performance; and at the same time, a combination of strong organizational culture, high work stress and an experience of 20 years and above resulted in a low performance.

Besides the three way interaction, a two-way interaction between experience and work stress on performance also observed from the three-way ANOVA. The cell means for the two-way interaction between the variables not presented here, as it was already presented with earlier combination (Table 20).

Influence of work engagement, organizational culture and work stress on Self-rating-Absolute

Self-rating-absolute is the evaluation of performance which is rated by the participants. To know the main and interaction effect of work engagement, organizational culture and work stress on self-rating-absolute, three-way ANOVA was executed and the results are presented in the table 70.

Table 70

Summary of 3-way ANOVA of Selfrating-Absolute by Work engagement, Organizational culture and Work Stress (3 x 2 x 3)

Source of variance	Sum of Squares	df	Mean Square	F
Work engagement	26.49	2	13.25	20.49**
Organizational culture	4.54	1	4.54	7.02**
Work stress	12.96	2	6.48	10.02**
Work engagement * Organizational culture	13.13	2	6.56	10.15**
Work engagement * Work stress	50.57	4	12.64	19.55**
Organizational culture * Work stress	9.12	2	4.56	7.05**
Work engagement * Organizational culture * Work stress	31.79	2	15.89	24.58**
Error	184.92	286	0.65	
Total	10396.00	302		

*p< .05, **p< .01

Table 70 shows the main and interaction effect of work engagement, organizational culture and work stress on performance (self-rating-absolute) of employees. From the result it can be seen that there exist a significant three-way interaction effect of experience, organizational culture and work stress on performance ($F = 24.58, p < .01$), suggests these variables jointly influencing their self-rating-absolute.

In addition to the three-way interaction effect, the analysis on self-rating-absolute also found significant two-way interactions of work engagement and organizational culture ($F = 10.15, p < .01$), work engagement and work stress ($F = 19.55, p < .01$), organizational culture and work stress ($F = 7.05, p < .01$). A significant main effect of work engagement ($F = 20.49, p < .01$), organizational culture ($F = 7.02, p < .01$) and work stress ($F = 10.02, p < .01$) can also be observed from table 70. Three-way interaction effect implies that work engagement, organizational culture and work stress were playing significant role in deciding the performance of the employees (Self-rating-Absolute). Many researchers reported that work engagement, organizational culture and work stress significantly influencing the performance of the employees (Gorgievski, Moriano & Bakker, 2014; Giri, Nimran, Hamid & Musadieq, *nd*; Bashir & Ramay, 2010).

To know more about the three-way interaction of work engagement, organizational culture and work stress on self-rating-absolute, the cell means were found out and presented in the table 71.

Table 71

Mean, Sd, and N of Self-Rating- Absolute by Work engagement, Organizational culture and Work Stress

Work engagement	Organizational culture	Work stress			Total
		Low	Average	High	
Low	Weak	5.00 (31, 0.68)	5.33 (18, 1.28)	6.18 (28, 0.86)	5.51 (77, 1.05)
	Strong	3.00 (4, 0.00)	-	5.60 (15, 0.51)	5.05 (19, 1.17)
	Total	4.77 (35, 0.91)	5.33 (18, 1.28)	5.98 (43, 0.80)	5.42 (96, 1.08)
Average	Weak	5.36 (22, 0.49)	6.33 (24, 0.92)	6.00 (5, 0.00)	5.88 (51, .84)
	Strong	6.75 (16, 0.44)	6.55 (22, 0.74)	4.00 (26, 1.41)	5.56 (64, 1.65)
	Total	5.95 (38, 0.83)	6.43 (46, 0.83)	4.32 (31, 1.49)	5.70 (115, 1.36)
High	Weak	-	6.00 (7, 0.00)	5.95 (19, 0.62)	5.96 (26, 0.53)
	Strong	6.50 (16, 0.89)	6.63 (27, 0.49)	5.64 (22, 0.49)	6.26 (65, 0.76)
	Total	6.50 (16, 0.89)	6.50 (34, 0.51)	5.78 (41, 0.57)	6.18 (91, 0.71)
Total	Weak	5.15 (53, 0.63)	5.92 (49, 1.09)	6.08 (52, 0.74)	5.71 (154, 0.93)
	Strong	6.22 (36, 1.333)	6.59 (49, 0.61)	4.95 (63, 1.26)	5.80 (148, 1.33)
	Total	5.58 (89, 1.106)	6.26 (98, 0.94)	5.46 (115, 1.19)	5.75 (302, 1.14)

(Note: Cell order= Mean, 'n' and SD)

The cell means (table 71), which shows the self-rating-absolute by work engagement, organizational culture and work engagement, it can be observed that the interaction of average work engagement, strong organizational culture and low work stress resulted in high mean score (Mean = 6.75) and the interaction of average work engagement, strong organizational culture and high work stress resulted in low mean score (Mean = 4.00). The high and low means scores of self-rating-absolute

suggest that, the performance of the employee differs when different groups of work engagement, organizational culture and work stress interact.

From the cell means, it was also observed that, when average work engagement and strong organizational culture interacts with different work stress levels, resulted in two extreme performances - the low work stressed employee performed well in the organization and high work stressed employee showed very low performance in the organization. The high and low performance mean scores found on self-rating-absolute suggest that the work stress level has an important role in determining the performance of employees. The reviews of existing literature also support the present study by reporting that stress which arises from workload and role conflict, and inadequate monetary reward reduces the efficiency of employees (Warraich, Ahmed, Nawaz, & Khoso, 2014) and will negatively influence the performance of them in their organization.

Results of ANOVA also revealed two-way interactions of work engagement, organizational culture and work stress on self-rating-absolute, cell means were found for interaction between work engagement and organizational culture. As the two-way interactions of work engagement and work stress, and organizational culture and work stress were already explained in the earlier combinations (Table 34 & Table 55), the same was not repeated here.

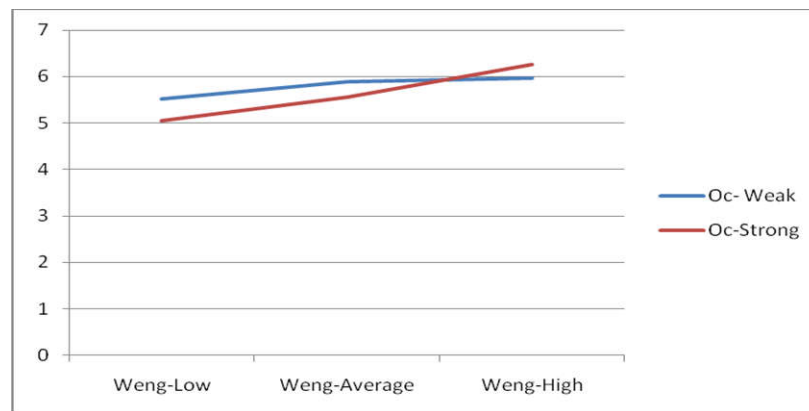
Table 72 shows the calculated cell means of self-rating-absolute by work engagement and organizational culture.

Table 72
 Mean, Sd, and N of Self-Rating- Absolute by Work engagement and Organizational culture

Variable		Work Engagement			Total
Organizational Culture	Group	Low	Average	High	
	Weak	5.51 (77, 1.05)	5.88 (51, 0.84)	5.96 (26, 0.53)	5.71 (154, 0.93)
	Strong	5.05 (19, 1.78)	5.56 (64, 1.65)	6.26 (65, 0.76)	5.80 (148, 1.33)
Total		5.42 (96, 1.08)	5.70 (115, 1.35)	6.18 (91, 0.71)	5.75 (302, 1.14)

(Note: Cell order= Mean, 'n' and SD)

Table 72 shows the cell means of self-rating-absolute when different groups of work engagement and organizational interacts with each other. While comparing all the cell means presented in the table, a high mean score (Mean=6.26) was observed in high work engagement with strong organizational culture combination and a low mean score (Mean = 5.05) was observed in strong organizational culture with low work engagement cell. As the cell means states the difference in performance (self-rating-absolute), a figure was drawn based on the cell means to know more about the interaction effect and presented in figure 28.



(Note: Weng= Work Engagement, Oc = Organizational Culture)

Figure 28: Interaction graph of Self rating - Absolute by work engagement and organizational culture

Figure 28 revealed that employees performed low with strong organizational culture than weak organizational culture when they had low or average work engagement. But when they had strong organizational culture and high work engagement, they performed high in the organization. It stresses that an employee with high work engagement and strong organizational culture will improve the performance of them. Studies reported that the work engagement and organizational culture help the employee to absorb with the assigned work as well as organization which will offer organizations with a competitive advantage or productivity of employees in the organization (Bakker, Schaufeli, Leiter, & Taris, 2008; Biswas, 2009).

Influence of work engagement, organizational culture and work stress on Self-rating-Relative

Self-rating-relative is the performance rating done by the participant by comparing his/her performance with the performance of others working in the organization. To know the main and interaction effect of work engagement, organizational culture and work stress on self-rating-relative, three-way ANOVA was carried out. The details are presented in table 73.

Table 73
Summary of 3-way ANOVA of Self rating – Relative by Work engagement, Organizational culture and Work Stress (3 x 2 x 3)

Source of variance	Sum of Squares	df	Mean Square	F
Work engagement	6.49	2	3.25	4.46**
Organizational culture	1.35	1	1.35	1.86
Work stress	93.72	2	46.86	64.31**
Work engagement * Organizational culture	10.96	2	5.48	7.52**
Work engagement * Work stress	38.41	4	9.60	13.18**
Organizational culture * Work stress	6.30	2	3.15	4.32**
Work engagement * Organizational culture * Work stress	32.67	2	16.34	22.42**
Error	208.42	286	0.73	
Total	10172.00	302		

*p< .05, **p< .01

Table 73 shows the three-way interaction effect of work engagement, organizational culture and work stress on performance (self-rating–relative) of employees. From the results, it can be seen that there exist a significant three-way interaction effect of experience, organizational culture and work stress on self-rating–relative ($F = 22.42$, $p < .01$) which suggests that variables work engagement, organizational culture and work stress jointly influences the performance of the employees.

While looking into the two-way interaction on self-rating–relative, the analysis revealed that all the two-way interaction between the variables has significant effect on the performance of the employees that is, work engagement and organizational culture ($F = 7.52$, $p < .01$), work engagement and work stress ($F = 13.18$, $p < .01$), organizational culture and work stress ($F = 4.32$, $p < .01$). Instead of this the main effects of the variables on self-rating–relative found that, the

performance of the employee differ significantly among different levels of work engagement ($F = 4.46, p < .01$), and work stress ($F = 64.31, p < .01$). Like earlier studies of different scholars (eg., Ojo, 2009; Mokaya & Kipyegon, 2014; Bakker & Demerouti, 2008), the present study also revealed the influence of experience, organizational culture and work stress on performance (self-rating-relative) of employees.

To know more about the three-way interaction effect of work engagement, organizational culture and work stress on self-rating–relative, the cell means were calculated and presented in the table 74.

