

**EDUCATIONAL AND OCCUPATIONAL STATUS AND
INTERGENERATIONAL MOBILITY AMONG MUSLIM
AND NON-MUSLIM WOMEN IN KERALA:
A COMPARATIVE ANALYSIS**

Thesis submitted to the
University of Calicut
for the award of the degree of
Doctor of Philosophy in Economics

By
JAMEELA K.

Under the Supervision of
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MARCH 2026

Declaration

I, Jameela K., hereby declare that this Ph.D. thesis entitled, “**Educational and Occupational Status and Intergenerational Mobility among Muslim and Non-Muslim Women in Kerala: A Comparative Analysis**” is a bona fide record of research work done by me for the fulfillment of the award of the degree of Doctor of Philosophy, under the guidance and supervision of Dr. Rejimon P. M., Professor and Head, Post Graduate and Research Department of Economics, Mar Dionysius College, Pazhanji. I also declare that this thesis has not been submitted earlier for the award of any degree, diploma, fellowship or any other similar title. The contents of the thesis are undergone a plagiarism check using iThenticate software at C.H.M.K. Library, University of Calicut, and the similarity index found within the permissible limit. I also declare that the thesis is free from AI-generated content.



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This is to certify that the thesis entitled **“Educational and Occupational Status and Intergenerational Mobility among Muslim and Non-Muslim Women in Kerala: A Comparative Analysis”** is a record of the bona fide research work done by **Mrs. Jameela K.**, Part-time Research Scholar under my supervision and guidance in the Post Graduate and Research Department of Economics, Mar Dionysius College (Affiliated to University of Calicut), Pazhanji, Thrissur, Kerala. The thesis is the outcome of her original work and has not formed the basis for the award of any Degree, Diploma, Associateship, Fellowship or any other similar title and is worth submitting for the award of the Degree of Doctor of Philosophy in Economics, University of Calicut. All the relevant corrections and modifications recommended by the Doctoral Committee during the pre-submission seminar have been incorporated in the thesis.

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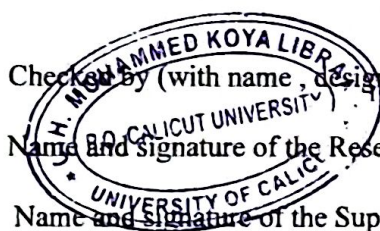
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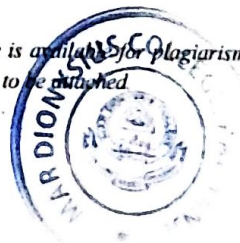
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Jameela K

Abstract

The present study focuses on Muslim women's educational attainment, employment, and occupational status, as well as intergenerational educational and occupational mobility, in comparison with non-Muslim women in Kerala. The study collected data from 704 women aged 25 to 54 years using multistage stratified random sampling from the Muslim and non-Muslim communities across the three districts of Kerala: Malappuram, Ernakulam, and Kollam. Statistical tools such as Chi-square tests, transition matrices, Bartholomew Index, Direction-sensitive indices, Blinder-Oaxaca index, OLS regression, Multinomial regression analysis are used to analyse these objectives. There are four main objectives for the present study:

First, to assess and compare the current educational attainment of Muslim and non-Muslim women in Kerala. Within these objectives, the study aims to analyse the relative educational attainment of Muslim and non-Muslim women, the incidence of educational discontinuity, the reasons for discontinuity, and the challenges both groups face in pursuing education. Based on the first objective, the study showed that women in Kerala have achieved moderate to high levels of educational attainment overall. However, consistent disparities persist between Muslim and non-Muslim women, as Muslim women report fewer years of schooling, are underrepresented in higher education, and face higher risks of discontinuity. Early marriage or family responsibilities are the most important reasons for Muslim women, and financial constraints are the most important reasons for non-Muslim women for educational discontinuity.

The second objective is to evaluate the current employment status and occupational structure of Muslim women in comparison to their non-Muslim counterparts. This objective includes employment status, occupational structure, as well as reasons for employment and unemployment of Muslim and non-Muslim women in Kerala. The analysis of employment and occupational status shows that Muslim and non-Muslim women in Kerala have broadly comparable levels of labour market

engagement. Both groups demonstrate moderate participation, with large proportions either in full-time work or homemaking, and smaller segments engaged in part-time or self-employment. Occupational structures also reveal similarity, with most employed women concentrated in professional and respected roles such as teaching, healthcare, and skilled self-employment, and very limited representation in higher-prestige entrepreneurial positions. Although motivations and barriers to employment differ, Muslim women more often cite family encouragement, social expectations, and childcare, and non-Muslim women emphasise economic necessity and lack of job opportunities, the overall distribution of employment and occupational outcomes does not significantly differ between the groups.

The third objective of the study is to analyse the extent, patterns, and determinants of intergenerational educational mobility among Muslim and non-Muslim women in Kerala. This objective describes mobility patterns using transition matrices, computes summary mobility indices, estimates regression models of intergenerational schooling transmission, decomposes Muslim-non-Muslim differences in daughters' schooling into endowments and structural components, and analyses the intensity, absolute gains, and subjective analysis of educational mobility. Based on the third objective the study showed that women in both communities have experienced substantial absolute upward educational mobility relative to their mothers, particularly among women whose mothers had very little or no schooling. But this upward movement was not equally distributed. Muslim women recorded larger upward mobility than non-Muslim women. This upward movement reflected from the lower maternal education baseline of Muslim households. At the same time, non-Muslim women showed higher absolute levels of educational attainment in both generations and were more strongly clustered in the highest schooling categories. Thus, when mobility was measured in relative or incremental terms, Muslims represent higher; when measured in absolute attainment, non-Muslims continued to hold the advantage

Fourth objective of the study presents the foundational evidence through intergenerational occupational transition matrices and associated tests of persistence, summarises the composition of directional mobility (downward, immobile, upward),

employs summary mobility indices to quantify the magnitude and net direction of occupational mobility, examines the distribution of the occupational step-difference (OSD) by religious group, models the determinants of mobility, analysing both direction (via multinomial logistic regression) and magnitude (via ordinary least squares regression) and explores the subjective dimension through an assessment of perceived intergenerational occupational mobility. Based on the fourth objective study found that immobility remains the most common feature among both religious groups. Among those who do experience mobility, upward occupational movement is marked more common than downward movement. Muslim women represent longer upward trend than non-Muslim women. Non-Muslim women, meanwhile, show a more dispersed distribution, with slightly more downward steps alongside small-to-moderate upward movements. The differences between groups are statistically significant but substantively small, indicating broadly similar mobility regimes with subtle differences in the distribution of gains.

The study provides valuable insights for implementing appropriate policy decision to uplift Muslim women in terms of educational and occupational attainment as well as improving their intergeneration mobility.

Keywords: Education, Employment, Occupation, Muslim women, non-Muslim women, Intergenerational education mobility, Intergenerational occupation mobility, upward mobility, downward mobility, Immobility. Maternal education,

സംഗ്രഹം

ഈ പഠനം കേരളത്തിലെ മുസ്ലിം വനിതകളുടെ വിദ്യാഭ്യാസനിലവാരം, തൊഴിൽ, തൊഴിൽസ്ഥിതി, കൂടാതെ തലമുറകൾക്കിടയിലെ വിദ്യാഭ്യാസവും തൊഴിൽമാറ്റവും (intergenerational mobility) അമുസ്ലിം വനിതകളുമായി താരതമ്യത്തിൽ പരിശോധിക്കുന്നതിനെക്കുറിച്ചാണ് കേന്ദ്രീകരിക്കുന്നത്. ഈ പഠനത്തിന് 25 മുതൽ 54 വയസ്സു വരെയുള്ള 704 വനിതകളിൽ നിന്ന് മൾട്ടിസ്റ്റേജ് സ്ട്രാറ്റിഫൈഡ് റാൻഡം സാമ്പിളിംഗ് ഉപയോഗിച്ച് ഡാറ്റ ശേഖരിച്ചു. ഗവേഷണം കേരളത്തിലെ മൂന്ന് ജില്ലകളിൽ നിന്നുള്ള മുസ്ലിം, അമുസ്ലിം സമൂഹങ്ങളിൽ നിന്നാണ്: മലപ്പുറം, എറണാകുളം, കൊല്ലം. പഠനവശ്യകതകൾ വിശകലനം ചെയ്യുന്നതിന് Chi-square ടെസ്റ്റുകൾ, ട്രാൻസിഷൻ മെട്രിക്സ്, Bartholomew സൂചിക, Direction-sensitive സൂചികകൾ, Blinder-Oaxaca സൂചിക, OLS റെഗ്രഷൻ, മൾട്ടിനോമിയൽ റെഗ്രഷൻ അനാലിസിസ് തുടങ്ങിയ ഉപകരണങ്ങൾ ഉപയോഗിച്ചു. നിലവിലെ പഠനത്തിന് നാല് പ്രധാന ഉദ്ദേശ്യങ്ങളുണ്ട്:

ഒന്നാമത്തെ ലക്ഷ്യം കേരളത്തിലെ മുസ്ലിം, അമുസ്ലിം വനിതകളുടെ നിലവിലെ വിദ്യാഭ്യാസനിലവാരം വിലയിരുത്തി താരതമ്യം ചെയ്യുക: ഈ ഉദ്ദേശ്യത്തിൽ, വനിതകളുടെ വിദ്യാഭ്യാസ നിലവാരം, വിദ്യാഭ്യാസത്തിലുണ്ടാകുന്ന ഇടവേളകൾ (discontinuity), ഇടവേളയ്ക്കുള്ള കാരണങ്ങൾ, പഠനത്തിൽ നേരിടുന്ന വെല്ലുവിളികൾ എന്നിവ വിശകലനം ചെയ്യപ്പെടുന്നു. പഠനഫലപ്രകാരം, കേരളത്തിലെ വനിതകൾക്ക് പൊതുവെ മധ്യമ മുതൽ ഉയർന്ന വിദ്യാഭ്യാസനിലവാരമുള്ളതായി കണ്ടെത്തി. എങ്കിലും മുസ്ലിം, അമുസ്ലിം വനിതകളിൽ സ്ഥിരമായ വ്യത്യാസങ്ങൾ നിലനിൽക്കുന്നു; മുസ്ലിം വനിതകൾ കുറവ് വർഷങ്ങൾ പഠിച്ചിട്ടുണ്ടെന്നും, ഉയർന്ന വിദ്യാഭ്യാസത്തിൽ പ്രാതിനിധ്യം കുറവുണ്ടെന്നും, പഠന ഇടവേളയിലേക്കുള്ള അപകടം കൂടുതലാണ് എന്നും കണ്ടെത്തി. മുസ്ലിം വനിതകളിൽ വേഗത്തിൽ വിവാഹം കഴിക്കൽ അല്ലെങ്കിൽ കുടുംബ ഉത്തരവാദിത്വങ്ങൾ പ്രധാന കാരണങ്ങളാണ്; അമുസ്ലിം വനിതകളിൽ സാമ്പത്തിക ബുദ്ധിമുട്ടാണ് പ്രധാന കാരണം.

രണ്ടാമത്തെ ലക്ഷ്യം നിലവിലെ തൊഴിൽ നിലയും തൊഴിൽ ഘടനയും വിലയിരുത്തുക: തൊഴിൽ നില, തൊഴിൽ ഘടന, തൊഴിലിൽ പങ്കെടുക്കാനും, പങ്കെടുക്കാതിരിക്കാനുമുള്ള കാരണങ്ങൾ, എന്നിവയും പരിശോധിച്ചു. വിശകലനം പ്രകാരം, കേരളത്തിലെ മുസ്ലിം, അമുസ്ലിം വനിതകൾക്ക് ജോലി തൊഴിൽ വിപണിയിലെ പങ്കാളിത്തം പൊതുവെ സമാനമാണ്. രണ്ടുപേരും മധ്യമപങ്കാളിത്തം കാണിക്കുന്നു; മുഴുവൻ സമയ ജോലിയും ഗൃഹജീവിതവും പ്രധാനമാണ്, ചെറിയ ശതമാനം ഭാഗിക ജോലികളിലോ സ്വയം തൊഴിൽ മേഖലകളിലോ പ്രവർത്തിക്കുന്നു. തൊഴിൽ ഘടനയും സമാനമാണ്; അധ്യാപനം, ആരോഗ്യപരിചരണം, വിദഗ്ദ്ധ സ്വയം തൊഴിൽ മേഖലകളിൽ കൂടുതലായും, ഉയർന്ന അഭിമാനകരമായ സംരംഭക മേഖലകളിൽ വളരെ പരിമിതമായ പ്രാതിനിത്യവുമാണ്. ജോലിക്ക് പ്രേരണയും തടസ്സങ്ങളും വ്യത്യസ്തമാണ്; മുസ്ലിം വനിതകൾക്ക് കുടുംബത്തിന്റെ പിന്തുണ, സാമൂഹിക പ്രതീക്ഷകൾ, കുട്ടികളുടെ പരിചരണം പ്രധാനമാണ്, അമുസ്ലിം വനിതകൾ സാമ്പത്തിക ആവശ്യകതയും തൊഴിൽ അവസരങ്ങളുടെ അഭാവവും മുൻനിർത്തുന്നു. എന്നാൽ പൊതുവായി തൊഴിൽ ഫലങ്ങൾ ഗ്രൂപ്പുകൾക്കിടയിൽ വലിയ വ്യത്യാസം കാണിക്കുന്നില്ല.

മൂന്നാമത്തെ ലക്ഷ്യം തലമുറകൾക്കിടയിലെ വിദ്യാഭ്യാസമാറ്റത്തിന്റെ വ്യാപ്തി, പാറ്റേണുകൾ, നിർണ്ണായക ഘടകങ്ങൾ വിശകലനം ചെയ്യുക: ട്രാൻസിഷൻ മെട്രിസുകൾ, സംഗ്രഹ മോബിലിറ്റി സൂചികകൾ, തലമുറകളിലെ വിദ്യാഭ്യാസപരമായ പാരമ്പര്യത്തിന്റെ കൈമാറ്റം കണക്കാക്കുന്ന റെഗ്രഷൻ മോഡലുകൾ, മുസ്ലിം-അമുസ്ലിം വ്യത്യാസങ്ങൾ എൻഡൗമെന്റ്സ് (endowments) ആയും ഘടനാപര ഘടകങ്ങളായും, വിദ്യാഭ്യാസ ചലനത്തിന്റെ തീവ്രത പരമമായ നേട്ടങ്ങൾ, ആത്മീയ/ വ്യക്തിപരമായ മാറ്റങ്ങൾ എന്നിവ വിശകലനം ചെയ്യുന്നു. പഠനഫലപ്രകാരം, രണ്ട് സമൂഹങ്ങളിലെയും വനിതകൾക്ക് അമ്മയുടെ വിദ്യാഭ്യാസത്തിന്റെ അടിസ്ഥാനത്തിൽ വലിയ ഉയർന്ന വിദ്യാഭ്യാസമാറ്റം ഉണ്ടായിട്ടുണ്ട്, പ്രത്യേകിച്ച് അമ്മയ്ക്ക് കുറഞ്ഞ വിദ്യാഭ്യാസമാത്രം ഉണ്ടായിട്ടുള്ള വനിതകളിൽ. പക്ഷേ ഉയർച്ച എല്ലാ വിഭാഗത്തിലും സമതുലിതമല്ല. മുസ്ലിം വനിതകൾക്ക് അമുസ്ലിം വനിതകളേക്കാൾ വലിയ ഉയർന്ന മോബിലിറ്റി രേഖപ്പെടുത്തിയിട്ടുണ്ട്, കാരണം അവരുടെ മാതൃകവശം വിദ്യാഭ്യാസം കുറഞ്ഞതുകൊണ്ടാണ്. എങ്കിലും, രണ്ട് തലങ്ങളിലും അമുസ്ലിം വനിതകൾക്ക് കൂടുതൽ ഉയർന്ന വിദ്യാഭ്യാസ നിലവാരവും, ഉയർന്ന വിദ്യാഭ്യാസ വിഭാഗങ്ങളിൽ ക്ലസ്റ്ററിംഗ് കൂടിയും കാണപ്പെടുന്നു. അങ്ങനെ ആപേക്ഷികപരമായ (relative/incremental) മാനദണ്ഡങ്ങളിൽ മുസ്ലിംകൾ ഉയർന്നതാണ്; യഥാർത്ഥ (absolute) നിലവാരത്തിൽ അമുസ്ലിംകൾ മുൻതൂക്കം കൈവരിക്കുന്നു.

നാലാമത്തെ ലക്ഷ്യം തലമുറകൾക്കിടയിലെ തൊഴിൽമാറ്റത്തെ അടിസ്ഥാനമാക്കി പരിശോധന: തൊഴിൽ സംക്രമണ മാട്രിക്സുകളും സ്ഥിരതയുടെ അനുബന്ധ പരിശോധനകളും, ദിശാസൂചന ചലനാത്മകതയുടെ (downward, immobile, upward) ഘടന സംഗ്രഹിക്കുന്നു, തൊഴിൽ ചലനാത്മകതയുടെ വ്യാപ്തിയും മൊത്തം ദിശയും അളക്കുന്നതിന് സംഗ്രഹ ചലനാത്മക സൂചികകൾ ഉപയോഗിക്കുന്നു, മതഗ്രൂപ്പ് അനുസരിച്ച് തൊഴിൽപരമായ ഘട്ടം-വ്യത്യാസത്തിന്റെ (OSD) വിതരണം പരിശോധിക്കുന്നു, ചലനാത്മകതയുടെ നിർണ്ണായകങ്ങളെ മാതൃകയാക്കുന്നു, ദിശ (മൾട്ടിനോമിയൽ ലോജിസ്റ്റിക് റിഗ്രഷൻ വഴി) മാണിറ്റർഡ് (സാധാരണ ലീസറ്റ് സ്ക്വയറുകൾ റിഗ്രഷൻ വഴി) എന്നിവ വിശകലനം ചെയ്യുന്നു, തലമുറകൾക്കിടയിലുള്ള തൊഴിൽപരമായ അചഞ്ചലതയാണ് രണ്ട് മത മൂല്യങ്ങൾക്കിടയിലുള്ള ഏറ്റവും വലിയ സവിശേഷത. മുസ്ലിം വനിതകൾക്ക് ഉയർന്ന occupational trend ദീർഘകാലമാണ്, അമുസ്ലിം വനിതകൾക്ക് ഉയർന്നതും താഴ്ന്നതും തമ്മിൽ വ്യത്യാസപ്പെട്ട വിതരണമാണ്. ഗ്രൂപ്പുകൾക്കിടയിലെ വ്യത്യാസങ്ങൾ പദാർത്ഥശാസ്ത്രപരമായി പ്രാധാന്യമുള്ളതാണ്, പക്ഷേ ആകെ വ്യത്യാസം ചെറിയതായാണ്; ചലനാത്മകതയുള്ളവരിൽ മുകളിലേക്കുള്ള ചലനാത്മകത താഴേക്കുള്ള ചലനാത്മകതയെക്കാൾ കൂടുതലാണ്. ഇതു സമാനമായ ചലനാത്മക സാഹചര്യങ്ങൾ കാണിക്കുന്നു.

ഈ പഠനം മുസ്ലിം സ്ത്രീകളുടെ വിദ്യാഭ്യാസവും തൊഴിൽ നേട്ടങ്ങളും ഉയർത്തുന്നതിനും അവരുടെ തലമുറകൾക്കിടയിലെ സാമൂഹിക സാമ്പത്തിക മുന്നേറ്റം മെച്ചപ്പെടുത്തുന്നതിന് അനുയോജ്യമായ നയതന്ത്ര തീരുമാനങ്ങൾ നടപ്പിലാക്കുന്നതിന് ആവശ്യമായ വിലപ്പെട്ട അറിവുകൾ നൽകുന്നു.

കീവേഡുകൾ: വിദ്യാഭ്യാസം, തൊഴിൽ, ജോലി, മുസ്ലിം സ്ത്രീകൾ, അമുസ്ലിം സ്ത്രീകൾ, തലമുറകൾ തമ്മിലുള്ള ചലനം, മുകളിലേക്കുള്ള ചലനം, താഴേക്കുള്ള ചലനം, അചഞ്ചലത, മാതൃ വിദ്യാഭ്യാസം.

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Chapter 1

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List of Abbreviations

AIC	Akaike Information Criteria
AMEs	Average Marginal Effects
AUC	Area Under the ROC Curve
AVE	Average Variance Extracted
BIC	Bayesian Information Criteria
B–O	Blinder–Oaxaca
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CMIN/DF	Chi-square/degrees of Freedom Ratio
CR	Composite Reliability
DS	Daughter’s Years of Schooling
EDM	Educational Mobility.
EFA	Exploratory Factor Analysis
EMI	Educational Mobility Intensity
ESD	Educational Step Difference
FLF	Female Labour Force
FLFP	Female Labour Force Participation
GDP	Gross Domestic Product
HC3	Heteroskedasticity-Consistent Robust Standard Errors
IESG	Intergenerational Educational Schooling Gap
IIA	Independence-of-Irrelevant-Alternatives
KMO	Kaiser–Meyer Olkin
LSGIs	Local Self -Government Institutions
MG-CFAs	Multi-Group Confirmatory Factor Analyses
MLE	Maximum Likelihood Estimation
MLR	Multinomial Logistic Regression
NCAER	National Council of Applied Economic Research
NITI	National Institution for Transforming India

OBCs	Other Backward Classes.
OECD	Organisation for Economic Co-operation and Development.
OLS	Ordinary Least Squares
OSD	Occupational Step-Difference
PIEM	Perceived Intergenerational Educational Mobility
PIOM	Perceived Intergenerational Occupational Mobility
RESET	Regression Equation Specification Error Test
RMSEA	Root Mean Square Error of Approximation
RRR	Relative Risk Ratios
SC/STs	Scheduled Castes and Scheduled Tribes
SD	Standard Deviation
SE	Standard Errors
SRMR	Standardised Root Mean Residual
VIF	Variance Inflation Factor

Chapter 1

INTRODUCTION

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Chapter 1

INTRODUCTION

1.1 Introduction

Over the past century, human welfare has changed significantly due to improvements in education, occupational diversity, and increased economic well-being (Agrawal et al., 2024; Deutschmann et al., 2025; OECD, 2025). By improving skills, productivity, and human capital, educational advancement is a major factor in human development and fosters social mobility and economic growth (Gupta & Hussain, 2021; Khan, 2024). Global literacy rate has increased from about 42% in 1960 to roughly 87% in 2022 due to policies that support universal education and international development (Buchholz, 2022). Individual capabilities have increased and intergenerational social mobility has been made possible by improved access to education (Sen, 1999). Concurrently, occupational structures worldwide have shifted from agrarian to industrial and service-sector economies, resulting in changes in income distribution, employment aspirations, and social status (von Borries et al., 2024). Moreover, economic well-being has also increased globally, as indicated by higher per capita incomes and reductions in extreme poverty, although significant inequalities remain both within and among nations (OECD, 2024).

India, currently the fourth-largest economy globally, is also undergoing a significant transformation in education and the workforce. (Times of India, 2025). After independence, India prioritised education for nation-building, leading to a literacy surge from 18 per cent in 1951 to 77.7 per cent in 2021 (Government of India, 2021), with both men and women advancing in achievement. As a result of these educational improvements, the workforce underwent significant changes, shifting from primarily agriculture—over 70 per cent in 1950—to a rapidly expanding service sector in recent years (NITI Aayog, 2020). All these led to the improvements in economic growth and living standards (The Economic Times, 2025). Despite economic growth and higher living standards, income inequality and

gender gaps persist., leading to lower workforce participation among women, particularly for minorities (Oxfam India, 2022).

Kerala presents a unique case within India, often cited as a model of social development. The state has positioned near-universal literacy, high female education, and laudable progress in human development indicators (Kannan et al., 1991). However, Kerala still displays notable differences between regions, social classes, and religious communities. Among these differences, one particularly important and little-studied aspect of inequality is the educational, occupational attainment, and intergenerational mobility between Muslim and non-Muslim women.

Existing literature shows that, though Kerala has achieved overall socioeconomic progress, Muslim women still face significant obstacles to formal employment and higher education. Established patriarchal family expectations that place a higher value on household duties than on paid work, and limited access to fulfilling employment opportunities even after they have achieved sufficient qualifications, are some of these obstacles (Jumanath, 2024). Despite the fact that remittances enhance household income and women's educational access, they simultaneously reduce their economic necessity to work, which has also constrained women's workforce participation and the full realisation of educational gains (Centre for Public Policy Research, 2023).

However, studies on Kerala's Muslim community also indicate that younger Muslim women have achieved higher levels of educational attainment and improved occupational status compared to their mothers, despite the persistence of restrictive gender norms and socio-cultural constraints within families and communities (Zachariah & Rajan, 2012). Therefore, to systematically assess the extent and nature of this progress across generations, an intergenerational mobility study is essential.

Intergenerational mobility refers to the extent to which individuals' educational and occupational outcomes differ from those of their parents, thereby representing the openness of a society and the degree of equality of opportunity (Becker & Tomes, 1986). High intergenerational mobility proposes that social origins exert a limited

influence on individual outcomes, whereas low mobility reflects deep-rooted patterns of social reproduction.

It is critical to understand the intergenerational dynamics of Muslim women's educational and occupational success to evaluate the breadth and sustainability of Kerala's social development model. It is also possible to determine whether Kerala's public investments in welfare and education have been successful in ending cycles of disadvantage among Muslim women by examining the intergenerational mobility.

A comparative study of intergenerational educational and occupational mobility among Muslim and non-Muslim women is essential in order to examine whether Kerala's overall developmental achievements are equitably distributed across communities. By comparing Muslim and non-Muslim women, the study can identify structural inequalities, assess the extent to which educational and occupational returns are transmitted or transformed across generations, and determine whether Muslim women experience upward mobility at the same rate as their counterparts.

So, the present study includes current educational and occupational status, reasons for discontinuity, specific challenges regarding educational attainment, reasons for employment and unemployment, as well as intergenerational mobility and its determinants regarding Muslim and non-Muslim women.

The remaining portion of the chapter is organized as follows: 1.2 gives the statement of the problem, 1.3 describes the study's objectives. 1.4 explains its scope, 1.5 demonstrates its relevance, and 1.6 provides the thesis structure.

1.2 Statement of the Problem

Education and occupation are the central factors that determine the socio-economic conditions and empowerment of women in modern community (Sen, 1999; Kabeer, 2005). Improvements in education, socioeconomic standing, and gender empowerment are anticipated as society becomes more modernized. Kerala has achieved remarkable progress in human development, with pronounced gains in literacy, gender equality, and health. Yet, clear disparities persist among social,

regional, and economic groups (Government of Kerala, 2021). These structural inequalities contribute to relatively lower educational attainment among marginalised communities including Muslims (Government of Kerala, 2021; Kerala State Planning Board, 2017).

Although Kerala has achieved significant progress in literacy and female education, Muslim women in the state continue to encounter structural and socio-cultural barriers that impede their educational and occupational advancement (Jeffrey, 1992). Research in Kerala demonstrates that, despite improved enrolment rates among Muslim girls, their progression into higher education and professional courses remains relatively low (Jibin & Naseema, 2016). This trend is frequently attributed to early marriage, economic constraints, and prevailing conservative social norms (Jumanath, 2024).

Even if education is a key determinant of women's access to formal employment, women's overall labour force participation in Kerala remains low, with Muslim women significantly underrepresented compared to non-Muslim women. Many Muslim women are confined to informal, low-wage, home-based work due to certain restrictive gendered norms (Kabeer, 2016; Mazumdar & Neetha, 2011).

Labour migration to Gulf countries has improved the economic status of many Muslim households in Kerala through remittances; however, these gains have not necessarily translated into increased educational or employment opportunities of women. (Osella & Osella, 2000). As a result, Muslim women still face what may be called a "double disadvantage."- in addition to the gender-based obstacles that all women encounter, they also have to face community-specific limitations (Cherayi & Kumar, 2014).

In this context, it is essential to examine whether Muslim women experience similar levels of educational attainment, occupational status, and intergenerational mobility as non-Muslim women. A systematic comparison between Muslim and non-Muslim women is therefore necessary to assess the extent of disparities, and patterns of mobility across generations.

Therefore, the current study aims to compare the educational and occupational attainment as well as intergenerational mobility aspects of Muslim and non-Muslim women.

1.3 Objectives of the Study

The following are the objectives of the present study

- 1) To assess and compare the current educational attainment of Muslim and non-Muslim women in Kerala.
- 2) To evaluate the current employment, and occupational status of Muslim women in comparison to their non-Muslim counterparts.
- 3) To analyse the extent, patterns, and determinants of intergenerational educational mobility among Muslim and non-Muslim women in Kerala.
- 4) To examine the extent, patterns, and determinants of intergenerational occupational mobility among Muslim and non-Muslim women in Kerala.

1.4 Scope of the Study

The study focuses on the current educational and occupational status, as well as intergenerational mobility, of Muslim and non-Muslim women aged 25 to 54 years in Kerala. This age group was chosen because the majority of women in this age range are expected to finish their formal education and start working. The study analyses key aspects of Muslim and non-Muslim women, including the socio-demographic profile, educational attainment, discontinuity and barriers, employment and occupational status, motivations for employment and reasons for unemployment, and intergenerational educational and occupational mobility and their determinants relative to those of non-Muslim women.

To understand the current levels and patterns of educational and occupational status, the study compares intergroup differences between daughters of Muslim and non-Muslim communities in Kerala. Similarly, the study compares mothers and daughters from Muslim and non-Muslim communities to analyse intergenerational educational and occupational mobility. It investigates whether Muslim women of the

present generation are now on par with women of other religions, including Christians and Hindus ---generally termed as non-Muslim in the present study, in terms of education and occupation and in achieving intergenerational mobility. The study also intends to uncover long-term structural and cultural barriers that continue to influence Muslim women's educational and occupational success by taking into account two generations.

1.5 Relevance of the Study

Studying educational, employment and occupational status and their corresponding intergenerational mobility of Muslim women compared to non-Muslim women is essential to understanding the deeper dimensions of inequality and social stratification in the state. Kerala has a high literacy rate, social development as well as gender empowerment, which is widely discussed in the world as the Kerala Model (Dreze & Sen, 2013). Though Kerala has impressive human development indices, there has not been a similar educational growth across all the social groups. Muslim women especially might be subjected to various social, cultural and economic limitations than non-Muslim women in aspects like accessing higher education level, professional jobs and labour market. By analyzing their present educational and occupational achievement, researchers are able to find existing disparities, institutional obstacles and regions where policy intervention is needed.

Intergenerational mobility examines whether a child's educational and occupational status is strongly linked to their parents' level. Studying intergenerational educational and occupational mobility of Muslim women helps to understand whether the younger generation has gained better education and employment opportunities compared to their mothers'.

The comparative study of educational and occupational attainment and intergenerational mobility among Muslim & non-Muslim women gives insights into the aspects of social justice and inclusive development. It helps in understanding whether government initiatives on minority education, women-empowerment schemes like Kudumbashree and skill development programs are successfully

catering to Muslim women (Devika & Thampi, 2007). Such study further promotes for evidence-based policy decisions aimed at minority upliftment, tackling gender gap and equality in education and employment opportunities.

Therefore, exploring educational and occupational status and mobility among Muslim women in Kerala is not only an academic activity but an essential requirement for ensuring equity in development.

1.6 Structure of the Thesis

The current study is divided into seven chapters. First chapter comprises the introduction, research problem statement, study objectives, scope, and relevance, as well as the thesis structure. The second chapter includes theoretical reviews, and empirical reviews. The third chapter includes data and Methodology. The fourth chapter includes the current educational, employment and occupational status of Muslim and non-Muslim women in Kerala. The fifth chapter examines intergenerational educational mobility of Muslim and non-Muslim women in Kerala; the sixth chapter examines intergenerational occupational mobility of Muslim and non-Muslim women in Kerala; and the seventh chapter summarises the findings, provides a conclusion, outlines policy implications, identifies contributions, notes limitations, and outlines scope for further research.

Chapter 2

THEORETICAL AND EMPIRICAL DEVELOPMENTS IN LITERATURE

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Chapter 2

THEORETICAL AND EMPIRICAL DEVELOPMENTS IN LITERATURE

2.1 Introduction

Muslim women still face many obstacles as women and as members of India's largest minority group, even after the country has been independent for seven decades. Muslim women are among the nation's poorest, most economically disadvantaged, politically excluded, and educationally marginalized groups (NCAER, 2025). Though Kerala's social quality of life index shows marked improvement—particularly in female education, longevity, and health—these improvements are not fully realized by Muslim women. Cultural norms, early/forced marriage, dowry practices, and constrained opportunities both inside and outside marriage result in unequal outcomes for Muslim women relative to the broader goals of the Kerala model (Cherayi & Kumar, 2014; Jafar, 2015).

Analyzing Muslim women's socioeconomic circumstances is essential for improving social justice, inclusive development, and gender equality. The main factors, difficulties, and patterns influencing their standing in various contexts are observed in this review.

The rest of the chapter is arranged in this manner 2.2 lays out the theoretical background, 2.3 presents empirical literature, 2.4 presents important ideas and operational definitions, 2.5 explains the study's conceptual framework, 2.6 identifies research gaps, and 2.7 provides conclusion.

2.2 Theoretical Background

The study examines the educational, occupational attainment and intergenerational mobility of Muslim women through the theoretical frameworks of Social Reproduction Theory, Becker-Tomes Model and Institutional Theory.

2.2.1 Social Reproduction Theory

Social Reproduction Theory, highly influenced by Marxist thought, gives a critical view regarding the intergenerational transmission of inequality in education and occupation among Muslim women. Based on the analysis of Marx's (1867) that explains how capitalist societies reproduce class structures; the theory was later developed by Bourdieu (1977) to include cultural and social capital as instruments of reproduction. Marx stressed that the economic base shapes social organizations, including education, which function to support existing class relations. Building on this, Bourdieu argued that education systems create social hierarchies by reproducing cultural capital that benefits dominant groups while marginalizing others (Bourdieu, 1977; Farid et al, 2021).

These dynamics shows Muslim women's limited access to professional and educational opportunities. Research shows that daughters' educational attainment is significantly influenced by their parents' socioeconomic status and literacy, which perpetuates cycles of inequality (Jeffery & Basu, 1996). Muslim women's access to higher education and skilled employment is further controlled by cultural norms surrounding early marriage and household duties, which are frequently maintained by patriarchal structures (Basant & Shariff, 2010; Sachar Committee Report, 2006). This supports Marx's view that institutions and ideology sustain the status quo, facilitating the economic dependence of marginalized groups like women from minority religion.

Persistent structural barriers, such as insecure, low-paying jobs, limited professional networking opportunities, and discrimination in the labour market, continue to limit Muslim women's occupational mobility (Basant & Shariff, 2010; Hasan & Menon, 2004). This demonstrates how patriarchal systems and capitalist economies interact to enhance current disparities among Muslim women in Marx's viewpoint.

Thus, social reproduction theory, analysed by Marx, helps to describe why Muslim women often experience limited intergenerational mobility. Understanding

these progressions is important for designing interferences that challenge deep-rooted inequalities and create pathways for equitable educational, occupational, and economic opportunities.

2.2.2 Becker-Tomes Model

Intergenerational mobility can be analysed using the foundational framework developed by the Becker and Tomes model (1979; 1986). With its roots in human capital theory, it emphasizes that parental preferences and resources, limited by available credit and income, determine the amount of money spent on children's education and developmental opportunities. Future socioeconomic outcomes for children are influenced by two main aspects: direct parental investment in health and education, inherited endowments such as social capital, cultural values, and cognitive ability (Becker & Tomes, 1979, 1986). Socioeconomic inequality is likely to be sustained when parents have limited resources or cultural norms that limit intergenerational mobility.

By using this model on Muslim women, the relationship between gender, religion, and socioeconomic status is brought to light. Parental decisions that are influenced by cultural and religious norms in addition to financial returns frequently act as a moderator for educational mobility. Despite general improvements among women across the country, research in India, for instance, shows that Muslim women have achieved less upward educational mobility than other groups (Desai & Kulkarni, 2008; Thorat & Neuman, 2012). This is consistent with the Becker-Tomes framework, which states that investments are limited and upward mobility is restricted in situations where parental resources are limited or gender norms discourage female education.

The complexity is further demonstrated by occupational mobility. Although the model assumes that educational attainment leads to occupational gains, this relationship is deteriorated for Muslim women due to structural and cultural barriers. Opportunities are limited by occupational segregation, discrimination in the labour market, and restricted access to professional networks, even in the presence of educational advancements. According to studies conducted in South Asia and the

West, Muslim women who are openly observable frequently experience discrimination in the hiring process and are underrepresented in higher-status professions (Khattab & Modood, 2015; Tariq & Syed, 2017). This departure from model predictions highlights the ways in which returns to human capital are mediated by institutional and cultural contexts.

Overall, the Becker-Tomes model provides a strong framework for examining the transmission of status across generations, but when applied to Muslim women, It indicates the necessity of placing parental investment choices in the context of larger institutional and cultural structures. The educational and occupational mobility of Muslim women across generations is therefore influenced by systemic inequalities and gendered cultural norms that facilitate the returns on human capital investments.

2.2.3 Institutional Theory

According to institutional theory, both formal structures—such as laws, policies, schools, and labour markets—as well as informal norms—such as culture, religion, and family expectations—have an impact on social outcomes (Scott, 2014). Furthermore, according to feminist institutionalism, institutions are gendered and integrate norms that control women's access to education and employment (Mackay et al., 2010). Given that a variety of patriarchal, cultural, and religious institutions shape Muslim women's life paths, this framework is especially relevant to understanding their intergenerational mobility.

Institutional contexts frequently act as intermediaries in Muslim women's educational mobility. Although more Muslim women are attending school, structural obstacles like coeducational restrictions, gender-segregated education, and veiling customs still bound results (Abidi, 2015). In accordance with the status hypothesis, education can serve as symbolic capital in certain situations, cultivating marriage prospects rather than guaranteeing labour force participation (Bourdieu, 1977/1990).

Institutionalized gender norms further limit occupational mobility. Women's chances of formal employment are weakened by discriminatory labour market practices and constrictive community norms, even when they attain higher education

(Jayachandran, 2015). Many find that working outside the home is socially defamed, which hinders their ability to improve in their careers over time.

In conclusion, institutional theory clarifies why Muslim women's intergenerational mobility is still unequal: firmly ingrained gendered norms within institutions restrict the ability to translate education into economic and occupational advancement, even though formal structures may enhance access to education.

2.3 Empirical Literature

The survey of empirical literature focused on the concept of intergenerational mobility, particularly the mobility of Muslim women, and on various aspects of their educational and occupational mobility. These are classified under five headings. They are the concepts of intergenerational mobility, intergenerational mobility of women, intergenerational mobility of Muslim women, intergenerational educational mobility of Muslim women, and intergenerational occupational mobility of Muslim Women. They are discussed below.

2.3.1 Intergenerational mobility

Intergenerational mobility is the degree to which a person's socioeconomic standing is different from that of their parents (Björklund & Jäntti, 2020; Blanden, 2009; Fox et al., 2017; Torche, 2015; Vän et al., 2021). It provides information about inequality of opportunity in a society (Björklund & Jäntti, 2020; Deutscher & Mazumder, 2023; Torche, 2015).

It can be measured by education, occupational status, social class, individual earnings or family income. Most people's socioeconomic standing is influenced by their parents' socioeconomic status. So, individuals who come from poor families are likely to remain poor as adults, and as a result, inequality will increase (Blanden, 2009). It is a function of parental education, occupation, and income, and taking only one of them for calculating intergenerational mobility will underestimate the persistence of economic advantage over generations (Clark, 2013).

Intergenerational mobility for the population as a whole has stayed constant since liberalisation, but cross-group changes have been considerable (Asher et al., 2018). Intergenerational mobility is higher among individuals at the top levels of education than among those with lower levels (Torche, 2018). Differences in intergenerational educational mobility are evident across castes and regions in India. The upward mobility is lower among SC and ST groups than among higher castes for both males and females (Choudhary, 2016). According to Guha and Roy's analysis, the backward castes have also shown greater levels of mobility and upward mobility in comparison to the forward castes, representing that they are moving up the professional ladder (Guha & Roy, 2022).

2.3.2 Intergenerational Mobility for Women

The status of women is not a one-dimensional concept; rather, it is a configuration of status in various areas of life, such as family, politics, work, and education. Which may or may not be connected. Accordingly, improvements and modifications in one status indicator do not always correspond to improvements in other indicators (Rothschild, 1975).

Research shows that improving women's economic status has broad societal benefits, including poverty reduction, higher household investments in health and education, and overall economic growth (Duflo, 2012). Policies such as equal pay legislation, gender-sensitive labour regulations, and investment in childcare infrastructure are crucial to closing gender economic gaps.

There exists a strong gender gap in intergenerational mobility (Fontep & Sen, 2020; Kearney, 2006; Leone, 2021; Torche, 2015). Some opined that it is stronger for men than for women especially among the married than single persons (Fontep, & Sen, 2020; Kearney, 2006; Torche, 2015). Kearney's opinion also was that Sex and race carries less role in achieving intergenerational mobility, but sex and race-based differences in wages and income exists (Kearney, 2006) But some argued that intergenerational mobility is more elevated for daughters than for sons (Leone, 2021). This is due to the fact that children's educational attainment is closely connected

to the educational background of their most educated parent, irrespective of gender, with a stronger correlation for females than for males (Leone, 2021). Despite having equal access to education and work opportunities as men, women still face a number of challenges in real life, such as childbirth, pregnancy, and taking care of their families. Which have a major impact on their social mobility. Such tasks limit their ability to earn money and come out of poverty (Sonal, 2020).

In the context of swift economic changes, Tsuya (2015) discovered that among women at peak reproductive ages, rising educational attainment and paid employment were linked to declining marriage and fertility. According to Taşseven et al. (2016), women's labour force participation rates in OECD nations are positively impacted by the unemployment rate, GDP per capita, and fertility rate. The fertility rate is seen to be the variable with the greatest effect on the female labour force participation rate.