Table 74

Mean, Sd, and N of Self-Rating-Relative by Work engagement, Organizational culture and Work Stress

Work Engagement	Organizational Culture	Work stress			Total
		Low	Average	High	
Low	Weak	5.19 (31, 1.08)	6.56 (18, 0.86)	5.39 (28, 0.91)	5.58 (77, 1.10)
	Strong	4.00 (4, 0.00)	-	5.20 (15, 1.01)	4.95 (19, 1.02)
	Total	5.06 (35, 1.08)	6.56 (18, 0.86)	5.33 (43, 0.94)	5.46 (96, 1.11)
Average	Weak	5.36 (22, 0.49)	6.42 (24, 0.93)	6.00 (5, 0.00)	5.92 (51, 0.86)
	Strong	6.75 (16, 0.44)	6.55 (22, 0.74)	4.00 (26, 1.41)	5.56 (64, 1.65)
	Total	5.95 (38, 0.84)	6.48 (46, 0.84)	4.32 (31, 1.49)	5.72 (115, 1.37)
High	Weak	-	7.00 (7, 0.00)	5.11 (19, 0.93)	5.62 (26, 1.17)
	Strong	5.00 (16, 0.00)	6.63 (27, 0.49)	5.86 (22, 0.77)	5.97 (65, 0.84)
	Total	5.00 (16, 0.00)	6.71 (34, 0.46)	5.51 (41, 0.92)	5.87 (91, 0.95)
Total	Weak	5.26 (53, 0.88)	6.55 (49, 0.84)	5.35 (52, 0.90)	5.70 (154, 1.05)
	Strong	5.67 (36, 1.069)	6.59 (49, 0.61)	4.94 (63, 1.39)	5.66 (148, 1.31)
	Total	5.43 (89, 0.97)	6.57 (98, 0.73)	5.12 (115, 1.21)	5.68 (302, 1.18)

(Note: Cell order= Mean, 'n' and SD)

Table 74 gives the cell means of performance (self-rating–relative) by work engagement, organizational culture and work stress. While looking into the cell means of self-rating–relative, it was observed that, when high work engagement, weak organizational culture and average work stress considered together, the interaction resulted in a high mean score (Mean = 7.00) while comparing with other cell means. A low cell mean score (Mean = 4.00) was observed in low work engagement, strong organizational culture and low work stress combination while comparing to other cell means.

The cell means observed from the table suggests that, the three-way interaction between work engagement, organizational culture and work stress has a greater role in deciding the performance of the employees. Based on the result, it can be assumed that, even with weak organizational culture, highly work engaged employees shows a higher performance in the organization when they experience an average work stress. But even when the employee experience low work stress and perceive strong organizational culture in a work setting perform low as they are less likely to be engage in their work. The studies of several scholars also suggested that, engaged workers are having different positive qualities related with creativity, hard work, self-efficacious, etc (Bakker & Demerouti, 2008; Xanthopoulou *et al.*, 2007) which will positively influence the performance of the employees.

Since the two-way interactions of work engagement, organizational culture and work stress on self-rating–relative was explained in the earlier combinations (Table 18, 38, & 59), the same was not repeated here.

Influence of work engagement, organizational culture and work stress on Co-worker rating–Absolute

Co-worker rating-absolute is the performance rating done by the co-worker of the participant. To know how work engagement, organizational culture and work

stress influence performance (co-worker rating-absolute), three-way ANOVA was carried out and the results are presented in table 75.

Table 75

Summary of 3-way ANOVA of Co-worker rating- Absolute by Work engagement, Organizational culture and Work Stress (3 x 2 x 3)

Source of variance	Sum of Squares	df	Mean Square	F
Work engagement	14.97	2	7.49	6.96**
Organizational culture	14.64	1	14.64	13.60**
Work stress	4.35	2	2.17	2.02
Work engagement * Organizational culture	60.39	2	30.19	28.06**
Work engagement * Work stress	27.02	4	6.75	6.28**
Organizational culture * Work stress	42.94	2	21.47	19.95**
Work engagement * Organizational culture * Work stress	10.14	2	5.07	4.71**
Error	307.74	286	1.077	

**p< .01

From table 75, it can be seen that work engagement, organizational culture and work stress of the employees significantly interact each other on co-worker rating-absolute ($F=4.75$, $p< .01$). The result suggests that the different levels of experience, organizational culture and work stress interact with each other and the interaction brings certain effect in the performance of the employees.

From table 75, it can be also seen that the two-way interaction of work engagement and organizational culture ($F = 28.06$, $p< .01$), work engagement and work stress ($F = 6.28$, $p< .01$) and organizational culture and work stress ($F = 19.95$, $p< .01$) were significant. This brings the role of experience, work engagement and work stress in deciding rating of the co-worker about the performance of the

individual employee. A significant main effect of work engagement ($F = 6.96, p < .01$) and organizational culture ($F = 13.60, p < .01$) on co-worker rating-absolute was also found. These results explain that the performance of co-worker in the organization independently play a significant role. The results of this study is in accordance with the earlier studies by Bashir and Ramay (2010), Ginevicius and Vaitkunaite (2006), Mokaya and Kipyegon (2014), etc.

To know more about where the three-way interaction effect takes place, the cell means were calculated and presented in the table 76.

Table 76
Mean, Sd, and N of Co-worker rating-Absolute by Work engagement, Organizational culture and Work Stress

Work Engagement	Organizational Culture	Work stress			Total
		Low	Average	High	
Low	Weak	5.52 (31, 0.57)	5.56 (18, 0.86)	5.50 (28, 0.92)	5.52 (77, 0.77)
	Strong	7.00 (4, 0.00)	-	6.20 (15, 1.01)	6.37 (19, 0.95)
	Total	5.69 (35, 0.72)	5.56 (18, 0.86)	5.74 (43, 1.00)	5.69 (96, 0.87)
Average	Weak	5.00 (22, 0.00)	6.33 (24, 0.91)	6.00 (5, 0.00)	5.73 (51, 0.89)
	Strong	6.50 (16, 0.89)	4.77 (22, 2.50)	4.00 (26, 1.44)	4.89 (64, 2.02)
	Total	5.63 (38, 0.94)	5.59 (46, 1.99)	4.32 (31, 1.49)	5.26 (115, 1.66)
High	Weak	-	5.00 (7, 0.00)	4.32 (19, 0.75)	4.50 (26, 0.71)
	Strong	5.75 (16, 0.44)	6.07 (27, 0.92)	6.00 (22, 0.00)	5.97 (65, 0.64)
	Total	5.75 (16, 0.44)	5.85 (34, 0.92)	5.22 (41, 0.98)	5.55 (91, 0.93)
Total	Weak	5.30 (53, 0.503)	5.86 (49, 0.95)	5.12 (52, 1.02)	5.42 (154, 0.90)
	Strong	6.22 (36, 0.79)	5.49 (49, 1.90)	5.22 (63, 1.45)	5.55 (148, 1.54)
	Total	5.67 (89, 0.78)	5.67 (98, 1.511)	5.17 (115, 1.27)	5.48 (302, 1.26)

(Note: Cell order= Mean, 'n' and SD)

From the cell mean table (table 76) of co-worker rating-absolute, a high mean score (Mean = 7.00) was observed when low work engagement, strong organizational culture and low work stress interacted, and low mean score (Mean = 4.00) was observed when average work engagement, strong organizational culture and a high work stress interacted each other. The results suggest that, when employees perceive strong organizational culture and low work stress, even with low work engagement, they perform better in the organization. And at the same time, the combination of average work engagement, strong organizational culture, with high work stress resulted in the low performance by the employees. The result suggests that, when work stress interacts with organizational culture and work engagement, performance of the employee may differ. The low performance of employees even with strong organizational culture may be due to the negative effects of work stress (Eg. Lundberg, 2002; Ranjit & Mahespriya, 2012).

The two-way interactions of work engagement, organizational culture and work stress on co-worker rating-absolute observed in the present three-analysis was not presented here, since it is already presented with earlier combinations (Table 23, 41 & 62).

Influence of work engagement, organizational culture and work stress on Co-worker rating-Relative

Co-worker rating-relative is the performance rating done by a co-worker about the performance of the participant by comparing the participant's performance with others workers in the organization. To know whether the work engagement,

organizational culture and work stress interact with each other on co-worker rating-relative, three-way ANOVA was done and the results are presented in the table 77.

Table 77

Summary of 3-way ANOVA of Co-worker rating- Relative by Work engagement, Organizational culture and Work Stress (3 x 2 x 3)

Source of variance	Sum of Squares	df	Mean Square	F
Work engagement	62.72	2	31.35	38.65**
Organizational culture	46.21	1	46.21	56.95**
Work stress	15.54	2	7.77	9.58**
Work engagement * Organizational culture	84.82	2	42.41	52.27**
Work engagement * Work stress	35.02	4	8.75	10.79**
Organizational culture * Work stress	27.47	2	13.73	16.93**
Work engagement * Organizational culture * Work stress	17.08	2	8.54	10.52**
Error	232.05	286	0.81	
Total	9440.00	302		

**p< .01

Table 77 shows the result of the three-way ANOVA of co-worker rating-relative by work engagement, organizational culture and work stress. When the work engagement, organizational culture and work stress were considered together, the analysis revealed that there is a significant three-way interaction effect on co-worker rating-relative ($F = 10.52$, $p < .01$). It suggests that when the different levels of work engagement, organizational culture and work stress interact with each other and the interaction brings an effect on the performance of the employees.

The table 77 also shows that, all the two-way interactions, ie, work engagement and organizational culture ($F = 52.27, p < .01$), work engagement and work stress ($F = 10.79, p < .01$) and organizational culture and work stress ($F = 16.93, p < .01$) on co-worker rating-relative were significant. In addition to two-way interactions, the main effect of work engagement ($F = 38.65, p < .01$), organizational culture ($F = 56.95, p < .01$) and work stress ($F = 9.58, p < .01$) were also found to be significant.

The significant main and interaction effect of work engagement, organizational culture and work stress on co-worker rating-relative reveals that the performance of the employee was influenced by the nature of work engagement, organizational culture and work stress of the employee have. Studies by different scholars (Gorgievski, Moriano & Bakker, 2014; Giri, Nimran, Hamid, & Musadieg, *nd*; Bashir & Ramay, 2010) also suggested that the performance of the employee is influenced by the organizational factors such as work engagement, organizational culture and work stress.

To know how the three-way interaction of work engagement, organizational culture and work stress on co-worker rating-relative make changes in the performance of employees, the cell means were calculated for the interactions and the same are presented in the table 78.

Table 78

Mean, Sd, and N of Co-worker rating- relative by Work engagement, Organizational culture and Work Stress

Work Engagement	Organizational Culture	Work stress			Total
		Low	Average	High	
Low	Weak	5.32 (31, 0.83)	5.78 (18, 0.42)	5.36 (28, 0.91)	5.44 (77, 0.80)
	Strong	6.00 (4, 0.00)	-	6.20 (15, 1.01)	6.16 (19, 0.89)
	Total	5.40 (35, 0.81)	5.78 (18, 0.43)	5.65 (43, 1.02)	5.58 (96, 0.87)
Average	Weak	5.00 (22, 0.00)	6.33 (24, 0.91)	6.00 (5, 0.00)	5.73 (51, 0.89)
	Strong	7.00 (16, 0.00)	5.59 (22, 1.76)	4.65 (26, 0.93)	5.56 (64, 1.500)
	Total	5.84 (38, 1.001)	5.98 (46, 1.422)	4.87 (31, 0.99)	5.63 (115, 1.27)
High	Weak	-	4.00 (7, 0.00)	3.05 (19, 1.54)	3.31 (26, 1.38)
	Strong	5.00 (16, 0.00)	6.07 (27, 0.9)	6.00 (22, 0.00)	5.78 (65, 0.74)
	Total	5.00 (16, 0.00)	5.65 (34, 1.18)	4.63 (41, 1.81)	5.08 (91, 1.48)
Total	Weak	5.19 (53, 0.65)	5.80 (49, 1.04)	4.58 (52, 1.64)	5.18 (154, 1.27)
	Strong	6.00 (36, 0.96)	5.86 (49, 1.37)	5.49 (63, 1.04)	5.74 (148, 1.16)
	Total	5.52 (89, 0.88)	5.83 (98, 1.21)	5.08 (115, 1.41)	5.45 (302, 1.25)

From table 78, the cell means of performance (co-worker rating- relative) by work engagement, organizational culture and work stress can be seen. While going through the cell means, it can be seen that, when average work engagement, strong organizational culture and low work stress interacted together, interaction brings a high mean score (Mean = 7.00) compared to other cell means. A low mean score (Mean = 3.05) was observed in the combination of high work engagement, weak organizational culture and high work stress while comparing with other cell means.

The cell means suggests that, an employee with average work engagement, strong organizational culture and low work stress perform well in the organization. But when the employee perceive his organizations culture as weak and experience high work stress, even with high work engagement, the employee may perform less in the organization. This findings clearly states the importance of organizational culture and work stress in the study of employee performance. There were studies which reported that organizational culture will help the employee to develop innovation, meaning fullness, etc, (Naqshbandi, Kaur & Ma, 2015; Tastan & Turker, 2014) and may positively influence the performance. Regarding the work stress, studies reported that, if the stress level of the employee exceeds the limits, it will produce negative behaviors in employee (Lundberg, 2002; Fairbrother & Warn, 2003) and this will negatively influence the performance of the employees.

Regarding the two way-interactions of work engagement, work stress and organizational culture, the cell means were already presented and discussed (Table 25 & 46), hence are not presented here.

The cell means were calculated for the two-way interaction between organizational culture and work stress on co-worker rating-relative, and presented in the table 79.

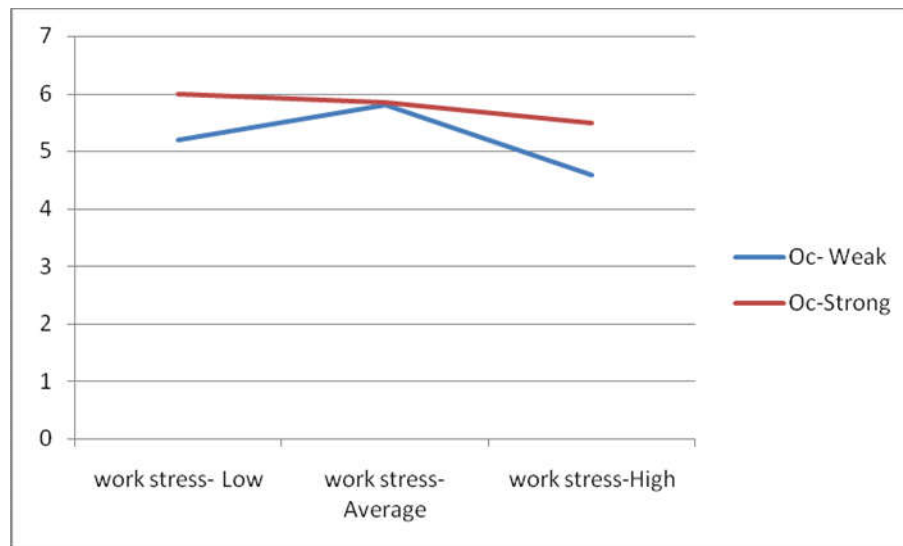
Table 79

Mean, Sd, and N of Co-worker rating- relative by Work engagement, Organizational culture and Work Stress

Variable		Work Stress			Total
Organizational Culture	Group	Low	Average	High	
	Weak	5.19 (53, 0.65)	5.80 (49, 1.04)	4.58 (52, 1.64)	5.18 (154, 1.27)
	Strong	6.00 (36, 0.96)	5.86 (49, 1.37)	5.49 (63, 1.04)	5.74 (148, 1.16)
Total		5.52 (89, 0.88)	5.83 (98, 1.21)	5.08 (115, 1.41)	5.45 (302, 1.25)

(Note: Cell order= Mean, 'n' and SD)

Table 79 gives the cell means of performance rating (co-worker rating-relative) of employee by organizational culture and work stress. From the table, a high cell mean score (Mean = 6.00) can be observed for the interaction of strong organizational culture and low work stress. A low mean score (Mean = 4.58) was observed for the interaction between weak organizational culture and high work stress. The differences in the cell means observed suggests that, performance of the employee may differ among employees when different levels of organizational culture and work engagement interact with each other. To know where the interaction takes place, the cell means were plotted in a graph and presented as figure 29.



(Note: Oc = Organizational Culture)

Figure 29: Interaction graph of Co-worker rating- relative by Organizational culture and Work Stress

Figure 29 which shows the performance of employees by organizational culture and work stress in terms of co-worker rating-relative suggests that, employee who perceive their organizations culture as strong perform well in the organization irrespective of the work stress they perceive. According to Smith, Farmer, and Yellowley (2012) organizational culture is the shared values, norms and behaviors that guide the individual employees to work within organization. When the employee are linked to the organization (strong organizational culture), irrespective of the work stress, they may perform well. It was also observed that, employee with high work stress perform low with both strong and weak organizational culture. The figure suggests that average stress in the work will motivate the employee to perform well than with low and high stress.

Influence of work engagement, organizational culture and work stress on Supervisor rating

Supervisor rating is the evaluation of participant's performance by the supervisor. To know the main and interaction effect of work engagement, organizational culture and work stress on performance (supervisor rating), three-way ANOVA was done and the results are presented in the table 80.

Table 80

Summary of 3-way ANOVA of Supervisor rating by Work engagement, Organizational culture and Work Stress (3 x 2 x 3)

Source of variance	Sum of Squares	df	Mean Square	F
Work engagement	6.03	2	3.01	9.78**
Organizational culture	13.97	1	13.97	45.31**
Work stress	1.40	2	0.70	2.28
Work engagement * Organizational culture	3.47	2	1.73	5.63**
Work engagement * Work stress	5.58	4	1.39	4.52**
Organizational culture * Work stress	1.77	2	0.88	2.87
Work engagement * Organizational culture * Work stress	0.16	2	0.08	0.26
Error	88.19	286	0.31	
Total	7773.00	302		

*p< .05, **p< .01

Table 80 shows the main and interaction effect of work engagement, organizational culture and work stress on performance (supervisor rating) of the employees. Result revealed that no significant three-way interaction on supervisor rating about the performance of the employees. This suggests that supervisors while marking their rating about the performance of his followers may not jointly influenced by how the employees are engaged in their work, employees experience about their work stress and their perception of culture of the organization.

Even though there was no three-way interaction there exist two-way interaction between work engagement and organizational culture ($F = 5.63, p < .01$), and work engagement and work stress ($F = 4.52, p < .01$). This implies that supervisors were considering work engagement and organizational culture together while making an evaluation of performance. Similarly, work engagement and work stress jointly influence the rating of employees performance. At the same time supervisors were considered work engagement ($F = 9.78, p < .01$) and organizational culture ($F = 45.31, p < .01$) an important element during their evaluation.

The main and interaction effects suggest that, work engagement and perception organizational culture has an important role in determining the evaluation of their supervisors. While addressing the performance of the employees, different scholars also found the influence of work engagement and organizational culture on their performance (Bakker, Schaufeli, Leiter, & Taris, 2008; Glomseth, Gottschalk, & Solli-Saether, 2007). Even though the work stress experienced by the employee hasn't influence the evaluation of their supervisor directly, it was considered along with work engagement.

To know more about the two-way interactions, cell means were calculated for supervisor rating. The cell means of supervisor rating by work engagement and organizational culture was not presented here, because it was already presented in earlier discussion (Table 27). Here, the cell means of supervisor rating was reported and the same is presented in the table 81.

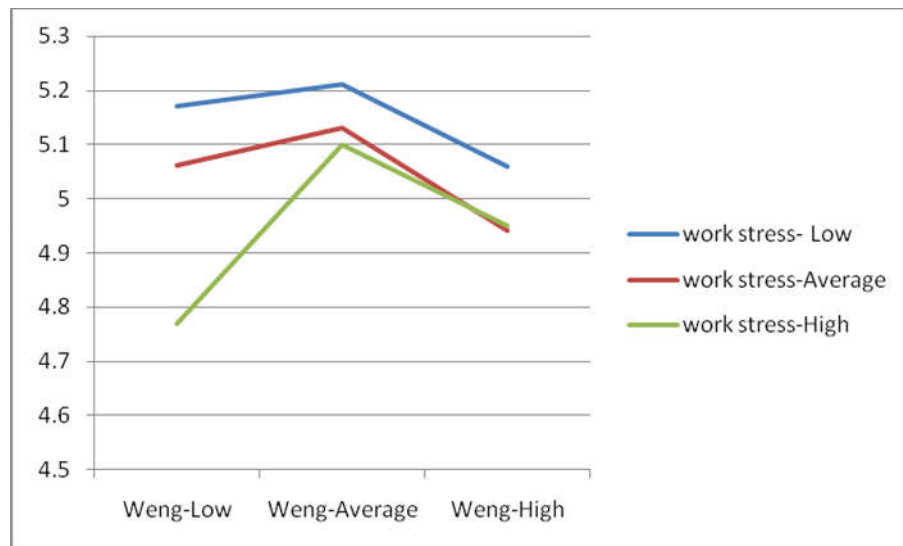
Table 81

Mean, Sd, and N of supervisor rating by Work engagement and Work Stress

Variables		Work Stress			Total
Work Engagement	Group	Low	Average	High	
	Low	5.17 (35, 0.57)	5.06 (18, 0.24)	4.77 (43, 0.84)	4.97 (96, 0.69)
	Average	5.21 (38, 0.62)	5.13 (46, 0.34)	5.10 (31, 0.30)	5.15 (115, 0.44)
	High	5.06 (16, 0.25)	4.94 (34, 0.78)	4.95 (41, 0.74)	4.97 (91, 0.69)
	Total	5.17 (89, 0.55)	5.05 (98, 0.52)	4.92 (115, 0.70)	5.04 (302, 0.61)

(Note: Cell order= Mean, 'n' and SD)

The cell mean table 81 shows the performance of the employee by work engagement and work stress. From the table, it was observed that when the average work engagement interacted with low work stress, resulted in high cell mean score (Mean = 5.21) and when the low work engagement interacted with high work stress, the interaction was resulted in cell mean score (Mean = 4.77) while comparing to other cell mean scores. The difference was observed in the performance of the employee between various levels of work engagement and work stress suggests that, the variables have a role in determining the performance of employees. To know more about it, a graph was drawn based on the calculated cell means and presented it as figure 30.



(Note: Weng= Work Engagement)

Figure 30: Interaction graph of Supervisor rating by Work engagement and Work Stress

Figure 30 shows the performance of the employees by work engagement and work stress based on the supervisor rating suggests that, employee with low work stress perform high even with low work engagement. A low performance of the employee also observed when the employee experience high work stress and low work engagement. Supporting to the present result, various studies in the field reported that, employees shows a lower performance when they experience high work stress (Warraich, Ahmed, Nawaz, & Khoso, 2014; Manzoor, Awan, & Mariam, *nd*) and low work engagement (Perrin, 2008; Gupta, Acharya, & Gupta, 2015).

Influence of work engagement, organizational culture and work stress on Performance

Performance of the employee is the average of five different ratings. To know whether the work engagement, organizational culture and work stress of employee have any main and interaction effect on the performance, three-way ANOVA was done. The result of the analysis is presented in the table 82.

Table 82

Summary of 3-way ANOVA of Performance by Work engagement, Organizational culture and Work Stress (3 x2 x 3)

Source of variance	Sum of Squares	df	Mean Square	F
Work engagement	10.47	2	5.23	11.94**
Organizational culture	10.89	1	10.89	24.84**
Work stress	14.43	2	7.22	16.47**
Work engagement * Organizational culture	27.30	2	13.65	31.15**
Work engagement * Work stress	18.54	4	4.64	10.58**
Organizational culture * Work stress	15.07	2	7.54	17.19**
Work engagement * Organizational culture * Work stress	10.35	2	5.17	11.81**
Error	125.34	286	0.42	
Total	9072.56	302		

**p< .01

Table 82 shows the main and interaction effect of work engagement, organizational culture and work stress on the performance of the employees. From the table, it can be observed that, there exist a significant three-way interaction effect (F= 11.81, p< .01) of work engagement, organizational culture and work stress on the performance. The three-way interaction effect suggests that, while evaluating the employee's performance in the organization one should consider the work engagement, organizational culture and work stress of the employees.

The two-way ANOVA results suggests that the interaction between work engagement interact and organizational culture (F= 31.15, p< .01), work engagement interact and work stress (F= 10.58, p< .01) and organizational culture and work

stress ($F=17.19$, $p < .01$) brings a significant difference in the performance of the employees. More over the significant main effects also revealed the independent effects of work engagement ($F=11.94$, $p < .01$), organizational culture ($F= 24.84$, $p < .01$) and work stress ($F= 16.47$, $p < .01$) on performance of employees.