Building on these economic and demographic trends, there was a strong three-generational educational mobility in the US in the 20th century. The association between grandmothers and granddaughters is approximately twice as strong as the existing two-generation mobility literature (Kroeger & Thompson, 2016).

Gender differences in intergenerational occupational mobility are evident in Central Europe and Cameroon. The occupational reproduction is stronger in professional occupations for both men and women. For men, it is stronger in trade and crafts, and for females, it is stronger in sales or clerical occupations (Fontep & Sen, 2020; Smith, 2024). Intergenerational occupational mobility of women is determined by both fathers' and mothers' occupational status (Rosenfeld, 1978).

The study conducted by Mare & Maralani argued that there exists a positive relationship between women's education and the educational attainment of the next generation. (Mare & Maralani, 2006). In India, upward mobility accounts for around four-fifths (0.55) of the total intergenerational educational mobility among young females, which is 0.69. SC/STs have somewhat more mobility than OBCs and Others, but the other group and urban areas have the highest upward mobility. States

with advanced economies and demographics exhibit significantly greater overall and upward mobility than states with less developed economies (Choudhary & Sing, 2016).

In India, 71% of young women have intergenerational occupational mobility, although this percentage is dropping. Compared to rural areas, urban areas have greater occupational mobility. Furthermore, compared to other states, upward mobility is significantly lower in the economically and demographically poorer states (Choudhary & Singh, 2018; Reddy & Swaminathan, 2014). With the exception of diploma and secondary education, women in Kerala have outpaced men in all educational categories. However, this does not translate into opportunities for them to find profitable employment (Sebastian & Navaneetham, 2008).

2.3.3 Intergenerational Mobility of Muslim women

The study about the intergenerational mobility of Muslim women attracts special attention because they are considered heterogeneous and their socio-economic development is very low compared to other women in Indian society. This backwardness is due to the reinforcement of cultural stereotypes and the concealment of their contemporary realities (Hussain, 1999; Kazi, 1998).

While Islam theoretically grants women and men equal rights in India, including in states like Kerala, Muslim women are frequently unable to fully exercise these rights due to patriarchal and traditional social interpretations, in contrast to women from other religious communities. Many Muslim women have become more economically independent as a result of globalization and improved access to organized-sector jobs and education, but their involvement in autonomous family decision-making is still comparatively low (Masarat, 2016).

Conservative views about women's employment, family responsibilities and societal expectations hinder their socio-economic development. Increased employment opportunities, financial independence, and involvement in family decision-making are achieved through proper education. Both working and non-working women are facing challenges in their lives. While working women struggle

to balance their work and family, financial dependence is the main problem faced by non-working women. Varying societal attitudes and promoting gender equality in education and employment are crucial for improving the socio-economic status of Muslim women (Jumanath, 2024).

The study of social mobility among Muslims in Malappuram District, Kerala, found high upward intergenerational educational mobility and strong occupational reproduction. While family background influences the likelihood that the younger generation will attain education and achieve occupational success, the researchers found that religious education does not hinder the younger generation's access to formal education (Edannur et al., 2014). Furthermore, factors beyond higher education, such as marriage, family choices, migration, and other cultural factors, also determine the socio-economic status of Muslim women (Jafar, 2015).

The above reviews concluded that Muslim women face challenges in achieving intergenerational mobility.

2.3.4 Intergenerational Education Mobility of Muslim Women

Education is a powerful tool for eliminating all forms of social inequality. It enables individuals to acquire their rightful place in society and access opportunities. Social equity in education, therefore, plays an important role in social and human development (Alam, 2013).

Education is an important factor in social mobility, as it equips individuals with knowledge, skills, and qualifications that lead to better occupations, higher income, and improved social status (Blanden, 2013). Additionally, education is a serious social factor that forces the social, economic, and cultural development of communities (Shinde & John, 2012).

Women constitute almost half of the world's population. Providing education is the best way to improve women's socio-economic status (Sojitra, 2020). The literature regarding the higher education experiences and aspirations of Australian young Muslims showed that higher education is considered an important tool for girls' success and economic independence in today's neo-liberal environment, but

there exist certain constraints, like Islamophobia, gender and racial discrimination, which may hinder access to employment opportunities. Educational outcomes highlight the interrelationships between class, gender, ethnicity, and religion through complex forms of negotiation, bargaining, and resistance (Al-Deen, 2019).

Given that intergenerational educational mobility is typically lower in developing nations than in developed ones, children frequently do not surpass their parents in terms of educational attainment. As a result, children of less educated parents are less likely to follow higher education in poorer economies, and educational opportunities are significantly influenced by the nation in which an individual is raised (Van der Weide et al., 2024). The literature in Saudi Arabia shows that while both mothers' and fathers' education influence their children's educational achievement, the effects differ by gender: mothers' education has a stronger effect on daughters, whereas fathers' education has a stronger effect on sons (Azid & Aldowsari, 2020).

Arab countries face significant disparities between educational trends and income mobility (the ability of children to attain income levels higher or lower than those of their parents). Eastern and Central European countries, with same economic trends, also exhibit similar mobility patterns. They need robust policies to mitigate the likely negative impacts of low economic and high educational mobility (Driouchi & Gamar, 2016).

Even though education is considered a good equalising mechanism in providing opportunities for social mobility, economic advancement, and personal development. However, in the diverse Indian society, some communities face marked challenges in accessing quality education and utilising their full potential. In this regard, Indian Muslims have a very poor socio-economic status that contributes to their educational backwardness (Khatoon, 2024). Perceptions regarding the discriminatory nature of the status of Muslims are higher than their actual experience. Home, societal, peer, and environmental factors are used to improve children's educational outcomes (Ahmed & Nauriyal, 2023).

Professional education can pave the way for better-paying jobs for women in a country like India (Fatima & Khan, 2019). Boys' and girls' unequal status in a society is replicated in gender differences in education as well as in all other social and demographic indicators. Despite the fact that there is a gender gap in India, Muslim women have a very low status (Sojitra, 2020).

After independence, the number of educational institutions in the government and private sectors increased, but the benefits of these couldn't be transferred to some socio-religious communities, particularly Muslims (Khan, 2016). The Sachar committee report uncovered the underdevelopment of Muslims despite 60 years of independence and highlighted the marginalization of the Muslim community in comparison to other religious communities. Their low level of education and poor-quality education put them at a double disadvantage; as their level of education rises, so does their deprivation. Even though more Muslims, particularly girls, are pursuing higher education, this progress is not with the pace of time. In order to prevent Muslim educational backwardness, more should be done at the institutional and community levels (Suhail, 2019).

While education is recognised as a crucial pathway to economic and social empowerment, the challenges Muslim women face in accessing quality education persist (Mujawar & Karade, 2024). Even though the number of Muslim girls is double that of Muslim boys in most of the educational institutions, the existing religious system and the patriarchal mindsets of the Muslims in Kerala have confined women to a limited role, who view them as inferior in terms of politics, society, and economic status; Muslim girls are not even encouraged by their families for higher education on par with their male siblings, and even in personal choices like selecting a bride, the age of marriage, and selecting courses are biased. But tremendous changes have occurred in the realm of Muslim women's education in recent years, though they have failed to channelise into employment (Ramsheena, 2018).

There are several studies (Alam, 2013; Hussain et al., 2018; Khatoon, 2024; Kumar et al., 2022; Lakshmidevi, 2014; Mujawar & Karade, 2024; Ohlan, 2021; Saeed, 2005; Siddiqui & Khan, 2022) regarding the educational backwardness of Muslim

women. Each of them put forward different dimensions for their backwardness. The study conducted by Ohlan argued that economic dependence is the main reason for their educational and occupational backwardness (Ohlan, 2021). They suffer more because of the patriarchal nature of Islam and giving more importance to Quranic education, which is given at home to the girls. The only solution to overcome illiteracy and ignorance lies in education (Siddiqui & Khan, 2022). The importance given to Madrassa education is another reason for their backwardness. To improve the status of Muslim women, Madrassa education should be incorporated into modern education, and a university focused solely on Muslim women should be established (Hussain et al., 2018). It is imperative that Muslim women and men, as well as members of Muslim communities, replicate on and discuss among themselves the causes of their economic vulnerability and low levels of education and employment, as well as potential solutions (Saeed, 2005). In India, there is a need for policy intervention to provide a more inclusive and equitable education for Muslim women (Mujawar & Karade, 2024; Saeed, 2005). Due to the lack of availability of basic amenities, including educational opportunities, in the Muslim concentrated areas, they lag behind SCs/STs in educational attainment (Alam, 2013).

Through a detailed analysis of historical context, socio-economic factors and educational policies, the study identified the root causes of educational backwardness among Indian Muslims. They have faced constant barriers in the form of poverty, social discrimination, inadequate services, and cultural norms in achieving education; inadequate educational institutions in rural areas; absence of suitable communication facilities; and inadequate educational aid in the form of scholarships, hostel facilities, etc. (Khatoon, 2024; Lakshmidhevi, 2014). In order to break the vicious circle of low education for Muslim communities, especially females, limited resources are allocated towards girls' education. By providing additional funding for girls' education, public policy should frame for the disparity in parental incentives to educate boys and girls (Kumar et al., 2022)

In spite of their backwardness, there can be seen some improvements in the intergenerational transmission of Muslim women. The literature in this field is

reviewed by Ahmed and Mistry (2010); Kroeger and Thompson (2016), Sabiha (1999) and. From the early 20th century to the present, a high degree of multigenerational persistence is present, with the largest educational gains accruing not proportionally to the followers of women who achieve a relatively high level of educational attainment, despite the rapid control of female educational attainment in this period (Kroeger & Thompson, 2016). Muslim women are becoming highly educated, particularly in higher education. In the generation of respondents, the percentage of women with graduate and postgraduate degrees has significantly increased. In addition to being literate or having only received primary school education, the mothers of the majority of respondents were either illiterate or had formal or informal religious education. In postgraduate, technical, and professional education, where no women had previously attained this level, the shift is very high (Sabiha, 1999). Although large numbers of socio-economic, cultural, and religious constraints hinder their progress, a slow and steady change in the attitudes and overall condition of Muslims can be seen, including their roles within their families and their socio-economic status (Ahmed & Mistry, 2010).

Intergenerational educational mobility is primarily influenced by family background, including parents' education, father's occupation, gender, family income, attitudes towards education, household size, early marriage, and government and community participation. These factors are particularly significant for achieving structural change in Muslim female education (Ahmed, 2007; Edannur & Afsal, 2016; Kishan & Rajverma, 2024; Kumar et al., 2022; Menon & Indu, 1979; Roy et al., 2022; Sewell & Shah, 1968; Tverborgvik et al., 2013). Evidence shows that Children are three times more likely to get only a basic education themselves if their parents only have a basic education compared to those whose parents have higher educational levels. These disparities persist despite free education and substantial government support. This suggests that the overall improvement in a population's educational attainment is gradual and requires overcoming negative social inheritance to increase social mobility in Denmark (Tverborgvik et al., 2012). Among the parental factors, father's education more strongly influences perceived

educational encouragement in males, while mother's and father's education have similar effects on females' attainment. Mother's education has a moderate effect, with a greater effect for females. When parents differ in educational achievement, the impact on children's aspirations depends on the child's sex, intelligence, and each parent's education level. However, the key motivator for high aspiration is both parents having consistently high educational achievement rather than disparities between them (Sewell & Shah, 1968).

Macroeconomic variables that have a positive correlation with educational mobility include economic growth and public expenditure on education (Kishan & Rajverma, 2024). There is a strong association between parental education and a child's average years of schooling, and this association varies across subgroups (Roy et al., 2022). Parental education, especially the father's, positively influences the educational attainment of the girl child, while cultural attitudes towards girls' education act as an important obstacle to achieving it (Kumar et al., 2022).

Girls' education is negatively correlated with household size and cultural attitudes toward the prevailing sociocultural environment in schools, colleges, and universities, and positively correlated with parental education and family income. Additionally disadvantageous is the parents' preference for girls to marry young, especially when it comes to the girls' higher education. For Muslim women's education to experience structural change, the government's proactive involvement and communities' constructive involvement are essential (Ahmed, 2007).

Insistence on early marriage and religious education Muslim women's educational attainment in India is vulnerable by seclusion and the lack of socially defined occupational roles for women in the Muslim community. (Menon & Indu, 1979. In the Muslim community in Kerala, differences in children's educational attainment are significantly influenced by the education of father and mother, father's occupation, and gender, with the exception of income of the parent (Edannur & Afsal, 2016).

2.3.5 Intergenerational Occupational Mobility of Muslim Women

The study of the occupational mobility of Muslim women offers a holistic approach to social mobility in both developed and developing countries. Occupational status is an indicator of one's position in the social ladder. Occupational mobility can be either upward or downward. The percentage of people who have moved from their childhood positions is known as the absolute rate of upward and downward mobility in a society. The likelihood that individuals from various backgrounds will be able to obtain elite positions and stay out of deprived ones is known as relative rates of mobility (Heath & Zhao, 2021).

For considering occupational mobility in developing countries, the degree of fluidity is more important than either upward or downward mobility. Fluidity may have an uncooperative quality because it can result from limitation rather than opportunity. (Heath & Zhao, 2021). The mobility pattern is lower in lower-income countries than in higher-income countries. Besides, children's outcomes depend more on parental outcomes in countries with larger income inequalities. The differences in mobility are partly due to skill differences and partly to labour market performance. Intergenerational inequalities can be reduced by providing employment opportunities and reducing earning inequalities. These policies should be formulated to ensure access to good-paying jobs and attractive employers (Nybom, 2018).

Intergenerational occupational mobility from agriculture to the nonfarm sector is lower among women in both Nepal and Vietnam, and it is lower in Nepal than in Vietnam, according to the literature. In Nepal, cultural inheritance in a traditional society meant that the daughter's choice of occupation was significantly influenced by the mother's nonfarm involvement. (Emran & Shilpi, 2011).

According to research on the occupational mobility of men and women and gender segregation in the Russian labor market from 1985 to 2002, gender segregation can be reduced by making women more competitive in the labor market and removing barriers that avoid them from finding private sector employment.

Individual characteristics and parameters of current occupation as well as local labor market characteristics regulate occupational mobility between different genders (Maltseva, 2005).

According to the Canadian National Mobility Study, women who have working mothers are more likely to enter the workforce themselves and are likely to follow careers similar to those of their mothers' (Stevens & Boyd, 1980).

There are differences in female labor force participation (FLFP) by religion across a sample of nations from 1985 to 2005. According to research, Muslim nations have lower rates of female labor force participation. Higher FLFP is found in nations with no religion (Bayanpourtehrani & Sylwester, 2013).

There have been significant developments in Turkey's female labour force participation rate in recent years; it remains below the OECD average. There are various social and economic reasons behind this situation. They are age, relationship with the head of the household, marital status, level of education, and household size. It was found that female labour force participation can be raised through education, vocational training, entrepreneurship, and by creating a new perspective on sharing responsibility within the family (Kutlu, 2022).

Overall, the labour force participation rate declined for men and increased for women in Pakistan between 2002 and 2015, but the increase in women's participation is substantially lower in urban than in rural areas. Major determinants of female workforce participation are real per capita GDP, poverty level, the female unemployment rate, fertility rate, and female literacy rate. Thus, the participation of females in the workforce is very important, as it not only fuels socio-economic development but also drives national progress (Junaaid et al., 2019). Socioeconomic persistence leads to disparities and the misallocation of talent and skills; in urban areas, persistence is more noticeable in higher-status occupations, but in rural areas, it is more marked in lower-status occupations. There are differences in employment opportunities between the rich and the poor (Muhammed & Jamil, 2017).

Muslim women were less likely to engage in the labour market and to obtain managerial jobs in Australia. Religion plays an important role in making labour market discrimination in employment. Overqualification has a positive impact on all labour market outcomes and operates similarly across all groups (Khattab et al., 2020).

The influence of the hijab on women's employment in the United States showed that the likelihood of employment for non-Muslim women is same as the likelihood of employment for Muslim women who disrobe. However, compared to non-Muslim or non-veiling Muslim women, women who wear the hijab are less likely to be employed (Abdelhadi, 2019).

The impact of religion on female labor force participation is significantly outweighed by the effects of a few other factors. Particularly, family formation characteristics and human capital endowments, particularly educational attainment, are important. Furthermore, human capital endowments, educational attainment, and English proficiency are all strongly correlated with women's employment participation, whether they are Muslim or not. It is noteworthy that Muslim women who were born in Australia are half as likely to be employed as non-Muslim women. (Foroutan, 2008).

Neo-patriarchal viewpoints and their measures have a significant impact on various sectors and on the share of the total labour force. The share of the Muslim population has its biggest impact on the most modern sectors (industry and service). In contrast, Islamism has no effect on the share of women in agriculture. Fertility has no impact on the female share of the labour force, but higher fertility is suggested to significantly reduce female employment in modern sectors (Sordellini, 2009).

The intergenerational occupational mobility in India at the rural, urban and all-India level shows that there can be significant persistence across generations, especially when it comes to low-skilled and low-paying jobs, such as the nearly half of children of agricultural laborers are unwilling to become agricultural labourers and also document differences across caste groups (Motiram & Singh,

2012). Women are vital and productive agents in the Indian economy, but the labour force is largely masculine (Mazumdar & Guruswamy, 2006). They have achieved a steady rise in educational levels, but employment rates have not risen at a similar pace (Bhalla & Meher, 2019).

In comparison to other religious communities, Muslims represents one of the most economically and socially marginalized groups. Most work for themselves, but a smaller percentage have regular salaried jobs that usually provide social security. Because they are still at the bottom of the occupational ladder, their financial situation is limited. Inadequate capital investment, aggressive competition from dominant religious groups, and restricted access to output markets all contribute to this marginalization (Mansoor, 2022).

According to the National Sample Survey, 50th round (1993–1994), only 16% of Muslim women and more than 36% of Hindu women are employed. Data about Scheduled Castes and Scheduled Tribes are frequently examined in detail, as these groups are among the poorest and the focus of policy and scholarly interest regarding the effects of reservations in public employment and educational institutions. In contrast, comparable analyses of Muslim employment are seldom conducted. While the low economic status of Muslims is widely recognised by academics and policymakers, the economic status of Muslim women receives limited attention for two primary reasons. First, the relatively low educational attainment of Muslim women compared to their Hindu counterparts is linked to lower labour force participation. Second, cultural norms concerning status and seclusion are often cited to explain Muslim women's limited representation in politics, economic leadership, and high-status occupations (Das, 2004; Vaid, 2023).

The study about the difference in social mobility in India between Muslim OBCs and non-OBCs compared with non-Muslims and also in terms of professional employment showed that While OBCs are more disadvantaged than non-OBCs in terms of overall rates of mobility and access to professions, and although Muslim

OBCs have experienced educational mobility, this hasn't decoded into occupational mobility (Vaid, 2023).

Research on the empowerment of Muslim women in India indicates that they experience greater socio-economic disadvantages compared to Muslim men and women from other major religious communities, including Hindus, Christians, Sikhs, Buddhists, and Jains. The gender gap in education and employment is most pronounced within the Muslim community. Muslim women are among the least empowered, according to data on their freedom of movement and ability to make decisions in the home, facing dual disadvantages as women and as members of a minority community that is both educationally and economically marginalised and characterised by religious orthodoxy. Enhancing educational attainment is likely to improve the socio-economic and political status of Muslim women; however, such progress depends on shifts in public attitudes toward gender equality (Sanu, 2018).

The bulk of Muslim women who work in Chennai's selected organized sector units are middle-aged. The majority of Muslim women in the workforce are married, suggesting that marriage is not a barrier to employment. The majority of Muslim women working in the organized sector have a master's degree, which establishes that education helps Muslim women and jobs in the sector. These Muslim women also enjoy financial freedom because many of them are able to spend their earnings however they see fit (Jamal et.al, 2016).

The Muslim community in Mysore holds significant social and economic importance. Social, economic, religious, ethical, and cultural factors, along with advancements in communication, shape occupational opportunities and priorities for Muslims in this city. The prevalence of social media and advanced technology has increased self-employment opportunities within the Muslim community. A decline in interest in government-sector employment has led fewer individuals to pursue degrees, prompting many to opt for self-employment. The private and self-employment sectors offer greater occupational diversity than the government sectors, making them more attractive to the Muslim community in Mysore. Muslim women

in Mysore face limited occupational opportunities due to religious restrictions and familial obligations (Kashkooli & Gangadhar, 2020).

Pathan's study found that Muslim women are making significant efforts to educate themselves and enter the workforce outside their homes. Supported by both their parents and parents-in-law, these women have become role models for their peers and future generations in modernisation and awareness (Pathan, 2013).

Female labour force participation is shaped by multiple factors, such as education, age, marital status, geographic location, economic status, spouse's employment, household income and expenditure, gender of the household head, work experience, number of children, ethnicity, social status, existing beliefs and values, and the educational and occupational status of parents (Ahmed & Nauriyal, 2024; Bhalla & Meher, 2019; Hernández et al., 2023; Kiani, 2009; Rosenfeld, 1978; Sebastian & Navaneetham, 2008).

The study found that, a mother's profession plays a significant role in the mobility process. A necessary and sufficient model of women's intergenerational occupational mobility takes into account both mothers' and fathers' occupations after adjusting for age and race. Given that the mother was employed, the daughter's occupational destination is influenced by both her occupation and whether or not she had an outside job (Rosenfeld, 1978; Reddy & Swaminathan, 2014).

A study by Hernández-Medina et al. (2023) examined how factors like age, marital status, experience, number of children, education, ethnicity, head of household, social structure (ethnicity), and aspects of beliefs and values affect women's participation in the labor force. Age, experience, and attitude toward children all explain willingness to work. Thus, social structures and beliefs can increase the participation of women in the labor force. Children's educational and occupational status is attributed by their parents' educational background and career preferences, as demonstrated by Ahmed and Nauriyal (2024).

Kiani (2009) identified factors influencing women's entry into the labour market, including household income, household expenditure, education, and the gender of the household head. The strength and direction of correlation between each factor and female labour force participation (FLF) vary across regions. Education and household expenditures show a positive, though statistically insignificant, association with FLF. In contrast, higher household income and a male head of household are negatively associated with women's labour force participation. To improve working conditions for women, government action, such as expanding educational opportunities, is recommended.

Bhalla and Meher (2019) found that among the likely causes of high female unemployment are women's personal job preferences, the economy's general high unemployment rate, family obligations, a lack of skills, and the discouraged worker effect.

Sebastian and Navaneetham (2008) proved the importance of education, age, marital status, residence, economic status, and husband's job in influencing women's employment. Professional education and diplomas have the highest odds ratios among educational factors. Compared to women with higher secondary or secondary education, women with a diploma have a six-fold higher chance of finding employment, and those with professional education have an eighteen-fold higher chance. This highlights how crucial skill-oriented education is to enhancing women's employability, as opposed to general education. The study also establishes that women in older age groups are more likely to be employed. Compared to married women, single women are twice as likely to work.

The above-mentioned studies showed that there are differences in intergenerational occupational mobility of women and there are several factors leading to intergenerational occupational mobility of women, especially Muslim women. Gender, family background, mother's occupational status and religion, etc., play a significant role in female labour force participation. Among several factors, religion and patriarchal norms, etc., prevent Muslim women from employment.

2.4 Key Concepts and Operational Definitions

2.4.1 Educational attainment

Educational attainment is determined by the highest class or level of education completed, rather than just years of education or current enrolment status (Office of the Registrar General & Census commissioner, India, 2011).

Educational attainment in the present study is used as the highest educational qualifications and the exact number of years of formal schooling completed by each respondent.

- Mother's education: It indicates the highest level of education completed by the respondent's mother.
- Daughter's education: It indicates the respondent's own highest completed level education at the time of survey.

2.4.2 Employment Status

Employment status refers to the classification of individuals based on their participation in economic activity during a specified reference period, categorising them as employed, unemployed or out of the labour force (MoSPI, 2018).

Employment status in the present study indicates participation in paid or unpaid economic activities, including formal employment, self-employment and domestic roles. Here, the employment status is classified as the six categories-Unemployed, Home maker, Student, Part-time employed, full-time employed and Self-employed.

2.4.3 Occupational Status

It refers to the distribution of the working population across different occupations in an economy, classified systematically according to the National Classification of Occupation.

Occupational status of employed women in the present study is used as Unskilled or Agricultural labour (low skilled, manual employment), Skilled Labour or Informal self-employment (moderate skill, low autonomy), Clerical /administrative

work (formal mid-level employment), Teaching, Health care or skilled self-employment (Professional / respected roles, Entrepreneur or Higher professional role (High autonomy or occupational prestige).

2.4.4 Intergenerational Educational Mobility

It refers to the degree to which an individual's educational attainment deviates from that of their parents, indicating the degree to which education-based advantages or disadvantages are passed down through generations (Brean & Jonsson, 2005; Black & Devereux, 2011).

In the present study, it can be measured through transition matrices, summary mobility indices, Educational Step Difference measures (ESD), Intergenerational Educational schooling Gap (IESG) and Perceived Educational Mobility.

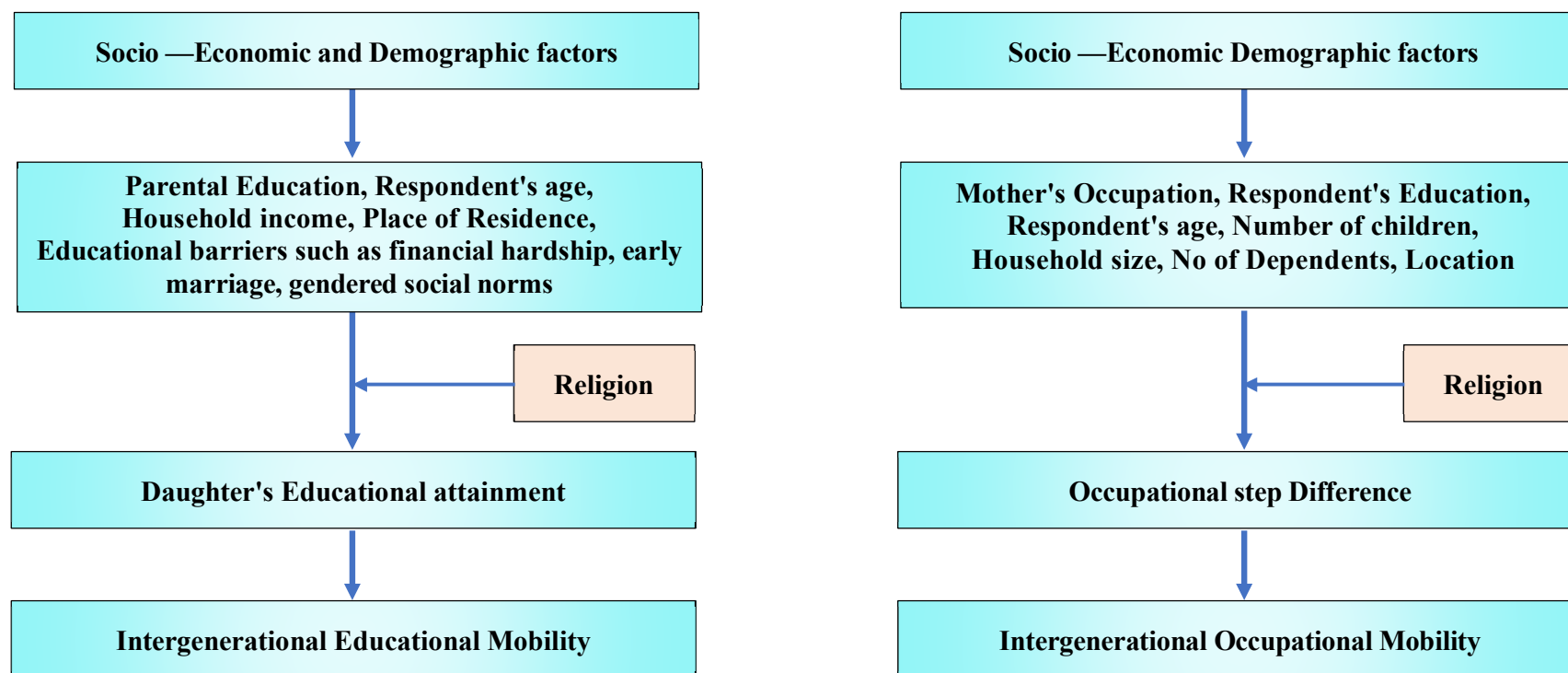
2.4.5 Intergenerational Occupational Mobility

It refers to the movement of people from one occupational status to another in relation to their parents' occupation, indicating the degree to which occupational positions are transmitted or changed across generations (Erikson & Goldthorpe, 1992; Blanden, 2013).

In the present study it can be measured through transition matrices, mobility indices, Occupational Step-Difference, Multinomial logistic regression and OLS models and Perceived Occupational mobility.

2.5 Conceptual Framework of the Study

The conceptual model for the present study was developed using Social-reproduction theory, the Becker-Tomes model, and Institutional theory. According to this model, intergenerational educational mobility depends on parental socio-economic background, including parental education, cohort, income, place of residence, and barriers. Intergenerational occupational mobility, meanwhile, depends on factors such as the mother's occupation, the daughter's education, age, number of children, number of dependents, and household size and residential location.

Figure 2.1*Conceptual Model*

2.6 Research Gap

Research at the global level has primarily focused on gender-based educational and occupational mobility, as demonstrated by studies such as Fontep and Sen (2020); Health and Zhao (2021); Van der Weid et al. (2024). While these studies highlight persistent gender inequalities in education and labour-market outcomes, they do not offer systematic evidence on religion-based mobility, particularly regarding the educational and occupational status and intergenerational mobility of Muslim women compared to non-Muslim women.

In the Indian context, literature, such as studies by Kazi (1998); Masarat (2016), has examined the educational backwardness of Muslim women, highlighting structural and socio-cultural barriers that limit their educational attainment. Similarly, studies such as Abdelhadi (2019); Khattab et al. (2024) analysed religion and labour market participation. They found that Muslim women are less likely to join in the labour market compared to non-Muslim women (Reddy, & Swaminathan, 2014). They do not focus on the intergenerational mobility of Muslim women compared to that of non-Muslim women.

In the context of Kerala, the study conducted by Jumanath (2024) analysed the role of education and employment in determining the socio-economic status of Muslim women, but it doesn't address intergenerational mobility, and could be seen as a methodological gap. The study conducted by Edannur et al. (2014) analysed the intergenerational social mobility of the Muslim community as a whole, without specifically focusing on Muslim women or comparing them with non-Muslim women, and the methodology adopted was not sound.

So, the present study focuses on the educational and occupational attainment and intergenerational educational and occupational mobility of Muslim women compared to non-Muslim women, using a robust methodology.

2.7 Conclusion

The present chapter provides a theoretical and empirical review of intergenerational mobility studies, including the basic concepts and operational definitions, as well as

the research gaps identified in the literature. The main ideas and correlations between variables associated with intergenerational mobility are presented in the theoretical and empirical reviews and in the conceptual framework of the present study. The lack of comparative analysis between Muslim and non-Muslim women in attaining intergenerational educational and occupational mobility, in particular, is a research gap identified by earlier studies.

Chapter 3

DATA AND METHODOLOGY

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Chapter 3

DATA AND METHODOLOGY

3.1 Introduction

The reliability and validity of any empirical research depend primarily on the methodological framework adopted. This chapter, therefore, outlines the data sources and methodological framework adopted to investigate current educational and occupational status, as well as intergenerational educational and occupational mobility, among Muslim and non-Muslim women in Kerala.

The remainder of the chapter is systematized as follows. Section 3.2 labels the data source and sampling design, including the universe, multi-stage sampling strategy, sample size determination, and study area profile. Section 3.3 details the tools for data collection, specifically the interview schedule and the pilot study conducted for validation. Section 3.4 explains the measurement and coding of key variables, presenting the educational and occupational coding schemes used for respondents and their mothers to ensure comparability in mobility analysis. Section 3.5 includes the comprehensive measurement framework used to assess intergenerational mobility, covering both objective quantitative indicators like transition matrices and step-difference measures and subjective perception-based scales. Section 3.6 the analytical framework, including the descriptive statistics, inferential tests, and multivariate econometric techniques used to report the research objectives. Lastly, Section 3.7 includes the conclusion of the chapter.

3.2 Data Source and Sampling Design

3.2.1 Universe of the Study and Sample Selection Strategy.

The study's target population consists of both Muslim and non-Muslim women in Kerala, with an empirical focus on those between the ages of 25 and 54 years. This age range allows for meaningful intergenerational comparisons because it guarantees that the majority of respondents have completed their formal education and entered relatively stable adult roles. Kerala was chosen due to its unique socioeconomic

profile, which includes strong public health outcomes, high literacy rates, and progressive social indicators. However, there are still notable differences in female labour force participation, particularly among religious minorities. The state is a suitable and analytically significant setting for researching intergenerational educational and occupational mobility, especially among Muslim women, because of these divergent realities.

The study is based on primary data collected through a structured interview schedule regarding women respondents across three zones of Kerala. Because of its comparative design, the study requires adequate representation of Muslim and non-Muslim women in order to facilitate insightful subgroup analyses. A multi-stage stratified random sampling technique was used to achieve this, assuring representation across urban-rural segments, religious communities (Muslim and non-Muslim), and geographic zones (north, central, and south Kerala). Three districts were purposefully chosen in the first phase to represent Kerala's northern, central, and southern regions. These consist of Kollam (south), Ernakulam (central), and Malappuram (north). The districts were selected according to factors like the proportion of Muslims population, the level of urbanization, and regional diversity. Because Malappuram has a large Muslim population, it was chosen from the northern zone. In order to depict a highly urbanized, mixed-community environment, Ernakulam was chosen from the central zone. In order to represent the southern coastal belt with a sizable minority population, Kollam was selected from the southern zone. Together, these districts represent the regional diversity of Kerala with regard to development, religion, and employment trends. This made sure the sample represented the spatial and socioreligious heterogeneity of Kerala.

In the second phase, the sample was taken from a collection of local self-government units within each district that were chosen to represent the differences in women's educational and occupational opportunities between urban and rural areas. The selection strategy was stratified by administrative level. Rural, semi-urban, and major urban contexts were represented by one grama panchayat, one municipality, and one municipal corporation in each district of Kollam and

Ernakulam, respectively. The design was modified to incorporate one municipality and two grama panchayats in Malappuram, which lacks a municipal corporation, in order to guarantee sufficient coverage of its unique semi-urban and primarily rural environments. As a result, this design produced nine LSGIs in total: four grama panchayats, three municipalities, and two municipal corporations. In order to ensure that the sample represents women's experiences across a range of local labour markets and institutional environments—from urban corporation contexts to rural panchayat areas—these diverse administrative units were included.

In the third step, one electoral ward or division was selected at random from each local body that was chosen. In the last phase, the final respondents were chosen from the sample frame, which was the ward-level electoral rolls (voter list) that were downloaded from the Election Commission website. This list provides most complete database of the adult population. Women in the prime working-age range of 25 to 54 years were identified by filtering the voters' list from the chosen wards. This age bracket was chosen to ensure respondents had completed their education and were potentially available for the labour market. The eligible female voters were then divided into two groups- Muslims and non-Muslims, based on their names and with the assistance of ward members and ASHA workers. Simple random sampling was used to choose respondents from these two strata in order to guarantee sufficient representation of both communities. Thus, 392 Muslim and 312 non-Muslim women made up the final sample size of 704 women; Hindu and Christian respondents are included in the non-Muslim group and are analysed as a single comparison category. While random selection within each stratum guaranteed that every eligible woman had an equal chance of being selected, the religious stratification provided the necessary balance for meaningful comparative analysis. Thus, a strong, representative dataset that could facilitate comparative analysis across religious groups, geographical areas, and urban–rural settings was guaranteed by this sampling strategy.

3.2.2 Sample Size Determination

In quantitative research, choosing the right sample size is crucial to guaranteeing statistical Precision, reliability, and representativeness. The current study used

Cochran's (1977) formula for continuous data in infinite populations to determine sample size using a precision-based method.

The formula is expressed as:

$$n = \left(\frac{Z \times s}{E} \right)^2 \quad \dots(3.1)$$

where n represents the necessary sample size, Z represents the standard normal deviation that corresponds to the desired level of confidence (1.96 for 95% confidence), s represents the outcome's estimated standard deviation, and E represents the acceptable margin of error (absolute precision level) in the units of outcome variable.

Given the comparative design, sample sizes were computed separately for Muslim and non-Muslim women to ensure adequate precision within each group. Occupational Step Difference (OSD) and Educational Mobility Intensity (EMI), two important mobility indicators that reflect the study's analytical focus, were estimated using pilot survey data ($n = 120$). These indicators capture the magnitude of intergenerational educational and occupational mobility, respectively. Estimates of variability for both measures were obtained from a pilot survey conducted among 120 respondents drawn from the study population.

The pilot-based standard deviation of EMI was 4.041 for Muslim women and 3.602 for non-Muslim women, indicating greater dispersion in educational mobility outcomes. Accordingly, a margin of error of 0.40 was adopted for EMI

Substituting these values into Cochran's formula generated the following minimum sample sizes:

$$n_{Muslim} = \left(\frac{1.96 \times 4.041}{0.40} \right)^2 \approx 392 \quad \dots(3.2)$$

$$n_{Non-Muslim} = \left(\frac{1.96 \times 3.602}{0.40} \right)^2 \approx 312 \quad \dots(3.3)$$

For occupational mobility, the pilot survey reported lower variability, with standard deviations of 2.014 for Muslim women and 1.798 for non-Muslim women for the OSD measure. Given this lower dispersion, a tighter margin of error of **0.20** was considered appropriate. Applying Cochran's formula produced the following estimates:

$$n_{Muslim} = \left(\frac{1.96 \times 2.014}{0.20} \right)^2 \approx 390 \quad \dots(3.4)$$

For non- Muslim women, the estimate was:

$$n_{Non-Muslim} = \left(\frac{1.96 \times 1.798}{0.200} \right)^2 \approx 310 \quad \dots(3.5)$$

The estimates from both variables were very similar, ranging from 390 to 392 for Muslims and from 310 to 312 for non-Muslims. For each religious group, the larger of the two estimates was chosen in order to guarantee optimal precision and sufficient statistical power. Accordingly, 392 Muslim and 312 non-Muslim was selected, which together form 704 respondents as final sample size.

By using this strategy, the study keeps consistency with accepted methodological standards in social science research while guaranteeing that the sample size is representative and large enough to support accurate estimation of mobility patterns, subgroup comparisons, and multivariate analyses.

3.2.3 Description of the Study Area

Three districts in Kerala—Malappuram in the northern zone, Ernakulam in the central zone, and Kollam in the southern zone—provided the primary data for this study. These districts were chosen to represent regional diversity and to allow for meaningful comparisons of educational attainment, employment status, and intergenerational educational and occupational mobility between Muslim and non-Muslim women. In order to better understand women's education-to-work transitions and intergenerational mobility patterns, these districts were specifically chosen to reflect the state's regional diversity in terms of socioeconomic development,

religious demography, urbanization, and labour market characteristics. This selection guaranteed that the study captures the entire range of diversity in women's educational and occupational experiences across Kerala.

Kollam district, which is situated in the southern coastal belt, was chosen to symbolize the southern region and to include a district with a mixed socioeconomic base and moderate urbanization. Traditional industries like fishing and cashew processing, along with an expanding services sector, make up the district's economic foundation. To represent an urban-semi-urban-rural continuum, the sampling design in Kollam included three local self-government settings. At the urban level, the Kollam Municipal Corporation's Division 22 (Chathinamkulam) was chosen to symbolize a diverse urban area with a range of formal and informal employment. Ward 29 (Nediyavila) of Karunagappally Municipality--a significant commercial town within the district was selected as the sampling unit at the semi-urban tier. Ward 7 (Mukundapuram) in Chavara Grama Panchayat was selected as the sampling unit in order to capture rural dynamics. This configuration ensured that, the Kollam sample was guaranteed to represent the educational and professional experiences of women in various southern settlement contexts.

Ernakulam was chosen from central Kerala to represent a highly urbanized, economically dynamic district with a diverse labour market and significant religious diversity. With sizable populations of Muslims, Christians, and Hindus, the district also boasts a balanced religious setting. Because the district represents Kerala's largest metropolitan employment base and educational infrastructure, it is a suitable location to investigate how education affects women's occupational status and whether this translation differs systematically by religious group. The study included urban corporation, municipal town, and rural panchayat contexts to account for variation within Ernakulam. División 5 (Mattancherry) of the Kochi Municipal Corporation was chosen to represent the urban tier because it represents a historically important, socially diverse area of Kochi with a high concentration of Muslim households in an urban setting. Aluva Municipality, a major satellite town with a sizable Muslim population and a varied occupational structure, represented the

semi-urban tier; Ward 17 (Madhavapuram) was chosen as the sampling unit. The Vazhakulam Grama Panchayat's Ward 9 (Pallipram) was chosen to represent rural conditions. Together, these locations cover urban, semi-urban, and rural areas in a district that is essential to Kerala's service and trade economy.

Malappuram district, which represents northern Kerala, was selected due to its unique sociocultural characteristics and demographic composition. With over two-thirds of the population being Muslim, it is the district in Kerala with the highest concentration of Muslims (Census of India, 2011). Despite the district's notable advancements in educational indicators, conservative social norms and structural barriers continue to limit women's labour force participation. In contrast to the other districts, Malappuram does not have a Municipal Corporation. As a result, Tanur Municipality was chosen to represent urban environments, and Tanur Central's Ward 33 was used as the sample unit. Because the district is primarily rural and lacks a municipal corporation, Moorkkanad and Angadippuram were chosen as the two grama panchayats. Two wards of these were chosen as the sampling units: Ward 6 (Chengode) and Ward 9 (Punnakkad). These domains collectively include the heterogeneity of Malappuram's socioeconomic landscape.