The main and interaction effect of work engagement, organizational culture and work stress on the performance of the employees advocates that, these variables have an important role in defining the performance of the employees. Previous studies conducted in the area of organizational behavior also suggests that, the performance of the employee is affected by the work engagement (Gorgievski, Moriano, & Bakker, 2014), organizational culture (Biswas, 2009) and work stress (Warraich, Ahmed, Nawaz, & Khoso, 2014) of employees working in an industrial unit.

To know more about where the interaction takes place the three-way interaction cell means of performance by work stress, work engagement and organizational culture were calculated and presented in the table 83.

Table 83

Mean, Sd, and N of Performance by Work engagement, Organizational culture and Work Stress

Work Engagement	Organizational Culture	Work stress			Total
		Low	Average	High	
Low	Weak	5.27 (31, 0.45)	5.74 (18, 0.55)	5.20 (28, 0.90)	5.36 (77, 0.69)
	Strong	5.75 (4, .00)	-	5.68 (15, 0.79)	5.69 (19, 0.70)
	Total	5.33 (35, 0.46)	5.74 (18, 0.55)	5.37 (43, 0.88)	5.42 (96, 0.70)
Average	Weak	5.08 (22, 0.19)	6.05 (24, 0.71)	5.75 (5, 0.00)	5.60 (51, 0.68)
	Strong	6.45 (16, 0.29)	5.51 (22, 1.07)	4.44 (26, 0.94)	5.31 (64, 1.19)
	Total	5.658 (38, 0.73)	5.79 (46, 0.93)	4.65 (31, 0.99)	5.44 (115, 1.00)
High	Weak	-	5.07 (7, 0.19)	4.26 (19, 0.70)	4.48 (26, 0.76)
	Strong	5.203 (16, 0.14)	5.97 (27, 0.62)	5.78 (22, 0.28)	5.72 (65, 0.53)
	Total	5.20 (16, 0.14)	5.79 (34, 0.67)	5.08 (41, 0.95)	5.36 (91, 0.82)
Total	Weak	5.19 (53, 0.38)	5.79 (49, 0.68)	4.91 (52, 0.96)	5.29 (154, 0.79)
	Strong	5.82 (36, 0.63)	5.765 (49, 0.87)	5.206 (63, 0.97)	5.54 (148, 0.91)
	Total	5.45 (89, 0.58)	5.78 (98, 0.78)	5.07 (115, 0.97)	5.41 (302, 0.86)

(Note: Cell order= Mean, 'n' and SD)

Table 83 gives the cell means of performance of the employee when different groups of work engagement, organizational culture and work stress interacted. Among the cell means, the cell mean of average work engagement, strong organizational culture and low work stress shows high mean score (Mean = 6.45) compared to other cell mean scores. At the same time the cell mean of high work engagement, weak organizational culture and high work stress shows a low mean score (Mean = 4.26) compared to other cell means. The high and low performance

suggests that, when different groups of work engagement, organizational culture and work stress interact with each other, the interaction results in the differences in the performance of the employees.

Results of ANOVA suggests that when an employee's who perceive the organization have strong organizational culture and experiencing low work stress with average work engagement may have high performance. But even when the employee showed a high work engagement, the performance may low when they perceive the organizational as weak organizational culture and high work stress. The present result recommends to develop strong organizational culture and optimum work engagement in the organization by reducing the risk factors. Supporting to the present result Bakker *et al.* (2004) and Sokro (2012) suggests that high work engagement and strong organizational culture were responsible for the higher employee performance. Ahmed and Ramzan (2013), Bashir and Ramay (2010) reported a negative relationship between high work stress and performance.

Results also revealed two-way interaction between work engagement and organizational culture, and work engagement and work stress, but those discussions were not presented since they were discussed already presented with earlier combinations (Table 30 & 52).

The cell means for two-way interaction between organizational culture and work stress on performance was calculated and presented in the table 84.

Table 84

Mean, Sd, and N of Performance by Organizational culture and Work Stress

Variable		Work stress			Total
Organizational culture	Group	Low	Average	High	
	Weak	5.19 (53, 0.38)	5.79 (49, 0.68)	4.91 (52, 0.95)	5.291 (154, 0.79)
	Strong	5.82 (36, 0.63)	5.76 (49, 0.87)	5.21 (63, 0.97)	5.54 (148, 0.91)
Total		5.44 (89, 0.58)	5.781 (98, 0.78)	5.07 (115, 0.97)	5.41 (302, 0.86)

(Note: Cell order= Mean, 'n' and SD)

Table 84 shows the cell means of performance of the employees by different levels of organizational culture and work stress. While going through the cell means a high mean score in performance (Mean=5.82) was observed in the cell of strong organizational culture with low work stress. Similarly a cell with lower mean score on performance (Mean = 4.91) was observed in the weak organizational culture and high work stress cell. To know more about the interaction effect, the cell mean were plotted in a graph and presented in figure 31.



(Note: Oc = Organizational Culture)

Figure 31: Interaction graph of Performance by Organizational culture and Work Stress

From the figure 31, a high performance can be observed among the employees who perceive both strong and weak organizational culture and experiencing an average work stress in a work setting. But, it was observed that, employees with low and high stress performed very low when they perceived their organizations culture as weak. The employee who perceived their organizations culture as strong, their performance became very low with high work stress. Lim, Bogossian and Ahern, (2010), Bhatti *et al.* (2011), Fairbrother and Warn (2003), etc stated that, high work stress creates some negative effects in the individual, which in turn negatively influence the performance of workers. Therefore the result suggests to maintain an optimum level of stress to achieve maximum performance.

Summary of the combination- work engagement, organizational culture and work stress on performance and its dimensions

Since, the performance rating is the average of five different rating (self-rating absolute, self-rating relative, co-worker rating- absolute, co-worker rating relative and supervisor rating) separate ANOVA was performed to know the three-way interaction of work engagement, organizational culture and work stress on performance. The analyses found that, the performance of the employee significantly differ when different groups of work engagement, organizational culture and work stress interact with each other for all the performance rating scales except supervisor rating.

When the average of all the five rating scale were considered, it was found that, when the different groups of work engagement, organizational culture and work stress interact with each other, three-way interaction resulted in a significant effect on performance. The cell mean table based on the three-way interaction suggests

that, the combination of average work engagement, strong organizational culture and low work stress motivated the employee to perform well in the organization, where the combination of high work engagement, weak organizational culture and high work stress resulted in a low performance.

Consolidated 'F' values of Performance and its dimension

To know the unique pattern of main and interaction effect of experience, work engagement, and organizational culture on performance and its sub dimensions (self-rating- absolute, self-rating- relative, co-worker rating-absolute, co-worker rating-relative and supervisor rating) all the calculated F values in different three-way ANOVA combination was given in separate tables.

Influence of experience, work engagement, and organizational culture on performance and its sub dimensions

The calculated 'F' values of self-rating- absolute, self-rating- relative, co-worker rating-absolute, co-worker rating-relative, supervisor rating and performance in three-way combination of experience, work engagement, and organizational culture were consolidated in the table 85.

Table 85

'F' value of performance rating and its sub dimensions by experience, work engagement, and organizational culture (3 x 3 x 2)

Source of variance	Performance and its Dimensions					
	SRA	SRR	CRA	CRR	SR	PERF
Experience	5.87**	10.44**	7.05**	6.43**	1.54	7.83**
Work engagement	3.23*	0.50	4.10*	20.25**	2.55	4.17*
Organizational culture	2.83	1.60	9.97**	21.87**	5.40*	12.40**
Experience * Work engagement	9.65**	10.00**	2.34	2.32	0.50	2.84*
Experience * Organizational culture	0.10	1.13	3.89*	1.90	0.52	1.58
Work engagement * Organizational culture	1.34	3.83	15.86**	17.25**	3.32*	8.75**
Experience * Organizational culture Work engagement	0.22	0.13	10.35**	2.52	0.38	2.03

*p< .05. **p< .01

(Note: SRA = self-rating- absolute, SRR= self-rating-relative, CRA = co-worker rating absolute, CRR = co-worker rating relative, SR = supervisor rating & PERF = performance)

Table 85 shows the consolidated 'F' values of performance and its dimensions by experience, work engagement, and organizational culture. While going through the 'F' values of performance; it was observed that the three-way interaction of experience, work engagement, and organizational culture has no significant interaction effect on performance of the employees. But when the F values of the dimensions of performance was considered, a three-way interaction effect was observed in co-worker rating-absolute (F = 10.35, p< .01).

When the two-way interaction was considered, a significant interaction effect was observed between experience and work engagement (F =2.84, p< .05) and work engagement and organizational culture (F =8.75, p< .01) on performance. While going through the calculated 'F' values of two way interaction between experience and work engagement, it was observed that, the interaction has a significant effect

on dimensions self-rating-absolute ($F = 9.65$, $p < .01$) and self-rating-relative ($F = 10.00$, $p < .05$), but there was no significant interaction effect on other performance dimensions. Work engagement and organization culture shows significant interaction effect compare to other combination. The main effect of experience, work engagement and organizational culture revealed that these variables have a significant effect on performance of the employees.

Influence of Experience, Work stress and Work engagement on performance and its dimensions

To know how the performance and its various sub dimensions (self-rating-absolute, self-rating- relative, co-worker rating absolute, co-worker rating relative and supervisor rating) differ by experience, work stress and work engagement, all the calculated ‘F’ values of different ANOVA by experience, work stress and work engagement were gathered in the table 86.

Table 86

‘F’ value of performance rating and its components by Experience, Work stress and Work engagement (3 x 3 x 3)

Source of variance	Performance and its Dimensions					
	SRA	SRR	CRA	CRR	SR	PERF
Experience	15.82**	12.56**	7.03**	5.85**	0.72	7.94**
Work engagement	30.31**	5.59**	2.37	1.36	2.17	2.59
Work stress	4.44*	12.20**	2.39	1.13	1.89	2.89
Experience * Work engagement	16.93**	13.42**	2.12	4.69**	5.89**	6.61**
Experience * Work stress	21.42**	13.78**	11.65**	10.02**	2.03	14.22**
Work engagement * Work stress	35.69	5.16*	6.64**	3.73**	0.79	4.98**
Experience * Work stress * Work engagement	23.36**	19.95**	7.91**	4.89**	0.52	9.44**

* $p < .05$. ** $p < .01$

(Note: SRA = self-rating- absolute, SRR= self-rating-relative, CRA = co-worker rating absolute, CRR = co-worker rating relative, SR = supervisor rating & PERF = performance)

From table 86, the 'F' values of the performance and its sub dimensions by experience, work stress and work engagement; it can observe that the selected variables has a three-way interaction effect on performance ($F = 9.44, p < .01$) of the employees. When the 'F' values of sub dimensions of performance was considered, it was observed that, experience, work stress and work engagement has a significant three-way interaction effect on self-rating-absolute ($F = 23.36, p < .01$), self-rating-relative ($F = 19.95, p < .01$), co-worker rating-absolute ($F = 7.91, p < .01$) and, co-worker rating-relative ($F = 4.89, p < .01$).

When the two-way interaction between the variables considered, it was observed that, the interaction of experience with work engagement ($F = 6.61, p < .01$), experience with work stress ($F = 14.22, p < .01$) and work engagement with work stress ($F = 4.98, p < .01$) revealed a significant effect on the performance of the employees. When the various sub dimensions of performance was considered, it can be seen that the two-way interaction of experience with work engagement has a significant interaction effect on self-rating-absolute ($F = 16.93, p < .01$), self-rating-relative ($F = 13.42, p < .01$), co-worker rating-relative ($F = 4.69, p < .01$) and supervisor rating ($F = 6.61, p < .01$). In the case of two-way interaction of experience with work stress, it was found that, the performance of the employee significantly differ in performance when the dimensions of performance such as self-rating-absolute ($F = 21.42, P < 0.01$), self-rating- relative ($F = 13.78, p < .01$) co-worker rating-absolute ($F = 11.65, p < .01$) and co-worker rating-relative ($F = 10.02, p < .01$) was considered. A significant interaction effect in the performance of the employee was also observed in performance as well as self-rating- relative ($F = 5.16, p < .05$), co-worker rating-absolute ($F = 6.64, p < .01$) and

co-worker rating-relative ($F = 3.73$, $p < .01$) between work engagement and work stress.