As shown in Table 3.1, a total of nine Local Self-Government Institutions (LSGIs) in the three districts were included in the study. This spatially stratified design made it possible to collect data in a variety of urban and rural settings and guaranteed that religious groups were adequately represented. Women between the ages of 25 and 54 years were identified using the electoral rolls (voter lists) for the chosen wards/divisions as the sampling frame. The eligible list was then stratified by religious group, and respondents were chosen at random within strata. This permitted for subgroup analysis while guaranteeing unbiased selection. This sampling strategy improves the analytical depth and generalizability of the study's findings by capturing geographic, institutional, and cultural variation across Kerala.

Table 3.1*Selected Study Locations: Districts, Local Bodies, and Wards*

Sl. No.	District (Zone)	LSGI type	Name of Local Body	Ward/Division Selected
1	Kollam (South)	Municipal Corporation	Kollam Municipal Corporation	Division 22 (Chathinamkulam)
2	Kollam (South)	Municipality	Karunagappally Municipality	Ward 29 (Nediyavila)
3	Kollam (South)	Grama Panchayat	Chavara Grama Panchayat	Ward 7 (Mukundapuram)
4	Ernakulam (Central)	Municipal Corporation	Kochi Municipal Corporation	Division 5 (Mattancherry)
5	Ernakulam (Central)	Municipality	Aluva Municipality	Ward 17 (Madhavapuram)
6	Ernakulam (Central)	Grama Panchayat	Vazhakulam Grama Panchayat	Ward 9 (Pallipram)
7	Malappuram (North)	Municipality	Tanur Municipality	Ward 33 (Tanur Central)
8	Malappuram (North)	Grama Panchayat	Moorkkanad Grama Panchayat	Ward 9 (Punnakkad)
9	Malappuram (North)	Grama Panchayat	Angadippuram Grama Panchayat	Ward 6 (Chengode)

Note. One municipality and two grama panchayats were chosen to represent the urban and rural areas of Malappuram district because it lacks municipal corporation. LSGI = Local Self-Government Institution.

3.3 Tools Used for Data Collection

3.3.1 Structure of the Interview Schedule

The main instrument used to gather primary data for this study was a structured interview schedule that was carefully created in accordance with the objectives of the study and the comparative analytical framework used in this thesis. An interview schedule was chosen over a self-administered questionnaire because a considerable share of respondents was not comfortable completing written instruments independently and interviewer-led format enabled uniform comprehension of questions, consistent application of skip patterns and reduction of item non-response. Higher response rates, improved comprehension, and reliable data collection were all made possible

by this strategy. Following a standardized process, the instrument was given in-person in the local tongue to guarantee comparability across study locations and religious communities.

In order to enable systematic coding and statistical analysis, the schedule primarily included closed-ended questions. A small number of open-ended prompts were also included to capture brief respondent explanations in situations where structured categories were unable to adequately capture the context (e.g., reasons for stopping education or limitations affecting employment participation). The schedule started with a concise introduction that emphasized voluntary participation, guaranteed confidentiality and anonymity, and told participants about the goal of the study. Before the schedule was administered, informed consent was acquired. The purpose of the schedule was to extract both objective information about status attainment and subjective information about mobility perceptions.

The schedule was structured into distinct modules that matched the analytical chapters of the thesis. A respondent's age, marital status, age at first marriage, household composition, and basic location identifiers appropriate to the sampling design were all recorded in the first module. The respondent's highest level of formal education, total years of schooling, and structured items on education discontinuation and challenges encountered in finishing education were all recorded in the second module, which measured current educational attainment. In order to support occupational classification, the third module recorded current employment status, occupational position, activity status, and, if relevant, the nature of work.

For the purpose of mobility analysis, the intergenerational modules were made to produce similar mother-daughter data. The schedule therefore documented the mother's educational status using the same ordered educational categories that were applied to the respondents. It also recorded the mother's occupational type and activity status at a comparable life-stage reference point (when the mother was approximately the respondent's current age). These data give the foundation for

constructing educational and occupational transition matrices, identifying directional mobility (upward, downward, and immobile categories), computing step-difference measures, and deriving summary mobility indices.

The Perceived Intergenerational Educational Mobility (PIEM) and Perceived Intergenerational Occupational Mobility (PIOM) scales are two structured Likert-type tools that quantify the subjective aspect of mobility. By capturing respondents' evaluations of intergenerational changes in access, barriers, and outcomes, these items were added to objective mobility measures.

The schedule was originally drafted in English and translated into Malayalam to ensure local relevance and comprehensibility. A back-translation process was used to maintain conceptual consistency between the two versions. The final schedule was pre-tested and revised before full-scale deployment. The full version of the interview schedule is provided in Appendix at the end of the thesis.

3.3.2 Pilot Study and Pre-testing

A pilot study and pre-test were conducted to strengthen the instrument's clarity, reliability, and field feasibility before the main survey. The pilot was undertaken in January 2025, and the full-scale field survey was conducted between February and April 2025. The interview schedule was pre-tested with a small sample ($n = 120$) drawn from the study population to evaluate the clarity of item wording, appropriateness of response categories, module sequencing, interview length, and the practical functioning of skip instructions. Particular attention was given to the intergenerational modules that require retrospective reporting on mothers' education and employment/occupation, as these items must be framed to minimise ambiguity and recall-related confusion.

Feedback from the pilot interviews was used to refine the instrument before final administration. Revisions primarily focused on improving question phrasing, tightening response options where categories overlapped, improving interview flow, and standardising interviewer prompts to reduce discretion and enhance consistency across interviews. The pilot also produced preliminary estimates of variability for

key mobility measures, which were subsequently used to determine the study's precision-based sample size. Following the incorporation of the pilot-based improvements, the final interview schedule was administered in the selected wards/divisions using a standardised protocol.

Overall, the pilot and pre-testing phase enhanced measurement clarity, reduced the risk of systematic response error, and improved the reliability and field-readiness of the primary data collection instrument, thereby strengthening the methodological rigour of the primary survey on which the thesis is based.

3.4 Measurement and Coding of Variables

Measurement and coding of variables were essential to ensure consistency, comparability, and statistical validity in assessing women's current status and intergenerational mobility across educational and occupational domains. The empirical analyses reported in Chapters 4, 5, and 6 require that the key outcome variables be defined and coded in a manner that is comparable across respondents and their mothers, enabling both current status and intergenerational mobility to be assessed using common metrics. Coding, therefore, served two related purposes. First, it enabled a standardized descriptive assessment of women's current educational attainment and employment/occupational position (Chapter 4). Second, it supported the construction of origin–destination measures for intergenerational mobility analysis, including transition matrices, directional mobility (upward, downward, and immobile), step-difference measures, and summary mobility indices (Chapters 5 and 6). The primary variables used in this coding framework were educational attainment and occupational status.

3.4.1 Educational Coding

Educational attainment was coded on a seven-point ordinal scale reflecting the formal structure of the Indian and Kerala education systems. This hierarchy ranges from no formal schooling to postgraduate education and above. The educational coding scheme used for mothers and daughters is detailed in Table 3.2.

Table 3.2*Educational Coding Scheme Used for Mothers and Daughters*

Code	Educational Level	Description/Years of Schooling Equivalent
0	No Schooling	Never attended formal school
1	Lower Primary	Completed Classes 1–4.
2	Upper Primary	Completed Classes 5–7.
3	Secondary	Completed Classes 8–10 (SSLC or Equivalent).
4	Higher Secondary	Completed Grades 11–12 (Pre-Degree, Plus Two, or Equivalent).
5	Graduation	Bachelor's Degree in any Discipline.
6	Post-Graduation and Above	Master's Degree, M.Phil, or Ph.D.

Note. For the calculation of the Educational Step Difference (ESD), the numeric values (0–6) were treated as rank-ordered integers, where a higher value indicates a higher status.

3.4.2 Occupational Coding

Occupational status was operationalized in two complementary ways, reflecting the distinct analytical needs of different chapters. For the current employment profile (Chapter 4), respondents' activity status was captured using standard nominal categories (e.g., unemployed, homemaker, student, part-time employed, full-time employed, and self-employed) to facilitate descriptive comparisons.

However, for the intergenerational occupational mobility analysis (Chapter 6), a hierarchical coding system was required to quantify ordered movement across occupational strata between mothers and daughters. Accordingly, occupational status was coded using a hierarchical scale that reflects the increasing skill intensity, income potential, employment security, and social status associated with occupational categories. The coding was applied uniformly to both respondents and their mothers to support consistent origin–destination comparisons. While the broad logic of ordering is consistent with standard occupational classification principles (including the National Classification of Occupations), the categories were adapted to the empirical realities of women's work participation observed in the field. The hierarchical occupational coding scheme used in this study is presented in Table 3.3.

Table 3.3*Hierarchical Coding Scheme for Occupational Status*

Code	Occupational Category	Description
0	No paid occupation	Women not engaged in remunerative work.
1	Unskilled or agricultural labour	Casual/manual work requiring no formal training or education.
2	Skilled labour or informal self-employment	Manual or service work requiring specific skills or vocational experience.
3	Clerical or administrative work	Lower-tier white-collar or service jobs typically necessitate secondary education.
4	Teaching, healthcare, or skilled self-employment	Semi-professional roles necessitating diplomas or degrees.
5	Entrepreneur or higher professional roles	High-status roles necessitating progressive qualifications and decision-making power.

In order to measure intergenerational mobility patterns and describe women's current status, the study applied these coding frameworks to confirm analytical consistency. These coded variables serve as the foundation for the regression models, mobility indices, and transition matrices presented in the subsequent analytical chapters.

3.5 Framework for Measuring Intergenerational Mobility

This study uses a dual measurement framework that combines objective (quantitative) and subjective (perception-based) dimensions in order to offer a thorough analysis of intergenerational mobility. Subjective measures capture women's perceptions of progress, opportunity, and relative standing to their mothers, while objective measures offer quantifiable proof of actual changes in educational and occupational status across generations. As a result, the measurement framework is split into two parts: (a) objective mobility, which is quantitative indicators derived from origin-destination status comparisons, and (b) perceived mobility, which is a psychometric scale that evaluates perceived intergenerational change. While the relevant analytical chapters (Chapter 5 for educational mobility and Chapter 6 for occupational mobility) report the specific computational procedures, model specifications, and validation results, this section provides a brief summary of these measures.

3.5.1 Objective Measures of Intergenerational Mobility

The study used a variety of complementary quantitative indicators to capture the degree and type of intergenerational mobility in both education and occupation. An origin-destination framework was used to conceptualize intergenerational mobility, with the respondent's status considered as the destination and the mother's status treated as the origin. This method enables mobility to be analysed as a collection of quantifiable results that capture the direction, distance, and overall intensity of change across generations, in addition to being a descriptive pattern of movement across ordered categories.

Intergenerational transition matrices are a key component of the objective measurement approach. Using the mothers' and daughters' ordered educational codes, 7×7 transition matrices were constructed for educational mobility. Mothers' and daughters' hierarchical occupational codes were used to create 6×6 transition matrices for occupational mobility. Origin categories are represented by rows in both matrices, and destination categories are represented by columns. Immobility is represented by diagonal cells, upward mobility by cells above the diagonal, and downward mobility by cells below the diagonal. By providing a thorough map of intergenerational movements, these matrices enable a direct comparison of the mobility patterns of Muslim and non-Muslim women.

Three directional categories were also used to summarize origin-destination outcomes for interpretability and group-wise comparison: upward mobility (daughter above mother), immobility (daughter equal to mother), and downward mobility (daughter below mother). In addition to supporting statistical comparisons of mobility-type distributions across groups, this trichotomous classification provides a clear summary of mobility direction. It also acts as the outcome structure for the multinomial logistic regression models discussed in Chapter 6, which treat mobility direction as a categorical variable.

Step-difference measures were calculated to quantify the extent of intergenerational movement within the ordered scales. The daughter's educational

code less the mother's was used to calculate the Educational Step Difference (ESD), and similarly, occupational codes were used to calculate the Occupational Step Difference (OSD). Immobility is denoted by a value of zero, upward mobility by a positive value, and downward mobility by a negative value. By separating small movements from larger shifts across educational and occupational strata, these step-difference measures offer a distance-sensitive evaluation of mobility.

To quantify overall mobility intensity and distinguish upward and downward components of movement, summary mobility indices were calculated in addition to these distribution-based indicators. The overall movement of total normalised measure across ordered categories was calculated using the Bartholomew Index (B). In order to determine whether mobility is predominantly upward, predominantly downward, or balanced, direction-specific components were calculated as the upward mobility index (M^+) and the downward mobility index (M^-). This allowed for the derivation of a net mobility score ($M^+ - M^-$) and an upward share of total movement.

For educational mobility, one additional indicator was used to support category-based measures, i.e., the continuous schooling gap was constructed as the difference between the completed years of schooling of the respondent and her mother, thereby capturing intensity on a year-scale.

3.5.2 Perception-Based (Subjective) Measures of Intergenerational Mobility

Observed movement is captured by objective indicators, but they do not accurately represent respondents' interpretations of change across generations, especially in situations where developments in education do not equate to increased employment, security, or autonomy. Because of this, the study included both objective and perceived mobility measures. The Perceived Intergenerational Educational Mobility (PIEM) scale was used to measure perceived intergenerational educational mobility, and the Perceived Intergenerational Occupational Mobility (PIOM) scale was used to measure perceived intergenerational occupational mobility. Rather than focusing only on changes in formal status categories, both were created as Likert-

type multi-item instruments that capture respondents' assessments of intergenerational changes in opportunities, constraints, and lived outcomes. A five-point agreement scale, ranging from "Strongly Disagree" to "Strongly Agree," was used to record responses; higher scores show a greater sense of upward mobility. To ensure conceptual and contextual relevance, the items for both instruments were formed through a rigorous multi-stage process that included expert consultation, literature review, and pilot field testing.

Perceived changes in educational opportunities and conditions across generations, such as access to education, educational quality, barriers to continuing education, family support, and perceived educational returns, were the focus of the PIEM items, which were structured as clear mother-daughter comparisons. Additionally, the PIOM items recorded perceived generational shifts in employment-related opportunities and outcomes, such as the ability to engage in paid work, the perceived status and quality of work, financial independence, sociocultural limitations, working conditions, and job security. When taken as a whole, these tools capture the subjective aspects of women's perceptions and assessments of their progression over time.

The reliability and construct validity of the PIEM and PIOM scales were confirmed by thorough psychometric validation. To determine the underlying factor structure, exploratory factor analysis (EFA) was used. Eigenvalues greater than 1 and scree plot criteria were used to determine how many factors were kept. Confirmatory Factor Analysis (CFA) was then used to verify the constructs. Using Cronbach's alpha and Composite Reliability (CR), internal consistency and construct reliability were evaluated; coefficients met conventional acceptability thresholds. Measurement invariance between Muslim and non-Muslim women was examined using multi-group CFA utilizing the standard sequence of configural, metric, and scalar invariance, adhering to established evaluation criteria, in light of the thesis' comparative goal (Chen, 2007; Putnick & Bornstein, 2016). After the scales were validated, composite indices of perceived occupational and educational mobility were created. Chapters 5 and 6 contain the pertinent sections that report the scale

development procedures and the complete results of validation and invariance testing.

Through the integration of both objective and perception-based measures, the study captures not only the changes that have occurred across generations, but also how women have experienced and interpreted those changes. Subjective measurements show how women understand and adapt those changes in their lived realities, whereas objective measurements record visible structural change. This combined methodological approach allows for a comprehensive understanding of the realities and perceptions of intergenerational mobility among women in Kerala, improving the findings' validity, analytical depth, and policy relevance.

3.6 Statistical and Econometric Tools

A multi-tiered analytical framework that progressed from descriptive statistics to sophisticated multivariate econometric modeling and diagnostic validation was used to perform the quantitative analysis in this study. Three main categories can be used to classify the analytical tools.: (1) descriptive and inferential statistical techniques, (2) multivariate econometric models, and (3) diagnostic and robustness checks. Stata (Version 17) was used for advanced econometric regressions and decomposition analysis, while IBM SPSS Statistics (Version 27) was used for data management and analysis for descriptive and bivariate analysis. This section gives a brief overview of the analytical tools used in the study; detailed model specifications, mathematical derivations, and empirical results are reported in the respective analytical chapters

3.6.1 Descriptive and Inferential Statistics

To summarize the sociodemographic profile of respondents and compare the present educational and occupational status of Muslim and non-Muslim women, the first phase of analysis employed frequency distributions, percentages, cross-tabulations, and graphical displays. Origin-destination transition matrices (7×7 for education and 6×6 for occupation) were used to capture intergenerational mobility patterns and gives a detailed mapping of status shifts between generations.

To assess the statistical significance of observed group differences (e.g., between Muslim and non-Muslim women), a range of inferential tests was employed. Associations between categorical or ordinal variables were examined using Chi-square (χ^2) tests of independence. Given sparse-cell issues in some transition matrices, Monte Carlo-simulated p-values were reported alongside asymptotic p-values to strengthen the robustness of inference. When variables were ordinal in nature (e.g., educational and occupational codes), linear-by-linear association tests were used to assess monotonic trends, and Kendall's tau-b (τ_b) and Goodman–Kruskal's gamma (γ) were reported to quantify the strength and direction of ordinal association. Group-wise differences in the prevalence of specific constraints or barriers were assessed using two-sample proportion tests (z tests).

Mean differences between Muslim and non-Muslim women on continuous outcomes were tested using independent-samples t tests; where the homogeneity-of-variance assumption was not satisfied, Welch's t test was used as a robust alternative. Levene's test was used to assess variance equality. For ordinal outcomes (such as occupational ranks), the Mann–Whitney U test was employed as a non-parametric alternative. Where comparisons involved repeated binary responses across multiple items, Cochran's Q test was used to test whether the proportion endorsing the items differed across the set. Effect sizes, such as Cohen's d for mean comparisons and Cliff's delta for ordinal group comparisons, were calculated to confirm meaningful interpretation beyond simple statistical significance.

3.6.2 Econometric Modelling Strategy

The study estimated a series of regression models that matched the scale and distribution of each dependent variable in order to investigate factors that influence educational and occupational outcomes and to measure group disparities. In order to estimate the intergenerational transmission of schooling and the intensity of mobility (e.g., years gained), the occupational step difference (OSD) and the determinants of years of schooling were constructed using ordinary least squares (OLS) regression when the outcome was continuous. These models calculated the marginal effects of independent variables on educational achievement and mobility intensity. The

specification contained non-linear terms and interaction structures where appropriate, and the inference was based on standard errors that were robust to heteroskedasticity.

Blinder-Oaxaca decomposition was used to investigate the causes of group differences in educational attainment. This method breaks down the observed Muslim-non-Muslim educational gap in daughters into two parts: one that can be "explained" by group differences in observed characteristics (endowments) and the other that can be "unexplained" by differences in coefficients (returns to characteristics), which may be a reflection of contextual or structural inequality.

Directional mobility (upward, downward, and immobile) was modelled as a categorical dependent variable using multinomial logistic regression (MLR). This approach, which is explained in Chapter 6, made it possible to identify the variables linked to the likelihood of experiencing either upward or downward movement in comparison to immobility as a reference category. Relative Risk Ratios (RRR) and Average Marginal Effects (AME) were used to interpret the model results, providing clear policy-relevant insights into the factors influencing the direction of intergenerational mobility.

3.6.3 Model Diagnostics and Robustness Checks

A comprehensive series of diagnostic tests was carried out to guarantee the validity and dependability of the regression estimates. Using the link test and the Ramsey RESET test, functional form and specification adequacy were investigated. Both the White and Breusch-Pagan tests were used to test for heteroscedasticity, and robust standard errors were employed when needed to guarantee sound inference. The Variance Inflation Factor (VIF) was used to evaluate multicollinearity, and a threshold of 10 was applied to identify problematic variables. Histograms, Q–Q plots, and P–P plots were used to measure the residuals' normality, which was then statistically verified using the Shapiro–Wilk test. In order to make sure that outliers had no undue influence on regression estimates, Cook's distance and standardized residuals were also used to identify significant data points. Together, these diagnostic tests validated the estimated models' statistical sufficiency and interpretability.

This study used a strong and thorough analytical framework by combining descriptive statistics, inferential hypothesis testing, and rigorous multivariate econometric modeling. By providing a multifaceted understanding of mobility—capturing structural patterns, underlying causal drivers, and group-based disparities in educational and occupational attainment—this methodological pluralism improves the results' policy relevance.

3.7 Conclusion

This chapter described the study's methodology, including the data source, sampling strategy, measurement framework, and analytical approach used to look at the educational and occupational status as well as the intergenerational mobility of Muslim and non-Muslim women in Kerala. The final sample of 704 respondents (392 Muslim and 312 non-Muslim women) was sufficient for multivariate modeling and robust subgroup comparisons adequate to the multi-stage stratified sampling design, which was organized across region, religion, and urban–rural context. Informed by pilot-derived variability estimates, the precision-based sample size determination enhanced the comparative precision of estimates across religious groups and further reinforced statistical power.