While going through the 'F' values of performance and its dimensions by independent effect of experience, work engagement and work stress of the employees, it was observed that many of the main effects were significant. From these results, it can be assumed that these three variables has significant role in deciding the performance of the employees.

Influence of experience, organizational culture and work stress on performance and its sub dimensions

To have a overall view about main and interaction effect of experience, organizational culture and work stress on performance and its sub dimensions (self-rating- absolute, self-rating- relative, co-worker rating absolute, co-worker rating relative and supervisor rating) the calculated 'F' were presented in the table 87.

Table 87

'F' value of performance rating and its components by experience, organizational culture and work stress (3 x 2 x 3)

Source of variance	Performance and its Dimensions					
	SRA	SRR	CRA	CRR	SR	PERF
Experience	9.79**	7.32**	4.86**	5.46**	0.58	4.22*
Organizational culture	6.42**	0.32	1.52	11.69*	15.25**	7.56**
Work stress	16.01**	59.9**	7.13**	11.85*	2.31	22.25**
Experience * Organizational culture	2.97*	1.04	4.87**	6.89**	3.69*	2.89
Experience * Work stress	8.68**	13.78**	9.52**	8.46**	2.23	12.07**
Organizational culture * Work stress	47.65**	7.66**	3.88*	1.69	2.62	1.04
Experience * Organizational culture * Work stress	13.28**	21.18**	9.01**	11.58*	0.59	11.40**

* $p < .05$. ** $p < .01$

(Note: SRA = self-rating- absolute, SRR= self-rating-relative, CRA = co-worker rating absolute, CRR = co-worker rating relative, SR = supervisor rating & PERF = performance)

Table 87 shows the 'F' values of performance and its sub dimensions by experience, organizational culture and work stress revealed a significant three-way interaction effect on all variables except supervisor rating, this brings the importance of experience, organizational culture and work stress in the performance of employees. Similarly among the 16 two-way interaction 'F' values, only five 'F' values were found to be not significant.

When the main effect of each variable under this combination taken into consideration, table 87 revealed that, experience, organizational culture and work stress has a significant independent effect on performance and most of its sub dimensions.

Influence of work engagement, organizational culture and work stress on performance and its sub dimensions

To know the nature of main and interaction effect of work engagement, organizational culture and work stress on performance and its sub dimensions (self-rating- absolute, self-rating- relative, co-worker rating absolute, co-worker rating relative and supervisor rating), all the 'F' values found from different three-way ANOVA in the combination of work engagement, organizational culture and work stress were consolidated in the table 88.

Table 88

'F' value of performance rating and its components by work engagement, organizational culture and work stress (3 x 2 x 2)

Source of variance	Performance and its Dimensions					
	SRA	SRR	CRA	CRR	SR	PERF
Work engagement	20.49**	4.46**	6.96**	38.65**	9.78**	11.94**
Organizational culture	7.02**	1.86	13.60**	56.95**	45.31**	24.84**
Work stress	10.02**	64.31**	2.02	9.58**	2.28	16.47**
Work engagement * Organizational culture	10.15**	7.52**	28.06**	52.27**	5.63**	31.15**
Work engagement * Work stress	19.55**	13.18**	6.28**	10.79**	4.52**	10.58**
Organizational culture * Work stress	7.05**	4.32**	19.95**	16.93**	2.87	17.19**
Work engagement * Organizational culture * Work stress	24.58**	22.42**	4.71**	10.52**	0.26	11.81**

*p< .05, **p< .01

(Note: SRA = self-rating- absolute, SRR= self-rating-relative, CRA = co-worker rating absolute, CRR = co-worker rating relative, SR = supervisor rating & PERF = performance)

The 'F' values observed for the main and interaction effect of work engagement, organizational culture and work stress on performance and its various dimensions were presented in the table 88. From the table, the three-way interaction of work engagement, organizational culture and work stress revealed a significant effect on the performance ($F = 11.81$, $p < .01$) and its sub dimensions viz; self-rating-absolute ($F = 24.58$, $p < .01$), self-rating-relative ($F = 22.42$, $p < .01$), co-worker rating-absolute ($F = 4.71$, $p < .01$) and co-worker rating-relative ($F = 10.62$, $p < .01$).

While going through the two-way interaction between work engagement, organizational culture and work stress, it was observed a significant inter interaction between work engagement and organizational culture ($F = 31.15$, $p < .01$), work engagement and work stress ($F = 10.58$, $p < .01$) and organizational culture and work

stress ($F = 17.19$, $p < .01$). In the case of sub dimensions of performance, a significant interaction effect of work engagement and organizational culture was observed in all the dimensions viz., self-rating-absolute ($F = 10.15$, $p < .01$), self-rating-relative ($F = 7.52$, $p < .01$), co-worker rating-absolute ($F = 28.06$, $p < .01$), co-worker rating-relative ($F = 52.27$, $p < .01$) and supervisor rating ($F = 5.61$, $p < .01$). Similarly, a significant two-way interaction between work engagement and work stress in self-rating-absolute ($F = 19.55$, $p < .01$), self-rating-relative ($F = 13.18$, $p < .01$), co-worker rating-absolute ($F = 6.28$, $p < .01$), co-worker rating-relative ($F = 10.79$, $p < .01$) and supervisor rating ($F = 4.52$, $p < .01$) was observed. There exist a significant interaction between organizational culture and work stress in all the dimensions of performance such as self-rating-absolute ($F = 7.05$, $p < .01$), self-rating-relative ($F = 4.32$, $p < .01$), co-worker rating-absolute ($F = 19.95$, $p < .01$) and co-worker rating-relative ($F = 16.93$, $p < .01$) except in supervisor rating.

From the table 88, it can be seen that, employees performance significantly differ among different groups of work engagement ($F = 11.94$, $p < .01$), organizational culture ($F = 24.84$, $p < .01$) and work stress ($F = 16.47$, $p < .01$). It was also observed that, the variables work engagement, organizational culture and work stress has a significant main effect on most of the dimensions of performance.

Summary of the different three-way interaction effect on Performance by experience, organizational culture, work engagement, and work stress

The present study considered ‘performance’ of the employee is related with all the activities of the employee in the organization which is related organizations goals and can be rated by the employee themselves and by the co-worker and supervisor. When the variables were put in different combinations, the results

revealed a significant three-way interactions of experience, organizational culture, work engagement, and work stress on performance (average of self-rating, co-worker rating & supervisor rating) of the employees

Regarding the three-way interaction of experience, work stress and work engagement, it was observed that, the performance of the employees in the organization varied when different levels of experience, work stress and work engagement put together. Similarly, the combination of experience, organizational culture and work stress also revealed a significant three-way interaction on performance of the employees which states that performance of the employee differ with different levels of experience, organizational culture and work stress. The combination of work engagement, organizational culture and work stress also revealed a significant three-way interaction effect on performance.

Chapter 5

SUMMARY AND CONCLUSION

Competition is the face of modern business world. Those who compete with their potential, survive in this business world. To maintain the “survival of the fittest” rule, each organization/industry has to improve the productivity. The productivity of any organization is depends upon multiple factors; human resource is one of the important factors which determine the productivity of any organization. To improve the effectiveness or performance of the individual employee who are working in the organizations, authorities are searching for the connection between performance and organizational factors. Among them, organizational culture, work engagement of the employees, and work stress experienced by the employees are having an important role in determining the performance of the employees.

Organizational culture refers to the culture that exists in an organization, which connects all the employees to work together, to achieve something and differentiates the organization from other organizations in the method of working. The definitions of organizational culture given in different literatures state that culture exists in every organization in the form of values, norms and behaviors that influences the performance of individual employee which in turn reflects in group performance. When most of the employees incorporate the same sort of beliefs and values related with the organization, the culture is believed to be strong and when an employee loosely connects the same sorts of beliefs and values related with the organization, the culture is considered to be weak. Researches in the organizational area have confirmed that, if the employees perceive their culture as strong, they show a good performance in the organization. Thus, how the employee perceive their organizations culture has an important role in determining the performance of the employees. Because the importance of the organizational culture in the

organization, different scholars were studied about it and developed their own theories (eg. Quinn & Rohrbaugh, 1983; Denison & Spreitzer, 1991; Martin, 2001; Schein, 2004 etc).

Work engagement or employee engagement is one of the newly developed job attitude dimension which has a special role in the organizational research. According to Schaufeli, Salanova, Gonzalez-Roma and Bakker (2002), it is a "... a positive, fulfilling, work-related state of mind, that is characterized by Vigor, Dedication, and Absorption". Bakker and Demerouti (2008) stated that highly engaged workers perform better in the organization and suggested the reasons for good performance of engaged workers better than non-engaged workers. They identified that engaged employees often experience positive emotions, experience better health; create their own resources which will help them to perform well; and transfer their engagement to others. Thus it is clear that work engagement is a positive organizational factor. As the variable considered to be an important factor which determine the performance of an employee, various studies conducted in this area and commended that those who are engaged to the work will show more productive behavior in the organization (Sonnentag, 2003; Bakker & Demerouti, 2008; Knight, Patterson & Dawson, 2017). The major models of work engagement which explain the nature and processes of work engagement includes the models of Kahn (1990), Saks (2006), Bakker and Demerouti (2008), Sonnentag, Dormann, and Demerouti (2010), etc

Work stress is not a new concept in organizational researches. Even it is an old concept, it still dominates organizational researches. Rollinson (2005) defined workplace stress as the condition of an individual which emerge from the working

environment that is different from normal working condition of him/her. Every individual have to face stress from their working environment, but when it become excessive in nature, different physiological, psychological and behavioral problems will follow and finally lead to low performance of the employee in the organization. To maintain an optimum level of work stress, which will positively influence the performance of the employees, one have to know more about the construct stress. From the literature, it can be seen that there exists different studies which tried to bring out the factors that cause stress (eg- Pienaar, 2003; Lapane & Hughes, 2007) and tried to analysis the consequences of stress (Lundberg, 2002, Ranjith & Mahespriya; Palmer, Cooper & Thomas, 2004) in the organization. As work stress is an important factor in organizational research, there exists different models of work stress such as the work of Lewin (1951), French (1973), Hobfoll (1989), Karasek and Theorell (1990), Palmer, Cooper, and Thomas (2004), etc which explain the nature of work stress.

From various research literatures and models mentioned above, one can conclude that organizational culture, work engagement and work stress may directly or indirectly influences the performance of the individual employee in the organization/industry. To know more about the organizational culture, work engagement, work stress and performance, more studies to be conducted.

Statement of the Problem

The present study is entitled as **“ORGANIZATIONAL CULTURE, WORK ENGAGEMENT, WORK STRESS AND PERFORMANCE OF INDUSTRIAL EMPLOYEES IN KERALA”**

Objectives

1. To find out the extent of the organizational culture, work engagement, work stress, and performance of the industrial employees.
2. To know how the organizational culture, work engagement, work stress, and performance of the industrial employees are related.
3. To know the joint and relative contribution of organizational culture, work engagement and work stress in predicting the performance of industrial employees.
4. To know the interaction effect of experience, organizational culture, work engagement and work stress on performance of the industrial employees.

Hypotheses

1. Organizational culture, work engagement, work stress, and performance of the industrial employees will be normally distributed.
2. The relationship between organizational culture, work engagement, work stress, and performance will be significant.
3. Organizational culture, work engagement and work stress will be significant predictors of performance of industrial employees.
4. The main and interaction effect of experience, organizational culture, work engagement and work stress on performance will be a significant.