A systematic, pre-tested interview schedule that guaranteed conceptual clarity, linguistic validity, and contextual appropriateness was used to gather primary data. Improved measurement consistency across locations, decreased item non-response, and uniform comprehension were all supported by the interviewer's format. Mothers and daughters could be compared across generations ensured a methodical coding system for education and occupation. A dual measurement framework that integrated validated perception-based scales (PIEM and PIOM) with objective indicators (transition matrices, directional mobility, step-difference measures, and summary mobility indices) was used to operationalize intergenerational mobility. Through the capture of both observable status movements and women's experienced assessments of intergenerational progress, this integrated strategy enhances construct coverage.

The study used a comprehensive analytical toolkit that included multivariate econometric modeling (OLS, multinomial logistic regression, and Blinder–Oaxaca decomposition), inferential testing, and descriptive profiling. The validity and robustness of all regression-based estimates were guaranteed by thorough diagnostic checks, which included tests for heteroscedasticity, multicollinearity, model specification, and outlier influence.

Overall, the study strengthens internal validity, comparative precision, and the findings' policy relevance by combining adequate sampling, meticulous measurement, and rigorous multivariate analysis. The results' generalizability and inferential strength are both improved by this methodologically pluralistic design, which combines objective and subjective dimensions. The empirical findings derived from the data, measurements, and analytical techniques established in this chapter are presented in the subsequent chapters.

Chapter 4

EDUCATIONAL ATTAINMENT, EMPLOYMENT, AND OCCUPATIONAL STATUS OF MUSLIM AND NON-MUSLIM WOMEN IN KERALA: A COMPARATIVE ANALYSIS

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Chapter 4

EDUCATIONAL ATTAINMENT, EMPLOYMENT, AND OCCUPATIONAL STATUS OF MUSLIM AND NON-MUSLIM WOMEN IN KERALA: A COMPARATIVE ANALYSIS

4.1 Introduction

Women's empowerment and mobility are intrinsically linked to their educational attainment, employment opportunities, and economic autonomy, which collectively influence their social standing and intergenerational prospects (Kabeer, 2005; Sen, 1999). In India, and particularly in Kerala—a state often lauded for its high literacy rates, favourable sex ratio, and progressive social indicators—religion continues to intersect with gender in complex ways to influence socio-economic outcomes (Kurien, 2002; Oommen, 2008). Although Kerala performs better than most Indian states on gender development measures, persistent disparities exist between Muslim and non-Muslim women, created by cultural, structural, and economic barriers (Hasan & Menon, 2005; Sachar Committee Secretariat, 2006). These disparities raise important questions about the extent to which educational and occupational mobility is equitably distributed across communities.

Existing literature suggests that Muslim women face specific disadvantages in terms of educational discontinuity, lower labour market participation, and reduced economic autonomy, often attributed to patriarchal norms, limited access to networks, and socio-cultural restrictions (Hasan & Menon, 2005; Jeffery & Jeffery, 1996). Against this backdrop, this chapter addresses the first & Second objective of the study: to assess and compare the current levels of educational attainment, employment status and occupational structure of Muslim and non-Muslim women in Kerala. In doing so, the chapter provides a baseline understanding of women's present position, thereby offering the background for the subsequent chapters that analyse intergenerational educational and occupational mobility in a comparative framework.

Subsequent sections are structured as follows: Section 4.2 presents the socio-demographic profile of the respondents to establish comparability between the two groups. Section 4.3 evaluates educational attainment, discontinuity, and barriers. Section 4.4 examines employment and occupational status, including motivations for employment and reasons for unemployment... Finally, Section 4.5 summarises the findings and concludes the chapter with policy implications.

4.2 Socio-Demographic Profile of the Respondents

A careful understanding of respondents' socio-demographic characteristics is essential for establishing comparability between Muslim and non-Muslim women and for interpreting subsequent analyses of educational and occupational mobility. Background variables such as age, religious affiliation, social group, marital status, household size, geographic region, and residential location can significantly shape women's opportunities and constraints. Documenting these dimensions not only demonstrates the representativeness and balance of the sample but also highlights contextual differences that may influence mobility outcomes. Accordingly, this section presents a detailed socio-demographic profile of the respondents, thereby laying the foundation for meaningful comparative analysis across the two religious communities.

4.2.1 Age Profile of Respondents

To ensure the validity of intergroup comparisons in the analysis of educational and employment mobility, it is essential to establish the demographic comparability of Muslim and non-Muslim women in the sample. Age is a particularly important factor, as it can influence individual status outcomes and mobility patterns. Demonstrating age balance across groups strengthens the internal validity of the study and affirms the robustness of the sampling design.

The age group distribution is presented in Table 4.1. The majority of respondents in both religious groups were aged 30 years or below. Across all six age bands, the proportions were relatively similar, with no indication of significant over- or under-representation by religion.

A chi-square test for association between religion and age group was not statistically significant, $\chi^2 (5, N = 704) = 4.64, p = .462$, with a negligible effect size (Cramer's $V = .081$). This suggests that the categorical age distribution is independent of religious affiliation.

Table 4.1*Age Distribution of Respondents by Religious Group*

Sl. No.	Age Group (Years)	Muslim	Non-Muslim	Total	Chi-Square Test Results
1	≤ 30	140 (35.7%)	121 (38.8%)	261 (37.1%)	$\chi^2 = 4.635$ $df = 5$ $p = .462$ Cramer's $V = .081$ $P = .462$
2	31 – 35	53 (13.5%)	36 (11.5%)	89 (12.6%)	
3	36 – 40	59 (15.1%)	39 (12.5%)	98 (13.9%)	
4	41 – 45	51 (13.0%)	40 (12.8%)	91 (12.9%)	
5	46 – 50	59 (15.1%)	41 (13.1%)	100 (14.2%)	
6	51 – 55	30 (7.7%)	35 (11.2%)	65 (9.2%)	
Total		392 (100%)	312 (100%)	704 (100%)	

Note. Cell values indicate observed frequencies, and figures in parentheses represent column percentages within each religious group. The chi-square test examines the independence of association between religious affiliation and age group, i.e., whether age distribution significantly differs across Muslim and non-Muslim women.

Source: Primary survey data (2025).

To further evaluate age comparability, descriptive statistics are provided in Table 4.2. The mean age of both groups was nearly identical, and the standard deviations were also comparable, indicating a similar age spread. Since Levene's test indicated unequal variances ($F (1, 702) = 4.75, p = .030$), Welch's t -test was used to compare group means. The result confirmed no statistically significant difference in mean age, $t (646.29) = 0.03, p = .974$. The effect size, as measured by Cohen's d , was 0.002, indicating a negligible difference in age distribution between the two groups.

Table 4.2*Descriptive Statistics of Age by Religious Group*

Sl. No.	Religion	Mean	SD	Skewness	Kurtosis	Min.	Max.	N
1	Muslim	36.78	9.24	0.27	-1.25	25	54	392
2	Non-Muslim	36.76	9.86	0.28	-1.35	25	54	312
Total		36.77	9.51	0.28	-1.29	25	54	704

Source: Primary survey data (2025).

These results suggest that the two groups are age-balanced, allowing for meaningful and unbiased comparisons across religious communities in the subsequent analyses.

4.2.2 Religious Affiliation of the Respondents

Religious affiliation is a key background variable in this study, as the core objective is to comparatively assess intergenerational educational and occupational mobility between Muslim and non-Muslim women in Kerala. Figure 4.1 displays the religious composition of the 704 respondents included in the study.

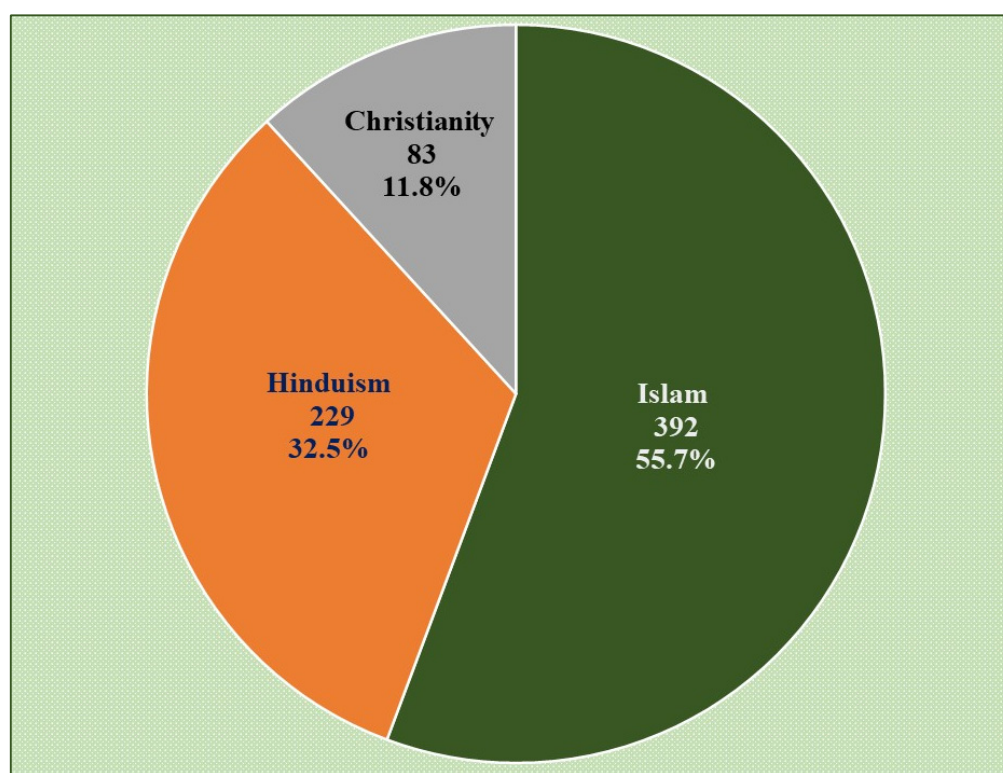
While the sampling design of the study deliberately includes a slightly higher proportion of Muslim women to ensure analytical depth on the focal group, the representation of non-Muslim women—comprising both Hindus and Christians—is substantial enough to allow for meaningful comparative analysis. Among the non-Muslim category, both Hindus and Christians are represented in proportions that broadly reflect the religious demography of Kerala, with Hindus forming the majority among non-Muslims, followed by Christians. In subsequent analyses, Hindus and Christians are grouped as the non-Muslim category.

To examine whether the distribution of religious affiliation significantly differed from an equal split between Muslim and non-Muslim groups, a chi-square goodness-of-fit test was performed. The test was statistically significant, $\chi^2(1, N = 704) = 9.09, p = .003$. However, the effect size, measured using Cohen's w^1 , was 0.114, indicating a small and practically negligible deviation from equal proportions.

¹ Cohen's w is an effect size for chi-square tests, calculated as: $w = \sqrt{\frac{\chi^2}{N}}$, where χ^2 is the chi-square statistic and N is the total sample size.

Figure 4.1

Religious Composition of the Sample



Source: Constructed from primary survey data (2025)

Thus, the sample contains a slightly higher number of Muslim women compared to non-Muslims, which reflects the study's focus on examining mobility patterns within the Muslim community. Although the difference in group proportions is statistically significant, the variation is small in practical terms. Overall, the sample remains sufficiently balanced to support meaningful and credible comparisons between the two groups.

4.2.3 Social Group Representation Among the Respondents

Social group, commonly referred to as caste or community classification, remains a key socio-economic stratifier in India, particularly in determining access to education, employment, and intergenerational mobility. Table 4.3 and Figure 4.2 show the distribution of respondents across three major social categories: Scheduled

Castes and Scheduled Tribes (SC/ST), Other Backward Classes (OBC), and Others (General category).

The data reveal that the majority of respondents in the sample belong to the OBC category, followed by those in the 'Others' category, with a smaller proportion identifying as SC/ST. This overrepresentation of OBC respondents is closely tied to the religious composition of the sample, since the study focuses on Muslim women in Kerala, and most Muslims in the state are officially classified under the OBC category. In addition, the OBC segment also includes some Hindu women, contributing to its higher overall share.

To assess whether the observed social group distribution diverges significantly from the population structure of Kerala, a chi-square goodness-of-fit test was conducted using expected proportions from the 2011 Census (SC/ST: 10.6%, OBC: 48.5%, Others: 40.9%). The test yielded a statistically significant result, $\chi^2 (2, N = 704) = 20.72, p < .001$, indicating that the observed distribution significantly differs from the state-level proportions. The effect size, calculated using Cohen's w , was 0.302, which represents a moderate deviation between the sample distribution and the expected state-level distribution.

Table 4.3

Social Group Classification of Respondents and Chi-Square Test Results

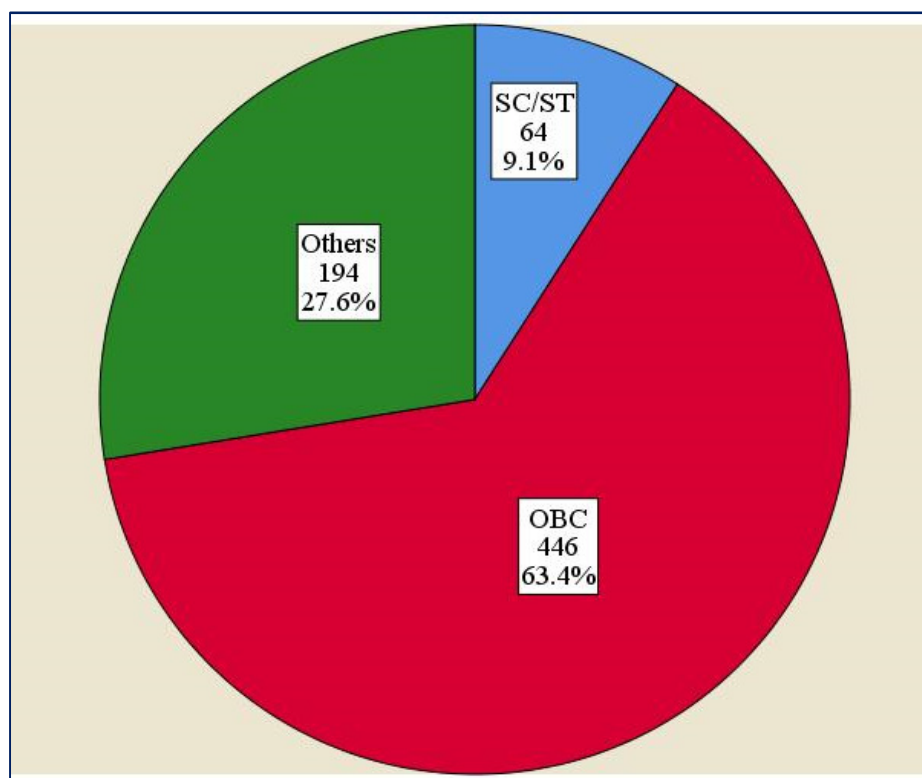
Sl. No.	Social Group	Number of Respondents	Percentage	Chi-Square Test Results
1	SC/ST	64	9.1	$\chi^2 = 20.722$ $df = 2$ $p < .001$ Cohen's $w = 0.302$
2	OBC	446	63.4	
3	Others	194	27.6	
	Total	704	100.0	

Note. A chi-square goodness-of-fit test was conducted to compare the observed social group distribution in the sample with the expected proportions based on the 2011 Census of Kerala (OBC: 48.5%, SC/ST: 10.6%, Others: 40.9%). Cohen's w measures the effect size.

Source: Primary survey data (2025); Census of India 2011.

Figure 4.2

Distribution of Respondents by Social Group



Source: Constructed from primary survey data (2025).

The results show that OBC respondents are significantly overrepresented in the sample relative to the general population distribution, while SC/ST and Others are underrepresented. This pattern is expected and analytically justified, given that the study intentionally includes a large proportion of Muslim women, the majority of whom in Kerala are classified as OBC. The inclusion of OBC Hindus further increases this share. While the sample distribution statistically differs from the general population, the moderate effect size and the intentional oversampling of Muslim women ensure that the representation aligns with the analytical goals of the study and supports valid inter-group comparisons in the sections that follow.

4.2.4 Marital Status of the Respondents

Marital status is a key demographic characteristic that can influence women's access to educational continuation, employment, economic resources, and autonomy.

In the context of this study, understanding the marital status distribution among Muslim and non-Muslim women provides essential context for interpreting their intergenerational mobility patterns in a comparative framework. The distribution of marital status by religious affiliation is presented in Table 4.4 and illustrated in Figure 4.3.

The distribution shows marked differences between Muslim and non-Muslim women in terms of marital status. The majority of women in both groups were currently married, though a noticeably higher proportion of Muslim women fell into this category compared to their non-Muslim counterparts. Conversely, the proportion of never-married women was considerably higher among non-Muslim respondents. The proportion of widowed and divorced/separated women was relatively low in both groups, with a slightly higher representation among Muslim women.

The chi-square test of independence revealed a statistically significant association between religion and marital status, $\chi^2(3, N = 704) = 53.95, p < .001$, with a moderate effect size (Cramer's $V = 0.277$), indicating moderate variation between the groups.

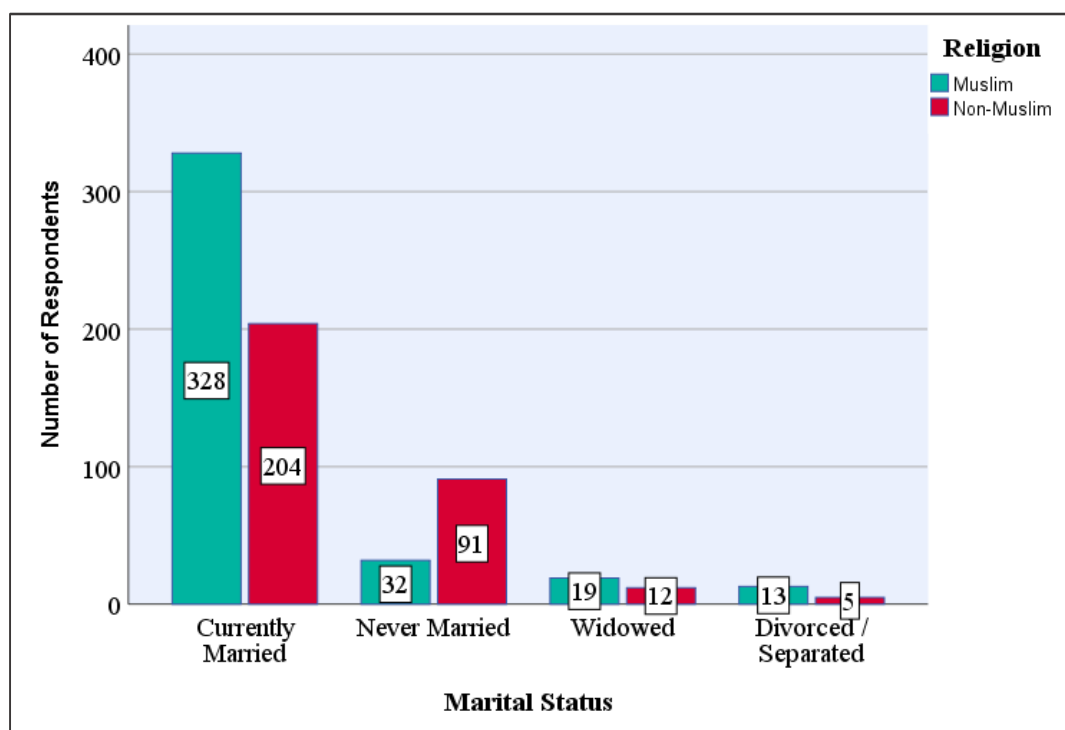
Table 4.4

Marital Status of Respondents by Religious Group

Sl. No.	Marital Status	Muslim	Non-Muslim	Total	Chi-Square Test Results
1	Currently Married	328 (83.7%)	204 (65.4%)	532 (75.6%)	$\chi^2 = 53.945$
2	Never Married	32 (8.2%)	91 (29.2%)	123 (17.5%)	$df = 3$
3	Widowed	19 (4.8%)	12 (3.8%)	31 (4.4%)	$p < .001$
4	Divorced / Separated	13 (3.3%)	5 (1.6%)	18 (2.6%)	Cramer's $V = .277$
	Total	392 (100%)	312 (100%)	704 (100%)	$P < .001$

Note. Cell values represent observed frequencies, and percentages in parentheses indicate column-wise proportions within each religious group. The chi-square test examines the association between marital status and religious affiliation. Cramer's V reflects the effect size.

Source: Primary survey data (2025).

Figure 4.3*Marital status of Respondents by Religious Group*

Source: Constructed from the primary survey data (2025).

4.2.5 Household Size of the Respondents

Household size plays a significant role in shaping women's economic responsibilities, educational access, and employment opportunities—factors central to intergenerational mobility. In this study, household size is categorized into four meaningful categories: small (1–3 members), medium (4–5 members), large (6–7 members), and very large (8 or more members), based on observed distribution patterns.

Table 4.5 summarises household size distribution across religious groups. The data show that medium-sized households are the most common across both religious groups. However, small households are more prevalent among non-Muslim women, whereas large and very large households (6 or more members) are more common among Muslim women. This pattern suggests a tendency toward extended or joint

family arrangements among Muslim respondents compared to a relatively smaller household structure among non-Muslim women.