Participants

The participants of this study consist of 302 blue collar employees working in different industries (spinning mills) located different parts of Kerala state, India. All the selected industries belong to public sector. Among the participants, 164 participants were belonged to industries located at Northern part of Kerala, 93

participants belonged to central part of Kerala and 45 were belonged to Southern Kerala. Participants were belonged to Hindu religious affiliation (N =122), Islam (N = 169) and Christian (N = 11). Most of them were from poor educational background (SSLC and below= 212; higher secondary= 52; degree and other higher education= 38). The work experience of the participants was ranged from 2 years to 37 years. Among the participants, 263 were married and 39 were unmarried; and 240 of them live in their own home and 17 were stayed in rented house and 45 were stayed in quarters like facilities. Almost all the participants (N=296) were linked to some trade union activities but a few of them (6) were stayed away from union activities.

Instruments

To collect information related with organizational culture, work engagement, work stress and performance of the industrial employees in Kerala, following instruments were used:

- i. Organizational Culture Inventory (George & Jayan, 2010)
- ii. Utrecht Work Engagement Scale (Schaufeli, Salanova, Gonzales-Roma & Bakker, 2002)
- iii. Work stress scale (G) (Sarath & Manikandan, 2018).
- iv. Performance Rating Scale (five rating scales), (Jayan & Dharmagadan, 1995) Department of Psychology, University of Kerala.
- v. Background information Schedule

Information regarding organizational culture, work engagement, work stress, and performance were collected with the standardized instruments which were in

regional language (Malayalam) and demographic details such as experience, region, religious affiliation, membership in union etc., were collected using background information schedule. The instructions related to marking the responses of each instruments was written in the regional language on the top of each instruments.

Procedure

The investigator contacted the authority of selected industries personally and explained the importance, purpose and application of the present research work. After getting permission from the authority, investigator contacted the employees, working in the industries with the assistance of their supervisors in charge. Investigator established a good rapport with the employees and explained the importance of research work to them. After getting consent from the employees, all the standardized instruments along with background information schedule was given to the employees individually and requested them to respond to all the instruments. Doubts related with the instruments were cleared. After responding to the instruments, they were collected back and checked for omissions and errors. The scoring of each scale was done as per the instructions in the manual. Then the data were fed into a spread sheet for further statistical analysis.

Statistical techniques used

The statistical techniques used were based on the objectives set forth and hypotheses formulated. The following were the statistical techniques used.

- Descriptive statistics
- Pearson product moment correlation
- Regression (enter method)
- Analysis of Variance (ANOVA).

Major findings of the study

Relationship among organizational culture, work engagement, work stress and performance

- There is a significant positive relationship between organizational culture and work engagement.
- Organizational culture has a significant positive correlation with work engagement dimensions- dedication and absorption
- All the dimensions of organizational culture- organizational glue, organizational leadership, organizational mission, organizational group, organizational adaptability and organizational autonomy have a positive relationship with work engagement.
- Organizational culture has a significant positive correlation with performance.
- Organizational culture dimensions namely organizational glue, organizational leadership and organizational autonomy have a positive relationship with performance.
- Organizational culture dimension namely organizational adaptability is negatively related with performance.
- Organizational culture dimensions viz., organizational mission and organizational group has no significant relationship with performance.
- Organizational culture dimension- organizational group has a positive correlation with work stress.
- Organizational culture dimensions- organizational glue, organizational leadership, organizational mission, organizational adaptability and

organizational autonomy do not have a significant correlation with work stress.

- No significant relationship between the organizational culture and work stress.
- The variables work engagement and work stress is positively related with each other.
- Work engagement dimensions- vigor and dedication has a positive relationship with work stress
- Work engagement did not have any significant relationship with performance.
- Work stress was negatively correlated with performance.

Prediction of performance by organizational culture, work engagement, work stress

- The different predictor variables like organizational glue, organizational leadership, organizational mission, organizational group, organizational autonomy, organizational adaptability, vigor, dedication, absorption and work stress together predicted the performance by 32.3%.
- Organizational glue (OGL), organizational leadership (OL) and organizational autonomy (OA), vigor (V), absorption (A), organizational mission (OM) and organizational adaptability (OAD) was found to be the best predictors of performance.
- The equation to predict the performance of the employees can be summarized as:

$$\text{PERFORMANCE} = 5.763(\text{constant}) + (-.039*V) + (-.016*A) + (.057*OGL) + (.107* OL) + (-.139* OM) + (-.094*OAD) + (.174*OAU).$$

Influence of experience, organizational culture, work engagement and work stress on performance

- There was no combined effect of experience, work engagement and organizational culture on performance of the employees.
- There was a significant three-way interaction between experience, work engagement and work stress on the performance of employees where the combined effect of low work stress, average work engagement and more than 20 years of experience resulted in high performance; and the combined effect of average work engagement, high work stress and more than 20 years of experience bring low performance.
- There was a significant three-way interaction between experience, organizational culture and work stress on performance of the employees where the combined effect strong organizational culture, low work stress and more than 20 years of experience lead to in high performance; and the combination of the strong organizational culture, high work stress and more than 20 years of experience occasioned in low performance.
- There was a significant three-way interaction between work engagement, organizational culture and work stress on the performance of the employees where the combination of high work engagement, strong organizational culture and low work stress resulted in high performance; and the

combination of high work engagement, weak organizational culture and high stress resulted in low performance.

Conclusion

From the present study, it can be seen that, there exist a positive relationship between organizational culture and work engagement, work engagement and work stress, and organizational culture and performance. A negative relationship between work stress and performance was also observed. At the same time, no significant relationship between work engagement and performance, organizational culture and work stress was also observed. When the prediction of selected variables on performance considered, prediction of organizational glue, organizational leadership, organizational autonomy, vigor, absorption, organizational mission and organizational adaptability was found to be significant. When experience, organizational culture, work engagement and work stress interacted with each other, the interaction was found to be significant in determining the performance. In the light of the above findings, any step in the policies of the authorities in modulating these variables will positively influence the performance of the employee.

Organizational Implications

Every study in the area of organizational behavior or industrial psychology has its own implication in the organizations or industries. The implications of the present study can be summarized as:

- Organizations/industries as well the government who manage these units can make use of the findings of the study that how organizational culture, work engagement and work stress related with each other. The present study was useful to know about the predictive capacity of the dimensions of

organizational culture, work engagement and work stress to the performance of employees in the organizations. In addition to these, authorities can also use the findings to get more idea how the interaction effect of experience, organizational culture and work stress which determine the performance of the employees.

- By understanding the relationship between organizational culture, work engagement and work stress; the predictive capacity of organizational culture, work engagement and work stress; and knowing the interaction effect of experience, organizational culture, work engagement and work stress on the performance of the employees, the authorities or organizational psychologist can develop intervention plans or necessary steps to maintain a strong organizational culture so as to develop optimum work engagement and maintain optimum work stress.
- The present study adds a body of literature about organizational culture, work engagement, work stress and performance of the employees which will give insights to future researchers about the variables.

Limitations of the Study

Each study has its own limitations. The present study also had its own limitations. The major limitations of the study were:

- The sample was collected only from spinning mill to ensure the homogeneity. But it is not representing the whole blue collar employees who are working in the state.
- Only blue collar workers participated in this study, hence generalization was not possible.

- All participants belong to public sector industries hence the findings may not be applicable to private sector workers.

Scope for Further Research

- Conduct more researches to develop intervention strategies and policies which can improve the performance of the employees.
- Identify the casual factors including experience, work engagement, organizational culture and work stress that bring significant differences in the performance of the employees.
- The study can be replicated among industrial employees who are working in the industries other than spinning mills.
- Can extend the study among employees who are working in private sector also.
- Can add more variables other than organizational culture, work engagement and work stress in the future studies which influence the performance of the employees.
- Can study the interaction effect of organizational culture, work engagement and work stress with more demographic variables other than work experience.

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APPENDICES

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സുഹൃത്തേ,

ഞാൻ കോഴിക്കോട് സർവ്വകലാശാലയിൽ മനുഷ്യാസ്ത്രവിഭാഗത്തിലെ ഗവേഷക വിദ്യാർത്ഥിയാണ്. എന്റെ ഗവേഷണത്തിന്റെ പൂർത്തീകരണത്തിനായി താങ്കളുടെ സഹായം ആവശ്യമായി വന്നിരിക്കുന്നു. അതിന്റെ ഭാഗമായി ഞാൻ തയ്യാറാക്കിയ ചോദ്യാവലിയാണ് ഇതിനോട് അനുബന്ധമായി നൽകിയിരിക്കുന്നത്. സത്യസന്ധമായ അഭിപ്രായങ്ങൾ രേഖപ്പെടുത്തുന്നതിലൂടെ തൊഴിലാളിക്ഷേമ പദ്ധതികൾ തയ്യാറാക്കുവാൻ വിദഗ്ധരെയും മാനേജ്മെന്റിനെയും സഹായിക്കുന്ന വിധത്തിലാണ് ചോദ്യാവലി തയ്യാറാക്കിയിരിക്കുന്നത്.

നിങ്ങൾ നൽകുന്ന വിവരങ്ങൾ ഗവേഷണ ആവശ്യങ്ങൾക്ക് മാത്രമേ ഉപയോഗിക്കുകയുള്ളൂ. നിങ്ങളുടെ വ്യക്തിവിവരങ്ങൾ അനുവാദമില്ലാതെ പുറത്തുവിടുകയോ പ്രസിദ്ധീകരിക്കുകയോ ചെയ്യുന്നതല്ല.

വിശ്വസ്തതയോടെ

ശരത്.പി
ഗവേഷക വിദ്യാർത്ഥി
ഡിപ്പാർട്ട്മെന്റ് ഓഫ് സൈക്കോളജി
കാലിക്കറ്റ് യൂണിവേഴ്സിറ്റി

വ്യക്തിവിവരപട്ടിക

1. സ്ഥാപനത്തിന്റെ പേര് :
2. ഉദ്യോഗത്തിന്റെ പേര് :
3. വയസ്സ് :
4. ലിംഗം : ആൺ/പെൺ/മൂന്നാം ലിംഗം
5. മതം : ഹിന്ദു/ ഇസ്ലാം/ ക്രിസ്ത്യൻ/ മറ്റുള്ളവർ
6. വിദ്യാഭ്യാസ യോഗ്യത :
7. മാസ വരുമാനം :
8. ഈ സ്ഥാപനത്തിലെ പ്രവൃത്തി പരിചയം(വർഷത്തിൽ/മാസത്തിൽ):
9. a, ഈ സ്ഥാപനത്തിൽ പ്രവേശിക്കുന്നതിന് മുൻപ് മറ്റേതെങ്കിലും സ്ഥാപനത്തിൽ പ്രവൃത്തിപരിചയമുണ്ടോ? : ഉണ്ട്/ഇല്ല
b, ഉണ്ടെങ്കിൽ എത്ര കാലം? :
10. a, വിവാഹിതനാണോ? : അതെ /അല്ല
b, വിവാഹിതനാണെങ്കിൽ ഭാര്യക്ക്/ഭർത്താവിന് ജോലിയുണ്ടോ? : ഉണ്ട്/ഇല്ല
11. താമസസൗകര്യം: സ്വന്തം വീട്/വാടക വീട്/കാർട്ടേജ്/ഡോർമെട്രി സംവിധാനം
12. നിങ്ങൾ ഏതെങ്കിലും ട്രേഡ് യൂണിയനിൽ അംഗമാണോ? : അതെ /അല്ല

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University of Calicut

Utrecht Work Engagement Scale

Instructions:

The following statements are about how you feel at work. Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, write “0” (zero) in the space after the statement. If you have had this feeling, indicate how often you felt it by writing the number (from 1 to 6) that best describes how frequently you feel that way. You can refer the key below for responding. Your answers will kept confidential and use only for research purposes.