A chi-square test of independence showed a statistically significant association between religious affiliation and household size, $\chi^2 (3, N = 704) = 29.17, p < .001$. The effect size (Cramer's $V = 0.204$) indicates a moderate relationship, suggesting meaningful differences in household size patterns between Muslim and non-Muslim women.

Table 4.5

Household Size of Respondents by Religious Group

Sl. No.	Marital Status	Muslim	Non-Muslim	Total	Chi-Square Test Results
1	Small (1–3 members)	67 (17.1%)	70 (22.4%)	137 (19.5%)	$\chi^2 = 29.165$ $df = 3$ $p < .001$ Cramer's $V = .204$ $P < .001$
2	Medium (4–5 members)	224 (57.1%)	210 (67.3%)	434 (61.6%)	
3	Large (6–7 members)	80 (20.4%)	29 (9.3%)	109 (15.5%)	
4	Very Large (≥8 members)	21 (5.4%)	3 (1.0%)	24 (3.4%)	
Total		392 (100%)	312 (100%)	704 (100%)	

Note. Cell values represent observed frequencies, and percentages in parentheses indicate column-wise proportions within each religious group. The chi-square test examines the association between household size category and religious affiliation. Cramer's V reflects the effect size.

Source: Primary survey data (2025).

4.2.6 Geographical Region of the Respondents

Geographical distribution is a crucial dimension in understanding regional variations in access to education, employment opportunities, and socio-economic mobility. To ensure regional representation and enhance the generalisability of findings, the sample was drawn from three major districts across Kerala, representing the northern, central, and southern zones of the state. Malappuram district was selected from Northern Kerala, Ernakulam from Central Kerala, and

Kollam from Southern Kerala. The selection was based on both regional representation and the relative concentration of the study's focal group—Muslim women—in these areas.

Table 4.6 and Figure 4.4 present the zone-wise distribution of Muslim and non-Muslim women respondents. The largest proportion of Muslim respondents came from northern Kerala, while non-Muslim respondents were more evenly distributed across the three zones, with slightly higher shares in central and southern Kerala. The data reflect the demographic and geographic concentration of the Muslim population, particularly in Northern Kerala.

A chi-square test of independence revealed a statistically significant association between religious affiliation and geographic zone, $\chi^2 (2, N = 704) = 15.58, p < .001$. The effect size, measured by Cramer's $V = 0.158$, indicates a small to moderate association, suggesting that religion and geographic location are meaningfully linked in this sample, particularly due to the spatial clustering of Muslim populations in Northern Kerala.

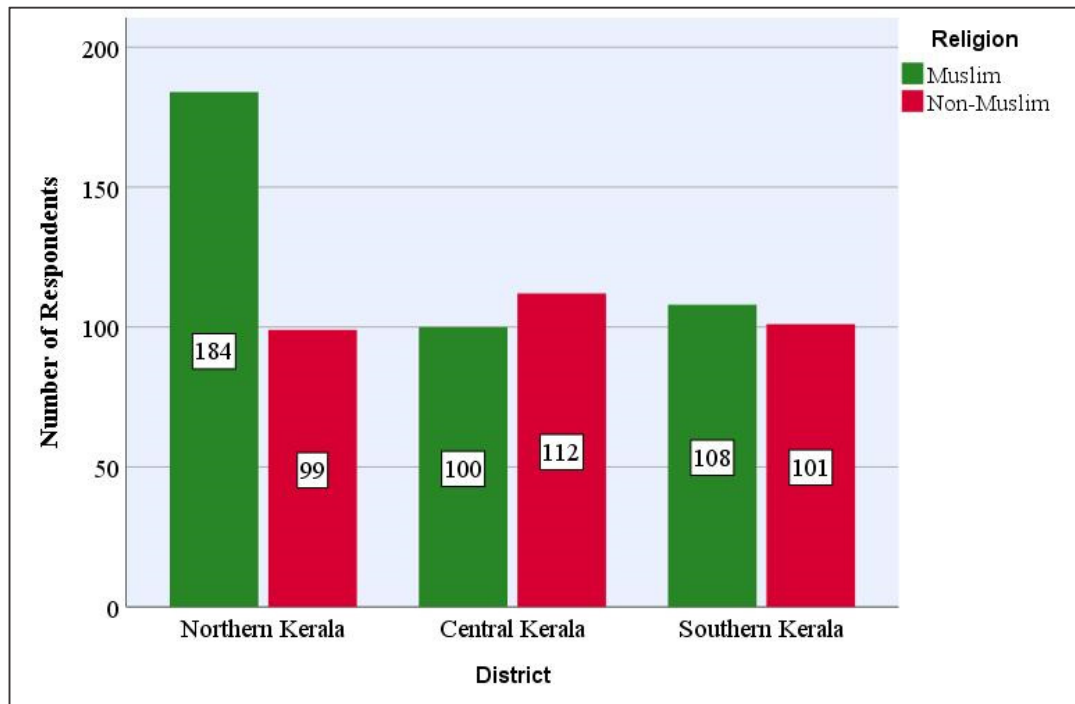
Table 4.6

Geographical Zone of Respondents by Religious Group

Sl. No.	Geographical Zone	Muslim	Non-Muslim	Total	Chi-Square Test Results
1	Northern Kerala	184 (46.9%)	99 (31.7%)	283 (40.2%)	$\chi^2 = 15.580$ $df = 2$ $p < .001$ Cramer's $V = .158$ $p < .001$
2	Central Kerala	100 (25.5%)	112 (35.9%)	212 (30.1%)	
3	Southern Kerala	108 (27.6%)	101 (32.4%)	209 (29.7%)	
	Total	392 (100%)	312 (100%)	704 (100%)	

Note. Cell values represent observed frequencies, and percentages in parentheses indicate column-wise proportions within each religious group. The chi-square test evaluates the association between religious affiliation and geographical zone. Cramer's V indicates the strength of the association.

Source: Primary survey data (2025).

Figure 4.4*Geographical Zone of Respondents by Religious Group*

Source: Constructed from primary survey data (2025).

The geographic pattern of the sample reflects the spatial concentration of Muslim populations in Kerala, particularly in the northern region. This regional variation is consistent with known demographic trends in Kerala and reflects the intentional sampling strategy aimed at capturing the spatial concentration of the Muslim population for robust comparative analysis.

4.2.7 Residential Location of the Respondents

The type of residential location—rural, semi-urban, or urban—can significantly influence women's access to education, employment opportunities, and exposure to economic resources. In the context of this study, categorizing respondents by residential location provides crucial insights into the spatial dimensions of socio-economic mobility.

As shown in Table 4.7, a majority of respondents in both religious groups reside in rural areas, though the proportion is higher among Muslim women. Non-

Muslim women are more likely to reside in urban and semi-urban areas, indicating a somewhat more urbanized profile. This variation may reflect broader demographic trends in settlement patterns and access to urban centres among different religious communities in Kerala.

A chi-square test of independence revealed a statistically significant association between religion and residential location, $\chi^2 (2, N = 704) = 11.15$, $p = .004$. The effect size, measured by Cramer's V , was 0.126, indicating a small but meaningful relationship between religious affiliation and place of residence.

Table 4.7

Residential of Respondents by Religious Group

Sl. No.	Geographical Zone	Muslim	Non-Muslim	Total	Chi-Square Test Results
1	Rural	258 (65.8%)	168 (53.8%)	426(60.5%)	$\chi^2 = 11.154$ $df = 2$ $p = .004$ Cramer's $V = .126$ $p = .004$
2	Semi-Urban	93 (23.7%)	93 (29.8%)	186 (26.4%)	
3	Urban	41 (10.5%)	51(16.3%)	92 (13.1%)	
	Total	392 (100%)	312 (100%)	704 (100%)	

Note. Cell values represent observed frequencies, and percentages in parentheses indicate column-wise proportions within each religious group. The chi-square test evaluates the association between religious affiliation and residential location. Cramer's V measures the effect size.

Source: Primary survey data (2025).

Muslim women in the sample were predominantly located in rural areas, while non-Muslim women had greater representation in semi-urban and urban regions. These differences in residential context may have implications for women's access to services and opportunities, which should be considered in the interpretation of mobility outcomes across religious groups.

4.3 Current Educational Attainment of Muslim and Non-Muslim Women in Kerala: A Comparative Assessment

This section presents a comprehensive assessment of the current educational status of Muslim women in Kerala in comparison with their non-Muslim counterparts. It addresses both categorical qualifications and continuous measures of educational attainment, such as years of formal schooling. The aim is to examine the relative educational attainment of Muslim women, identify the extent and underlying reasons for educational discontinuity, and explore the specific challenges faced in pursuing formal education.

4.3.1 Relative Educational Status of Muslim and Non-Muslim Women in Kerala

Educational attainment is widely recognized as a key driver of upward mobility and empowerment, especially for women in developing contexts. This section compares the highest educational qualifications of Muslim and non-Muslim women in Kerala to assess group-level disparities in formal educational achievement.

4.3.1.1 Highest Educational Attainments

To assess the educational standing of Muslim women in Kerala relative to non-Muslims, the study first examined the highest formal qualifications obtained by the respondents. Table 4.8 presents the distribution of the highest educational qualifications attained by religious groups. While both groups show representation across all levels of education, Muslim women are relatively more concentrated in the lower and middle levels, such as secondary and higher secondary education. In contrast, non-Muslim women show greater representation at the higher education levels, particularly in post-graduation and professional qualifications, suggesting a more advanced educational profile.

A chi-square test of independence was conducted to examine the relationship between religious affiliation and highest educational attainment. The results confirmed a statistically significant association, $\chi^2(7, N = 704) = 31.53, p < .001$, with a small-to-moderate effect size (Cramer's $V = .212$). These results suggest that the educational achievements of women differ meaningfully across the two religious groups in Kerala, with Muslim women relatively underrepresented in higher education categories.

Table 4.8

Current Educational Status of Respondents by Religious Group

Sl. No.	Highest Educational Qualification	Muslim	Non-Muslim	Total
1	No Formal Schooling	1 (0.3%)	0 (0.0%)	1 (0.1%)
2	Lower Primary	4 (1.0%)	1 (0.3%)	5 (0.7%)
3	Upper Primary	21 (5.4%)	4 (1.3%)	25 (3.6%)
4	Secondary School	73 (18.6%)	40 (12.8%)	113 (16.1%)
5	Higher Secondary	96 (24.5%)	52 (16.7%)	148 (21.0%)
6	Graduation	89 (22.7%)	82 (26.3%)	171 (24.3%)
7	Professional Graduation	24 (6.1%)	26 (8.3%)	50 (7.1%)
8	Post Graduation & Above	84 (21.4%)	107 (34.3%)	191 (27.1%)
Total		392 (100%)	312 (100%)	704 (100%)

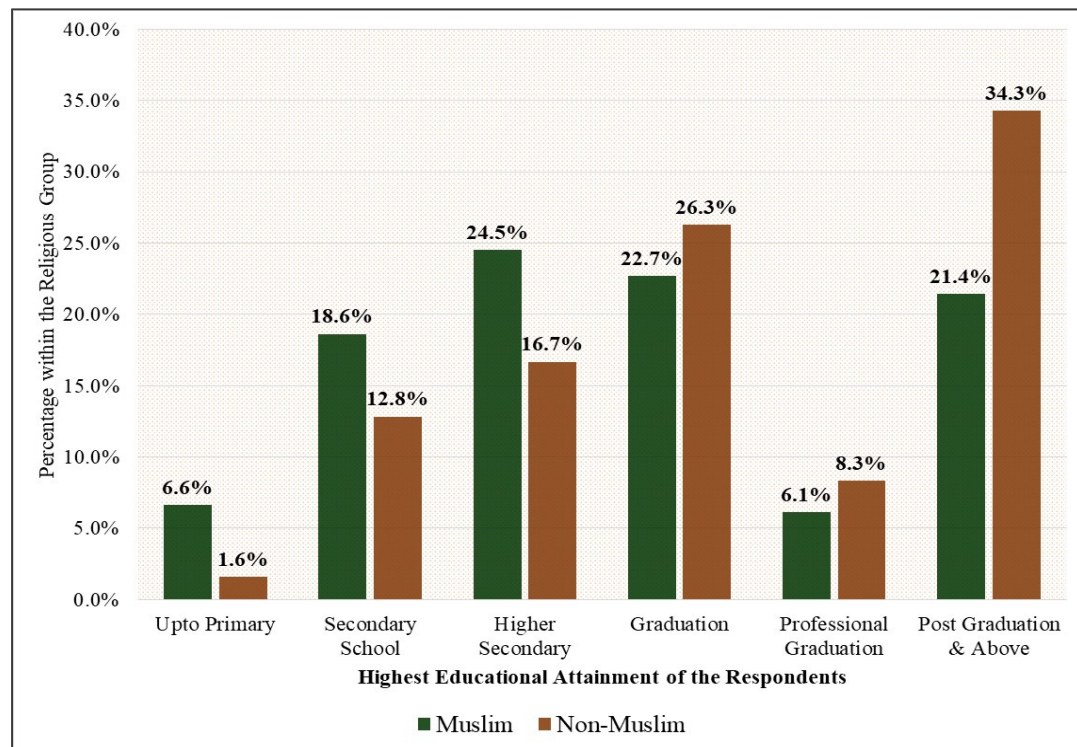
Note. Cell values represent frequencies with column-wise percentages in parentheses.

Source: Primary survey data (2025).

Figure 4.5 visually illustrates this distribution, highlighting the higher representation of non-Muslim women in advanced educational categories.

Figure 4.5

Current Educational Status of Respondents by Religious Group



Source: Constructed from primary survey data (2025).

These results are consistent with broader patterns of educational disparities in Kerala, where Muslim women, despite significant progress, still lag behind their non-Muslim peers in attaining higher levels of formal education.

4.3.1.2 Years of Formal Schooling

To supplement the categorical data on educational qualifications, the study also collected continuous data on the exact number of years of formal schooling completed by each respondent. This variable provides a continuous indicator of educational experience and helps assess the extent of educational participation across groups more precisely, which may not be captured by qualification categories alone.

Descriptive statistics (Table 4.9) revealed that, on average, Muslim women reported fewer years of formal schooling than their non-Muslim peers. A bar diagram (Figure 4.6) visually illustrates the difference between the two groups.

Given the presence of unequal variances between the groups, as indicated by Levene's test, $F(1, 702) = 9.208, p = .002$, Welch's t -test was used to compare means. The test revealed a statistically significant difference in mean years of formal schooling between the two groups, $t(694.30) = -5.15, p < .001$. The effect size, calculated using Cohen's d , was 0.39, indicating a small-to-moderate practical difference, suggesting that the observed difference, while statistically significant, also has practical relevance.

These results further support the conclusion that non-Muslim women in Kerala, on average, have greater exposure to formal education. Although the average difference is approximately one and a half years, its cumulative implications may be substantial in terms of career prospects, access to higher education, and long-term empowerment.

Table 4.9

Descriptive Statistics and Welch's t-Test Results for Years of Formal Schooling Across the Religious Groups

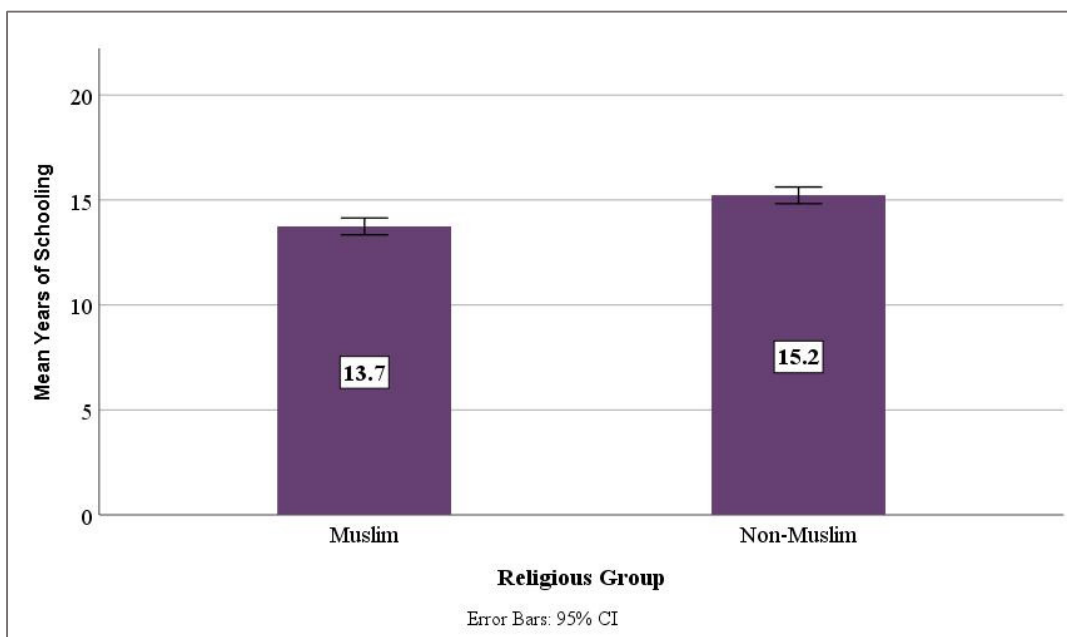
Sl. No.	Religious Group	Mean	SD	Skewness	Kurtosis	N	Welch's t-Test Results
1	Muslim	13.74	4.04	-0.28	-0.28	392	Welch's $t = -5.146$ $df = 694.30$ $p < .001$ Cohen's $d = 0.39$
2	Non-Muslim	15.22	3.57	-0.52	-0.18	312	
	Total	14.40	3.91	-0.41	-0.24	704	

Note. Welch's t-test was applied due to unequal variances as confirmed by Levene's test ($F(1, 702) = 9.208, p = .002$). Cohen's d measures the effect size.

Source: Primary survey data (2025).

Figure 4.6

Years of Formal Schooling by Religious Group



Source: Constructed from primary survey data (2025).

Together, the analyses of highest qualification and years of schooling reveal a consistent educational disadvantage among Muslim women in Kerala. While both groups have achieved considerable progress, Muslim women remain underrepresented in higher education and exhibit shorter durations of formal schooling on average. The statistically significant differences observed across both categorical and continuous indicators—reinforced by small-to-moderate effect sizes—highlight the persistent

educational gap. These statistically and practically significant differences may reflect the cumulative effects of structural, cultural, and economic barriers that limit sustained educational participation. The findings call for policy attention toward inclusive educational strategies that address the unique challenges faced by Muslim women to ensure equitable educational advancement.

4.3.2 Incomplete Education and Its Determinants

Educational continuity plays a pivotal role in determining long-term outcomes for women in terms of economic independence, social empowerment, and professional advancement. In the context of Kerala—known for its high overall literacy rates—examining patterns of incomplete education can reveal persistent inequalities, especially when viewed through the lens of religious identity.

4.3.2.1 Incidence of Incomplete Education

A substantial proportion of respondents in this study reported that they were unable to complete their intended level of formal education. As presented in Table 4.10, this issue was notably more prevalent among Muslim women, with nearly half reporting educational discontinuity. This is approximately twice the proportion observed among non-Muslim women. This disparity underscores the persistence of educational vulnerability among Muslim women in Kerala, necessitating further exploration of the underlying reasons.

A chi-square test of independence was conducted to compare the incidence of incomplete education between the two groups. The association was statistically significant, $\chi^2(1, N = 704) = 41.76, p < .001$, indicating that educational discontinuity is not evenly distributed across religious groups. The associated effect size (Cramer's $V = .244$) suggests a small to moderate association, indicating a meaningful group-level difference in the likelihood of educational discontinuity and a more significant barrier to educational completion among Muslim women. These findings suggest that religion is a meaningful predictor of educational discontinuity among women in Kerala.

Table 4.10*Incidence of Incomplete Education by Religious Group*

Sl. No.	Religious Group	Incomplete Education	Total Respondents	Percentage	Chi-square Test Results
1	Muslim	190	392	48.5%	$\chi^2 = 41.764$ $df = 1$ $p < .001$ $N = 704$ Cramer's $V = .224$ $p < .001$
2	Non-Muslim	77	312	24.7%	
	Total	267	704	37.9%	

Note. The percentage indicates the share of respondents within each religious group who reported incomplete education. Cramer's V represents the effect size.

Source: Primary survey data (2025).

4.3.2.2 Reasons for Educational Discontinuity

To understand the underlying causes of educational discontinuity, respondents who reported incomplete education were asked to state the primary reason for discontinuation. As shown in Table 4.11, the patterns differed across religious groups. Among Muslim women, early marriage or family responsibilities emerged as the most frequently cited reason for discontinuing education, while financial constraints were the predominant reason among non-Muslim women. Although other factors, including attitudinal biases, religious-cultural factors, and school accessibility issues, were cited, these were relatively less frequent across both groups.

To statistically examine whether the pattern of reasons for educational discontinuity differed significantly by religious affiliation, a chi-square test of independence was conducted. The result was not statistically significant at the conventional 5% level, $\chi^2 (5, N = 267) = 10.66, p = .059$. However, the effect size (Cramer's $V = .200$) suggests a small but non-trivial difference in the distribution of reasons between the two groups.