നിർദ്ദേശങ്ങൾ:

നിങ്ങളുടെ ജോലിയുമായി ബന്ധപ്പെട്ട ചില പ്രസ്താവനകളാണ് താഴെ കൊടുത്തിരിക്കുന്നത്. ഇതിൽ തെറ്റോ ശരിയോ ഇല്ല. ഓരോ പ്രസ്താവനയും വായിച്ച് താഴെ കൊടുത്തിരിക്കുന്ന സൂചിക അനുസരിച്ച് നിങ്ങളുടെ പ്രതികരണം രേഖപ്പെടുത്തുക. തരുന്ന വിവരങ്ങൾ ഗവേഷണ ആവശ്യങ്ങൾക്ക് മാത്രമേ ഉപയോഗിക്കുകയുള്ളൂ.

- | | |
|----------------------------------|--|
| ഒരിക്കലുമില്ല എങ്കിൽ ‘0’ എന്നും | 0= Never |
| അപൂർവ്വമായി എങ്കിൽ ‘1’ എന്നും | 1= Almost Never (a few times a year or less) |
| വീരളമായി എങ്കിൽ ‘2’ എന്നും | 2= Rarely (Once a month or less) |
| ചിലപ്പോൾ എങ്കിൽ ‘3’ എന്നും | 3= Some times (A few times a month) |
| വല്ലപ്പോഴും എങ്കിൽ ‘4’ എന്നും | 4= Often (One a week) |
| മിക്കപ്പോഴും എങ്കിൽ ‘5’ എന്നും | 5= Very often (A few times a week) |
| എല്ലായ്പ്പോഴും എങ്കിൽ ‘6’ എന്നും | 6= Always (Every day) |

No	Statements	Rating
1	At my work, I feel bursting with energy. ജോലി ചെയ്യുമ്പോൾ എന്നിൽ ഒരു ഊർജ്ജപ്രവാഹമുണ്ടാകുന്നതായി എനിക്ക് തോന്നുന്നു.	
2	I find the work that I do full of meaning and purpose. എന്റെ ജോലിക്ക് കൃത്യമായ അർത്ഥവും ലക്ഷ്യവും ഉള്ളതായി ഞാൻ കരുതുന്നു.	
3	Time flies when I am working. ജോലി ചെയ്യുമ്പോൾ സമയം പോവുന്നത് ഞാൻ അറിയാറില്ല.	
4	At my job, I feel strong and vigorous. ജോലിയിലേർപ്പെടുമ്പോൾ ഊർജ്ജസ്വലതയും കരുത്തും ഞാൻ അനുഭവിക്കുന്നു.	
5	I am enthusiastic about my job. എന്റെ തൊഴിലിനോട് എനിക്ക് ആഴത്തിലുള്ള താല്പര്യമുണ്ട്.	
6	When I am working, I forget everything else around me. ജോലി ചെയ്യുമ്പോൾ എനിക്ക് ചുറ്റുമുള്ള സകലകാര്യങ്ങളും ഞാൻ മറന്നുപോവാറുണ്ട്.	

7	My job inspires me. എന്റെ ജോലി എനിക്ക് പ്രചോദനം നൽകാറുണ്ട്.	
8	When I get up in the morning, I feel like going to work. രാവിലെ എഴുന്നേൽക്കുമ്പോൾ തന്നെ ജോലി ചെയ്യുവാനുള്ള ഉത്സാഹം എനിക്കുണ്ടാവാറുണ്ട്.	
9	I feel happy when I am working intensely. തുടർച്ചയായ് ജോലി ചെയ്താൽ പോലും അവ എനിക്ക് സന്തോഷമാണ് നൽകുന്നത്.	
10	I am proud of the work that I do. ഞാൻ ചെയ്യുന്ന ജോലിയെത്തുറിച്ചുമാർക്കുമ്പോൾ എനിക്ക് അഭിമാനം തോന്നാറുണ്ട്.	
11	I am immersed in my work. ഞാൻ എന്റെ ജോലിയിൽ ആഴത്തിൽ മുഴുകാറുണ്ട്.	
12	I can continue working for very long periods at a time. ഏറെ നേരം തുടർച്ചയായ് ജോലി ചെയ്യുവാൻ എനിക്ക് കഴിയും.	
13	To me, my job is challenging. എന്റെ ജോലി വെല്ലുവിളികൾ നിറഞ്ഞതാണെന്ന് എനിക്കറിയാം.	
14	I get carried away when I am working. എന്റെ ജോലിയോടൊപ്പം ഞാൻ സഞ്ചരിക്കാറുണ്ട്.	
15	At my job, I am very resilient, mentally. ജോലി സമയത്ത് പ്രശ്നങ്ങൾ ഉണ്ടാവുമ്പോൾ മാനസികമായ് പൂർവ്വസ്ഥിതി പ്രാപിക്കുവാനുള്ള കഴിവ് എനിക്കുണ്ട്.	
16	It is difficult to detach myself from my job. എന്റെ ജോലിയിൽ നിന്നും എന്നെ മാത്രം വേർതിരിച്ചെടുക്കുക എന്നത് പ്രയാസകരമായ കാര്യമാണ്.	
17	At my work, I always persevere, even when things do not go well. പൂർണ്ണമായും ചെയ്തുതീർക്കാനാകാത്ത ജോലികൾ ചെയ്തു തീർക്കുവാൻ പോലും ഞാൻ നന്നായി പരിശ്രമിക്കാറുണ്ട്.	

ORGANISATIONAL CULTURE INVENTORY (2010)

Reena George, Prof. (Dr.) C. Jayan
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നിങ്ങളുടെ ജോലിയിൽ സാധാരണ അനുഭവപ്പെടുന്ന ചില കാര്യങ്ങളാണ് താഴെകൊടുത്തിരിക്കുന്നത്. നിങ്ങളെ സംബന്ധിച്ച് അവ എത്രമാത്രം അനുയോജ്യമാണെന്ന് അറിയുക എന്നതാണ് ഈ ചോദ്യാവലിയുടെ ഉദ്ദേശ്യം. ഒരോ പ്രസ്താവനയും വായിച്ച് താഴെ കൊടുത്തിരിക്കുന്ന സൂചിക അനുസരിച്ച് നിങ്ങളുടെ പ്രതികരണം രേഖപ്പെടുത്തുക. ഓരോ പ്രസ്താവനയുടെയും നേർക്ക് SA, A, UD, SD എന്നിങ്ങനെ അക്കങ്ങൾ നൽകിയിട്ടുണ്ട്. അവ യഥാക്രമം

- SA : (Strongly Agree, ശക്തിയായി യോജിക്കുന്നു)
- A : (Agree, യോജിക്കുന്നു)
- UD : (Undecided, അഭിപ്രായമില്ല)
- D : (Disagree, വിരോധിക്കുന്നു)
- SD : (Strongly Disagree, ശക്തിയായി വിരോധിക്കുന്നു)

എന്നിങ്ങനെയാണ് അർത്ഥം.

ഓരോ പ്രസ്താവനയും വായിച്ച് അതിനോട് നിങ്ങൾക്കുണ്ടാകുന്ന പ്രതികരണം എങ്ങനെയാണെന്ന് ഉത്തരങ്ങൾക്ക് നൽകിയിട്ടുള്ള സ്ഥാനത്ത് (✓) ഇട്ട് രേഖപ്പെടുത്തുക.

No.		SA	A	UD	D	SD
1.	ഞങ്ങളുടെ സ്ഥാപനം ഊന്നൽ നൽകുന്നത് മാനുഷികവികസനത്തിനും ഉയർന്ന വിശ്വാസ്യതയിലുമുള്ള പ്രവർത്തനത്തിലാണ്.					
2.	പുതുമയും പുരോഗമനവുമാണ് ഞങ്ങളുടെ സ്ഥാപനത്തെ സംബന്ധിച്ചിടത്തോളം പ്രധാനം					
3.	ഈ സ്ഥാപനം തുടർച്ചയായ തുറന്ന മനസ്സോടുകൂടിയിട്ടുള്ള പ്രവർത്തനത്തിനാണ് പ്രാധാന്യം നൽകുന്നത്.					
4.	ബുദ്ധിമുട്ടിലകപ്പെട്ട സഹപ്രവർത്തകർക്കും മറ്റും ഉദ്യോഗസ്ഥർക്കും ഞാൻ ധർമ്മികമായ പിന്തുണ നൽകാറുണ്ട്.					
5.	ഈ സ്ഥാപനത്തിലെ എല്ലാവരെയും ഒന്നിച്ചു നിർത്തുന്നത് ഇവിടെയുള്ളവർക്കിടയിലുള്ള പരസ്പര വിശ്വാസവും കൂറുമാണ്.					
6.	ഞങ്ങളുടെ സ്ഥാപനത്തിൽ ഉദ്യോഗാർത്ഥികൾക്കിടയിൽ നല്ല പരസ്പര ബന്ധവും പിന്തുണയുമുണ്ട്.					
7.	ഞങ്ങളുടെ സ്ഥാപനത്തിന്റെ ലീഡർഷിപ്പ് പുതുമയുള്ളതും മറ്റുള്ളവർക്ക് ഉദാഹരണമാക്കാവുന്നതുമാണ്.					
8.	എന്റെ മേലധികാരി ഓരോ പുതിയ ആശയങ്ങളെയും വിലയിരുത്തുകയും അവ നടപ്പിലാക്കുകയും ചെയ്യുന്ന ആളാണ്.					
9.	ഞങ്ങളുടെ സ്ഥാപനത്തിൽ ലീഡർഷിപ്പ് എന്നതുകൊണ്ട് അർത്ഥമാക്കുന്നത് നല്ല മാർഗ്ഗ നിർദ്ദേശങ്ങൾ കൊടുത്ത് മറ്റുള്ളവരുടെ കഴിവുകളെ പരിപോഷിപ്പിക്കുക എന്നതാണ്.					
10.	ഈ സ്ഥാപനത്തിൽ എല്ലാ ഉയർന്ന ഉദ്യോഗസ്ഥരും വളരെ സമീപന മനോഭാവമുള്ളവരാണ്.					
11.	പ്രശ്നങ്ങളുടെയെല്ലാക്കുകയാണെങ്കിൽ അവയെ നേരിടാനുള്ള മനസ്സ് സ്ഥാപനത്തിലെ മേലധികാരിയ്ക്കുണ്ട്.					
12.	സ്ഥാപനത്തിന്റെ മിഷൻ ഉദ്യോഗസ്ഥർക്കിടയിൽ ഒരേസമയം ഉത്സാഹവും പ്രചോദനവുമാകുന്നു.					
13.	ഞങ്ങളുടെ സ്ഥാപനം സമയാസമയങ്ങളിൽ വളരെ ഫലപ്രദമായ രീതിയിൽ ഉദ്യോഗസ്ഥരുമായി ആശയവിനിമയം നടത്താറുണ്ട്.					
14.	ഞങ്ങളുടെ ജോലി സംബന്ധമായ വ്യവസ്ഥകൾ വർഷത്തിലൊരിക്കൽ സ്ഥാപനം വിലയിരുത്താറുണ്ട്. ആവശ്യമെങ്കിൽ അതിനു മുമ്പും പരശോധിക്കാറുണ്ട്.					
15.	ഞങ്ങളുടെ സ്ഥാപനം അതിന്റെ ലക്ഷ്യം പ്രാപ്തമാക്കുവാൻ പോരുന്ന രീതിയിൽ മികച്ചതാണ്.					
16.	എന്റെ സ്ഥാപനം എന്റെ നിർദ്ദേശങ്ങളെ വിലവെയ്ക്കാറുണ്ട്.					
17.	ചെയ്യുന്ന ജോലിക്ക് അർത്ഥവും ഗതിയും നിർണ്ണയിക്കാൻ പാകത്തിനുള്ള വ്യക്തമായ ലക്ഷ്യങ്ങൾ സ്ഥാപനത്തിനുണ്ട്.					

18.	പുതിയ ധനാഗമമാർഗ്ഗം കണ്ടുപിടിക്കുക, പുതിയവെല്ലുവിളികളെ സൃഷ്ടിക്കുക തുടങ്ങിയ കാര്യങ്ങളിലൂന്നിയാണ് ഞങ്ങളുടെ സ്ഥാപനം മുന്നോട്ട് നീങ്ങുന്നത്.						
19.	ഓരോ പുതിയ വിവരങ്ങളും ഓരോരുത്തരും അറിയുന്ന രീതിയിലാണ് എല്ലാവരേയും സ്ഥാപനം ധരിപ്പിക്കാനുള്ളത്.						
20.	സ്ഥാപനത്തിലെ വിവിധ ഭാഗങ്ങൾക്കിടയിലുള്ള സഹകരണം എല്ലാവരും പ്രോത്സാഹിപ്പിക്കുന്ന ഒരു കാര്യമാണ്.						
21.	എന്റെ വർക്ക് ഗ്രൂപ്പിന്റെ ഭാവിയെക്കുറിച്ച് ഞാൻ ശ്രദ്ധാപൂർവ്വം ചിന്തിക്കുന്നുണ്ട്.						
22.	എന്റെ വർക്ക് ഗ്രൂപ്പിനൊപ്പം ജോലി ചെയ്യാൻ വേണ്ടി ഞാൻ ഏതു രീതിയിലുള്ള ഉത്തരവാദിത്വങ്ങളും ഏറ്റെടുക്കുന്നുണ്ട്.						
23.	എന്നെ സംബന്ധിച്ചിടത്തോളം ഞാനിപ്പോൾ ഭാഗമായിട്ടുള്ള വർക്ക് ഗ്രൂപ്പാണ് ഏറ്റവും മികച്ചത്.						
24.	എന്റെ വർക്ക് ഗ്രൂപ്പിന്റെ ഒരു ഭാഗമാണെന്നു പറയുന്നതിൽപ്പോലും ഞാൻ അഭിമാനിക്കുന്നു.						
25.	ഞങ്ങളുടെ ടീമാണ് ജോലിയുടെ തറക്കല്ല്.						
26.	എല്ലാവരും ഗ്രൂപ്പിന്റെ ഒരു ഭാഗം എന്ന രീതിയിൽത്തന്നെയാണ് ജോലി ചെയ്യുന്നത്						
27.	ടീമിലെ ഓരോ അംഗത്തിന്റെയും വിജയം ഞങ്ങൾ ആഘോഷിക്കുന്നുണ്ട്.						
28.	ഞങ്ങളുടെ സ്ഥാപനത്തിലെ ഭൂരിപക്ഷ തൊഴിലാളികളും അവരവരുടെ ജോലി പൂർണ്ണമായും ഉൾക്കൊണ്ടുതന്നെയാണ് ചെയ്യാനുള്ളത്.						
29.	ജോലി ഏറ്റവും മികച്ച രീതിയിൽ ചെയ്യാനുള്ള പ്രചോദനം എന്റെ വർക്ക് ഗ്രൂപ്പിൽ നിന്ന് എനിക്ക് ലഭിക്കുന്നുണ്ട്						
30.	മാറ്റങ്ങൾ വരുത്തുവാൻ വേണ്ടി സ്ഥാപനത്തിലെ എല്ലാ വിഭാഗത്തിൽപ്പെട്ടവരും സഹകരിക്കുന്നുണ്ട്.						
31.	ഉപഭോക്താക്കളുടെ അഭിപ്രായവും നിർദ്ദേശങ്ങളും സ്ഥാപനത്തെ സംബന്ധിച്ച തീരുമാനങ്ങളെടുക്കുവാൻ ശ്രമിക്കുന്നുണ്ട്.						
32.	പുതിയ ആളുകളെ അന്വേഷിക്കുന്നതിനേക്കാളുപരി ഉള്ളവരെ പ്രോത്സാഹിപ്പിക്കാനാണ് ഞങ്ങളുടെ സ്ഥാപനം ശ്രമിക്കുന്നത്.						
33.	ഞങ്ങളുടെ വർക്ക് ഗ്രൂപ്പിൽ ഒരാൾ തെറ്റ് ചെയ്താലും അതിൽ നിന്നും അവർ പൂതിയൊരു പാഠം പഠിക്കുമെന്നു കരുതി അവരോട് സ്ഥാപനം ക്ഷമിയ്ക്കുന്നുണ്ട്.						
34.	പുതിയ ആശയങ്ങൾ ചിന്തിച്ച് പ്രാവർത്തികമാക്കുന്നത് സ്ഥാപനത്തിന്റെ പ്രവർത്തനക്ഷമത വർദ്ധിപ്പിക്കുന്നു.						
35.	ഞങ്ങളുടെ സ്ഥാപനത്തിൽ ഓരോ ഉദ്യോഗസ്ഥരുടെയും പ്രകടനം വിലയിരുത്തുന്നത് അവർക്ക് ഇവിടത്തെ ഓരോ മാറ്റങ്ങളോടും യോജിച്ചു പോകുവാൻ കഴിയുന്നുണ്ടോ എന്നു നോക്കിയിട്ടാണ്.						
36.	ഉദ്യോഗസ്ഥർക്ക് സ്വാതന്ത്ര്യമുള്ളതുകൊണ്ടുതന്നെ ഇവിടെ അച്ചടക്കവുമുണ്ട്.						
37.	ഞങ്ങളുടെ സ്ഥാപനത്തിൽ എല്ലാ നിലയിൽപ്പെട്ടവർക്കും തങ്ങളുടെ അഭിപ്രായങ്ങൾ പറയാനുള്ള സ്വാതന്ത്ര്യമുണ്ട്.						
38.	ഉദ്യോഗസ്ഥർ അവരവരുടെ ജോലിയുമായി ബന്ധപ്പെട്ട കാര്യങ്ങളിൽ സ്വതന്ത്രമായി തീരുമാനങ്ങളെടുക്കുന്നുണ്ട്.						
39.	പുതിയതും കൂടുതൽ മികച്ചതുമായ രീതികൾ ഞങ്ങൾ ജോലിയിൽ ഉപയോഗപ്പെടുത്തുന്നുണ്ട്.						

**Department of Psychology
University of Calicut**

Work Stress Scale

നിർദ്ദേശങ്ങൾ :-നിങ്ങളുടെ ജോലിയുമായി ബന്ധപ്പെട്ട ചില പ്രസ്താവനകളാണ് താഴെ കൊടുത്തിരിക്കുന്നത്. ഇതിൽ തെറ്റോ ശരിയോ ഇല്ല. ഒരോ പ്രസ്താവനയും വായിച്ച് താഴെ കൊടുത്തിരിക്കുന്ന സൂചിക അനുസരിച്ച് നിങ്ങളുടെ പ്രതികരണം രേഖപ്പെടുത്തുക. തരുന്ന വിവരങ്ങൾ ഗവേഷണ ആവശ്യങ്ങൾക്ക് മാത്രമേ ഉപയോഗിക്കുകയുള്ളൂ.

ഒരിക്കലുമില്ല എന്നാണെങ്കിൽ '1' എന്നും
 വിരളമായി എന്നാണെങ്കിൽ '2' എന്നും
 ചിലപ്പോൾ എന്നാണെങ്കിൽ '3' എന്നും
 മിക്കപ്പോഴും എന്നാണെങ്കിൽ '4' എന്നും
 എല്ലായ്പ്പോഴും എന്നാണെങ്കിൽ '5' എന്നും രേഖപ്പെടുത്തുക

നമ്പർ	പ്രസ്താവനകൾ	1	2	3	4	5
1	ഇവിടെ എനിക്കാവശ്യമായ സ്വാതന്ത്ര്യം ലഭിക്കുന്നുണ്ട്.					
2	എന്റെയും സഹപ്രവർത്തകരുടേയും നിർദ്ദേശങ്ങൾ സ്ഥാപനം അനുഭാവപൂർവ്വം പരിഗണിക്കാറുണ്ട്.					
3	സ്ഥാപനത്തിലുണ്ടാകുന്ന മാറ്റങ്ങളുടെ അനിവാര്യത എനിക്കും സഹപ്രവർത്തകർക്കും മനസ്സിലാക്കിത്തരുന്നതിൽ സ്ഥാപനം വിജയിച്ചിട്ടുണ്ട്					
4	ശിക്ഷണനടപടികൾ നടപ്പാക്കുന്നതിൽ സ്ഥാപനം നീതി പുലർത്താറുണ്ട്.					
5	ജോലിഭാരത്തിന് ആനുപാതികമായ ജീവനക്കാർ സ്ഥാപനത്തിലുണ്ട്					
6	സ്ഥാപനം പ്രതീക്ഷിച്ചപോലുള്ള പ്രകടനം എന്നിൽ നിന്നുണ്ടാകാറുണ്ട്					
7	എന്റെ ജോലിയും കുടുംബജീവിതവും നല്ല രീതിയിൽ കൊണ്ടുപോകുവാൻ സ്ഥാപനം സാഹചര്യമൊരുക്കുന്നുണ്ട്.					
8	ജോലിയുമായി ബന്ധപ്പെട്ട നിർദ്ദേശങ്ങൾ മേലുദ്യോഗസ്ഥരിൽ നിന്നും സഹപ്രവർത്തകരിൽ നിന്നും എനിക്ക് കൃത്യമായി ലഭിക്കാറുണ്ട്.					
9	എന്റെയും സഹപ്രവർത്തകരുടേയും ജോലിസംബന്ധമായ പ്രതിസന്ധി ഘട്ടങ്ങളിൽ സ്ഥാപനം ക്രിയാത്മകമായി ഇടപെടാറുണ്ട്					
10	ജോലി സംബന്ധമായി എനിക്കുണ്ടാകുന്ന നേട്ടങ്ങളിൽ സ്ഥാപനം അനുഭവിക്കാറുണ്ട്					
11	സ്ഥാപനത്തിലെ സഹപ്രവർത്തകരുമായി എനിക്ക് നല്ല ബന്ധമാണുള്ളത്.					
12	എന്റെ അഭിരുചിക്കനുസരിച്ചാണ് മേലുദ്യോഗസ്ഥരും സഹപ്രവർത്തകരും എനിക്ക് ജോലി വിഭജിച്ചു തരുന്നത്.					
13	ഏൽപ്പിച്ച ജോലി കൃത്യസമയത്തിനുള്ളിൽ പൂർത്തിയാക്കുവാൻ എനിക്ക് സാധിക്കുന്നുണ്ട്.					
14	സ്ഥാപനത്തിലുണ്ടാകുന്ന മാറ്റങ്ങളെ സംബന്ധിച്ചുള്ള കൃത്യമായ വിവരങ്ങൾ ഞാൻ അറിയാറുണ്ട്					
15	ജോലി സംബന്ധമായ ബുദ്ധിമുട്ടുണ്ടാകുമ്പോൾ സഹപ്രവർത്തകർ എന്നെ സഹായിക്കാറുണ്ട്					
16	ജീവനക്കാരിൽ ചിലരോട് മേലുദ്യോഗസ്ഥർ പക്ഷപാതം കാണിക്കാറുണ്ട്.					
17	തന്നിരിക്കുന്ന ജോലി സുഗമമായി ചെയ്യാനുള്ള സജ്ജീകരണങ്ങൾ എനിക്കിവിടെലഭ്യമാണ്.					
18	എനിക്ക് എന്റെ ജോലി ആസ്വദിച്ച് ചെയ്യാനുള്ള സാഹചര്യം സ്ഥാപനത്തിലുണ്ട്.					
19	ജീവനക്കാരും സ്ഥാപനവും തമ്മിലുള്ള ബന്ധം സുഗമമാക്കാൻ ആവശ്യമായ ആശയവിനിമയ ഉപാധികൾ സ്ഥാപനം കൈക്കൊള്ളാറുണ്ട്.					
20	സ്ഥാപനത്തെക്കുറിച്ച് ക്രിയാത്മകമായി വിമർശിക്കുവാൻ എനിക്ക് സ്വാതന്ത്ര്യമുണ്ട്.					
21	ആശയക്കുഴപ്പം നിലനിൽക്കുന്നതിനാൽ എന്റെ ജോലി മറ്റുള്ളവരും, മറ്റുള്ളവരുടെ ജോലി ഞാനും ചെയ്യേണ്ടിവരാറുണ്ട്.					