Table 4.11*Primary Reason for Incomplete Education by Religious Group*

Sl. No.	Primary Reason for Incomplete Education	Muslim	Non-Muslim	Total
1	Financial constraints	69 (36.3%)	38 (49.4%)	107 (40.1%)
2	Marriage or family responsibilities	95 (50.0%)	25 (32.5%)	120 (44.9%)
3	Lack of access to schools	6 (3.2%)	4 (5.2%)	10 (3.7%)
4	Cultural or religious norms	7 (3.7%)	1 (1.3%)	8 (3.0%)
5	Negative attitude towards girls' education	9 (4.7%)	8 (10.4%)	17 (6.4%)
6	Disconnect between religious and formal education	4 (2.1%)	1 (1.3%)	5 (1.9%)
Total		190(100%)	77(100%)	267(100%)

Note. Cell values represent observed frequencies, and percentages in parentheses indicate column-wise proportions within each religious group.

Source: Primary survey data (2025).

Although the chi-square test did not reach conventional statistical significance, the effect size indicates a small but meaningful difference in the pattern of reasons across religious groups. The pattern points to a higher prevalence of family- or marriage-related discontinuation among Muslim women, whereas non-Muslims more frequently cited financial barriers. This variation in challenges underscores the influence of socio-cultural contexts on women's educational journeys and signals the need for group-specific interventions.

4.3.3 Specific Challenges Faced in Completing Education

Beyond identifying the primary reasons for educational discontinuation, the study also explored specific challenges women encountered while pursuing their formal education. Respondents were presented with a predefined list of seven potential barriers and were permitted to select multiple items. This section compares the incidence and cumulative intensity of these challenges between Muslim and non-Muslim women in Kerala, using multiple statistical methods to assess both within-group patterns and between-group differences.

4.3.3.1 Nature and Group-Level Differences in Educational Challenges

Table 4.12 presents the specific challenges reported by respondents, grouped by religious affiliation, along with two-sample z-test results and effect sizes (Cohen's

h) comparing the proportions between Muslim and non-Muslim women. Muslim women more frequently cited family responsibilities, financial issues, lack of motivation, and societal restrictions as major challenges. Non-Muslim women, in contrast, reported fewer overall challenges and showed a relatively higher proportion only for financial issues and family care.

Table 4.12

Proportion of Respondents Reporting Specific Educational Challenges by Religious Group and Z-Test Results

Sl. No.	Specific Challenge	Muslim (n = 392)	Non-Muslim (n = 312)	Total (n = 704)	Z-Test Results	Effect Size (Cohen's <i>h</i>)
1	Financial issues	84 (21.4%)	59 (18.9%)	143 (20.3%)	$z = 0.83$, $p = .409$	0.06
2	Distance to school	17 (4.3%)	8 (2.6%)	25 (3.6%)	$z = 1.26$, $p = .207$	0.09
3	Family responsibilities	106 (27.0%)	39 (12.5%)	145 (20.6%)	$z = 4.74$, $p < .001$	0.34
4	Dependent parents/children	31 (7.9%)	20 (6.4%)	51 (7.2%)	$z = 0.76$, $p = .446$	0.06
5	Societal or cultural restrictions	44 (11.2%)	6 (1.9%)	50 (7.1%)	$z = 4.77$, $p < .001$	0.41
6	Lack of motivation or encouragement	71 (18.1%)	20 (6.4%)	91 (12.9%)	$z = 4.60$, $p < .001$	0.36
7	Disconnect between religious and formal education	25 (6.4%)	2 (0.6%)	27 (3.8%)	$z = 3.94$, $p < .001$	0.35
8	None of these challenges reported	182 (46.4%)	205 (65.7%)	387 (55.0%)	$z = -5.11$, $p < .001$	0.39

Note. Cell values are frequencies with percentages in parentheses. Percentages reflect the proportion of respondents in each group who selected the respective challenge (multiple responses allowed). Two-sample z-tests were used to compare the proportions across religious groups. Cohen's *h* is calculated using the arcsine transformation: $Cohen's\ h = 2 \times |\arcsin(\sqrt{p_1}) - \arcsin(\sqrt{p_2})|$, where p_1 = Muslim group, p_2 = non-Muslim group. Cohen's *h* effect size threshold values: < 0.2 = negligible, $0.2-0.5$ = small, $0.5-0.8$ = medium, > 0.8 = large (Cohen, 1988).

Source: Primary survey data (2025).

4.3.3.2 Within-Group Differences in Challenge Incidence

To assess the within-group variability in challenge incidence, Cochran's Q tests were conducted separately for Muslim women, non-Muslim women, and the total sample. Results, summarised in Table 4.13, show statistically significant differences in the incidence of specific challenges for both Muslim and non-Muslim women, and across the total sample. This confirms that some challenges were more commonly experienced than others within each group.

Bonferroni-adjusted pairwise comparisons (not shown due to space constraints) confirmed that Muslim women were significantly more likely to report family responsibilities, financial issues, societal restrictions, and motivational barriers. In contrast, non-Muslim women reported fewer and less varied challenges, primarily financial and family-related.

Table 4.13

Cochran's Q Test for Within-Group Differences in Challenge Incidence

Sl. No.	Group	Cochran's Q	df	p -value
1	Muslim	165.735	6	< .001
2	Non-Muslim	133.530	6	< .001
3	Overall	265.283	6	< .001

Note. Cochran's Q test evaluates whether the incidence of different challenge types varies significantly within each group.

Source: Primary survey data (2025).

4.3.3.3 Overall Pattern Differences in Challenge Types: Between-Group Comparison

To examine whether the overall pattern of challenge types differed significantly across groups, a chi-square test was applied to the pooled multiple-response dataset. The result was statistically significant, $\chi^2 (7, N = 919) = 79.19$, $p < .001$, with Cramer's $V = .294$, suggesting small-to-moderate group-level differences. The sample size ($N = 919$) reflects the number of challenge instances reported, not unique respondents, which is methodologically appropriate for multiple-response analyses. The results indicate that Muslim and non-Muslim

women differed significantly in the types and frequency of educational challenges they encountered.

4.3.3.4 Challenge-Specific Differences

After establishing the difference in challenge patterns, a series of independent *z*-tests (see Table 4.12) was conducted to determine whether Muslim and non-Muslim women differed significantly in their reporting of each challenge. Four of the seven barriers showed statistically significant differences, where Muslim women were more likely to report challenges related to family responsibilities, societal and cultural norms, lack of motivation, and misalignment between religious and formal education. These group differences were also supported by moderate effect sizes, with Cohen's *h* ranging from 0.34 to 0.41. In contrast, the remaining items—financial difficulties, school distance, and dependent care—did not show statistically significant group-level disparities.

Interestingly, a significantly higher proportion of non-Muslim women reported facing none of the listed challenges, indicating a broader range of barriers experienced by Muslim women ($z = -5.11, p < .001, h = 0.39$).

4.3.3.5 Intensity of Educational Challenges

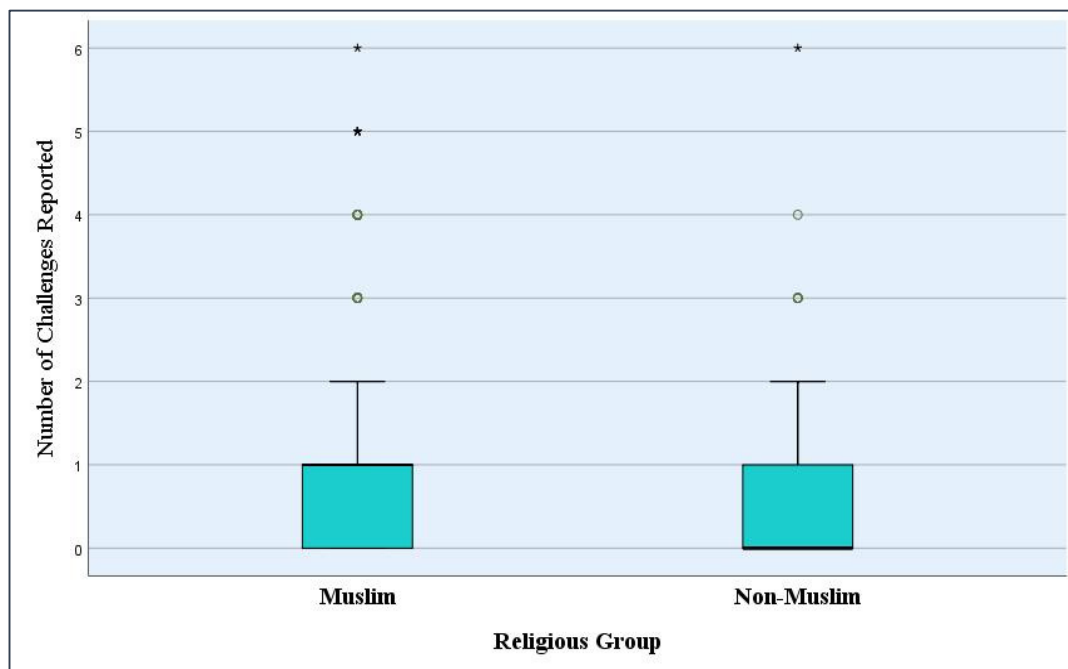
The cumulative intensity of educational barriers was further evaluated by counting the number of distinct challenges each respondent reported. Descriptive statistics (Table 4.14) indicated that Muslim women reported nearly twice the average number of challenges compared to non-Muslim women, indicating greater challenge intensity. Tests of normality using Shapiro–Wilk (Table 4.15) and box plot (Figure 4.7) revealed that the count of challenges was non-normally distributed for both groups, justifying the use of the Mann–Whitney *U* test for group comparison. The test revealed that Muslim women experienced significantly more challenges than their non-Muslim counterparts, $U = 49,364.00, Z = -5.103, p < .001$, with an effect size of $r = .192$, representing a small to moderate difference.

Table 4.14*Descriptive Statistics of the Number of Challenges Reported by Religion*

Sl. No.	Religion	Mean	SD	Skewness	Kurtosis	Median	Min.	Max.	N
1	Muslim	0.96	1.21	1.49	2.06	1.00	0	6	392
2	Non-Muslim	0.49	0.82	2.23	7.49	0.00	0	6	312
	Total	0.76	1.08	1.81	3.68	0.00	0	6	704

Note. Values represent the number of distinct challenges reported by each respondent

Source: Primary survey data (2025).

Figure 4.7*Box Plot of the Number of Challenges Reported by the Religious Group*

Source: Primary survey data (2025).

Table 4.15

Normality and Mann–Whitney U Test Results for Comparing the Number of Challenges by Religious Group

Sl. No.	Group	Normality Tests (Shapiro–Wilk)			Group Comparison Test (Mann–Whitney)		
		<i>W</i>	<i>df</i>	<i>p</i>	Test Statistic	Value	<i>p</i>
1	Muslim	0.770	392	< .001	Mann-Whitney <i>U</i>	49364.00	< .001
2	Non-Muslim	0.640	312	< .001	<i>Z</i>	-5.103	
	Total	0.715	704	< .001	<i>r</i>	-0.192	

Note. The Shapiro–Wilk test assesses the assumption of normality for number of challenges within each religious group. Given the significant non-normality, the Mann–Whitney U test was applied to examine group differences in challenge intensity. The effect size was measured using *r*, calculated as $r = \frac{z}{\sqrt{N}}$.

Source: Primary survey data (2025).

The findings collectively underscore that Muslim women in Kerala encounter both a greater variety and intensity of educational challenges compared to their non-Muslim counterparts. While financial barriers are common to both groups, Muslim women are disproportionately burdened by familial obligations, socio-cultural restrictions, motivational gaps, and religious-educational disconnects. These insights underline the necessity for community-specific educational support, particularly for Muslim women, aimed at addressing not only economic barriers but also cultural and familial obligations that hinder educational continuity.

4.4 Current Employment and Occupational Status of Muslim and Non-Muslim Women in Kerala: A Comparative Analysis

Employment and occupational engagement are vital dimensions of women's socio-economic status and empowerment. They determine not only financial independence but also influence social capital, agency, and overall mobility. Assessing the current employment and occupational status of women is essential to understanding their integration into the economic sphere and the extent of their participation in paid work. In the context of Kerala, a state celebrated for its human development achievements, it is important to assess whether religious differentials persist in women's labour market experiences. Comparing Muslim and non-Muslim women's employment and occupational status offers valuable

insight into structural disparities, cultural influences, and access to economic opportunities.

Employment status indicates participation in paid or unpaid economic activities, including formal employment, self-employment, and domestic roles. Occupational status reflects the type and nature of economic activity, highlighting women's roles in the labour market and their socio-economic positioning. For this study, employment status is broadly classified into six mutually exclusive categories, and the occupational breakdown of those employed is further analysed. Comparative analysis between Muslim and non-Muslim women offers insights into potential disparities shaped by cultural, economic, and social contexts in Kerala. Additionally, insights are gathered into the motivating or inhibiting factors behind women's employment or unemployment.

This section analyses the current employment patterns of Muslim and non-Muslim women based on their self-reported status, organized across four subsections. First, a comparative overview of current employment activity status is presented. Second, occupational distribution among employed women is analysed. Third, reasons for taking up employment are examined among those working. Finally, reasons for unemployment are explored among those not currently engaged in paid work. Each of these dimensions is explored across religious groups to assess relative positioning and differences.

4.4.1 Comparative Employment Status of Muslim and Non-Muslim Women

Table 4.16 presents the distribution of current activity status by religious group. The data show that a substantial share of respondents across both groups were homemakers, while nearly one-third were engaged in full-time employment. The proportion of women engaged in self-employment or part-time employment is relatively smaller. The chi-square test indicated no statistically significant association between religion and activity status, $\chi^2(5, N = 704) = 4.83, p = .437$. The effect size was also weak (Cramer's $V = .083$), suggesting that employment status did not meaningfully differ by religious identity.

Table 4.16*Current Employment Status of Respondents by Religious Group*

Sl. No.	Employment Status	Muslim	Non-Muslim	Total
1	Unemployed	36 (9.2%)	34 (10.9%)	70 (9.9%)
2	Homemaker	162 (41.3%)	110 (35.3%)	272 (38.6%)
3	Student	28 (7.1%)	31 (9.9%)	59 (8.4%)
4	Part-time Employed	23 (5.9%)	15 (4.8%)	38 (5.4%)
5	Full-time Employed	118 (30.1%)	104 (33.3%)	222 (31.5%)
6	Self-employed	25 (6.4%)	18 (5.8%)	43 (6.1%)
Total		392 (100%)	312 (100%)	704 (100%)

Note. Percentages reflect column-wise distribution within each religious group.

Source: Primary survey data (2025).

4.4.2 Comparative Occupational Status of Employed Women

This section presents the occupational distribution among currently employed women, classified by religious affiliation. Occupations were grouped into five meaningful categories to capture variations in skill level, autonomy, and occupational prestige: (1) low-skilled or agricultural labour, (2) moderately skilled informal work, (3) clerical and administrative roles, (4) professional and respected service roles, and (5) high-status entrepreneurial or professional roles. These categories allow for a better understanding of women's labour market participation by occupational stratification.

Table 4.17 displays the occupational status of employed women across Muslim and non-Muslim groups. The largest proportion of respondents in both groups reported working in professional or respected roles such as teaching, healthcare, or skilled self-employment. A relatively smaller share of women was found in unskilled labour, while a notable segment was engaged in moderately skilled or informal self-employment roles. Representation in high-prestige entrepreneurial or professional roles was limited and showed roughly equal representation between the groups.

A chi-square test of independence was conducted to determine whether the occupational distribution differed significantly between Muslim and non-Muslim women. The results were not statistically significant, $\chi^2(4, N = 303) = 3.44, p = .488$, indicating that the occupational status of employed women does not differ meaningfully by religion. The corresponding effect size (Cramer's $V = .106$) further confirms the negligible differences in occupational status between Muslim and non-Muslim women who are currently employed.

Table 4.17

Primary Occupational Status of Employed Respondents by Religious Group

Sl. No.	Occupational Category	Muslim	Non-Muslim	Total
1	Unskilled or Agricultural Labour (low-skilled, manual employment)	12 (7.2%)	12 (8.8%)	24 (7.9%)
2	Skilled Labour or Informal Self-Employment (moderate skill, low autonomy)	36 (21.7%)	40 (29.2%)	76 (25.1%)
3	Clerical/Administrative Work (formal, mid-level employment)	21 (12.7%)	12 (8.8%)	33 (10.9%)
4	Teaching, Healthcare, or Skilled Self-Employment (professional/respected roles)	83 (50.0%)	61 (44.5%)	144 (47.5%)
5	Entrepreneur or Higher Professional Role (high autonomy or occupational prestige)	14 (8.4%)	12 (8.8%)	26 (8.6%)
Total		166 (100%)	137 (100%)	303 (100%)

Note. Includes only currently employed respondents. Occupational categories were consolidated based on skill level and job formality.

Source: Computed from primary survey data (2025).

4.4.3 Motivations for Employment among Working Women: Comparative Insights

Table 4.18 presents the self-reported reasons for pursuing employment. A majority across both groups cited job suitability to educational background as their primary reason. However, a substantially higher share of non-Muslim women reported economic necessity out of poverty as the main motivator. In contrast,

motivation from family members and the desire to maintain social status were more prominent among Muslim women. A chi-square test revealed a statistically significant difference between groups, $\chi^2(4, N = 303) = 23.67, p < .001$, with a small-to-moderate effect size (Cramer's $V = .279$), indicating group differences in the motivation for job participation.

Table 4.18

Primary Motivation for Employment Engagement Among Employed Respondents by Religious Group

Sl. No.	Reason for Employment Engagement	Muslim	Non-Muslim	Total
1	Educational Suitability	76 (52.8%)	96 (60.4%)	172 (56.8%)
2	Economic Necessity	3 (2.1%)	22 (13.8%)	25 (8.3%)
3	Family Encouragement	12 (8.3%)	4 (2.5%)	16 (5.3%)
4	Financial Support for Household	31 (21.5%)	25 (15.7%)	56 (18.5%)
5	Maintain Social Status	22 (15.3%)	12 (7.5%)	34 (11.2%)
Total		144 (100%)	159 (100%)	303 (100%)

Note. Includes only currently employed respondents. Percentages reflect column-wise distribution within each religious group.

Source: Primary survey data (2025).

4.4.4 Reasons for Unemployment: A Comparative Perspective

Unemployed respondents were asked to specify the primary reason for not engaging in paid work (Table 4.19). Family or household responsibilities were the most commonly cited reason for both groups. Muslim women cited lack of interest and childcare responsibilities more often, while some non-Muslim women pointed to lack of opportunities or dependent care responsibilities.

Given the small sample size ($N = 70$) and low expected counts in multiple cells, Fisher's exact test was used, which did not yield a statistically significant result ($p = .077$). Nonetheless, the moderate Cramer's V value (.422) suggests a non-trivial difference in reported reasons for unemployment across groups, despite statistical non-significance.

Table 4.19*Reasons for Unemployment by Religious Group (Among Unemployed Respondents)*

Sl. No.	Reason for Unemployment	Muslim	Non-Muslim	Total
1	Family/Household Responsibilities	21 (48.8%)	11 (40.7%)	32 (45.7%)
2	Lack of Job Opportunities	7 (16.3%)	7 (25.9%)	14 (20.0%)
3	Childcare Responsibilities	3 (7.0%)	0 (0.0%)	3 (4.3%)
4	Caring for Dependent Parents	0 (0.0%)	3 (11.1%)	3 (4.3%)
5	Lack of Skill or Education	0 (0.0%)	2 (7.4%)	2 (2.9%)
6	Lack of Interest	9 (20.9%)	3 (11.1%)	12 (17.1%)
7	Cultural/Religious Restrictions	1 (2.3%)	0 (0.0%)	1 (1.4%)
8	Other Reasons	2 (4.7%)	1 (3.7%)	3 (4.3%)
Total		43 (100%)	27 (100%)	70 (100%)

Note. Includes only respondents currently unemployed. Percentages reflect column-wise distribution within each religious group.

Source: Primary survey data (2025).

4.4.5 Conclusion

The comparative analysis of employment and occupational status reveals broadly similar overall employment patterns between Muslim and non-Muslim women in Kerala. Both groups predominantly engage in roles such as homemaking or full-time employment, with relatively smaller proportions involved in self-employment or part-time activities. The occupational structure among employed women similarly indicates limited differences between the two groups, with a substantial representation in professional or respected roles such as teaching, healthcare, and skilled self-employment, and limited engagement in high-prestige entrepreneurial positions. These findings indicate that, at the aggregate level, Muslim women's employment and occupational status are comparable to those of non-Muslim women.

However, deeper examination of employment motivations and barriers highlights notable group-specific differences. Muslim women more frequently cited culturally embedded reasons such as maintaining family status, household responsibilities, and family encouragement as motivations influencing their employment decisions. In contrast, economic necessity was more prominent among non-Muslim women. Regarding unemployment, family and household responsibilities emerged as predominant reasons among both groups. However, Muslim women more often indicated barriers related to childcare responsibilities and lack of personal interest, while non-Muslim women highlighted external constraints such as limited job opportunities or dependent care obligations.

4.5 Concluding Remarks

This chapter assessed and compared the educational attainment, employment as well as occupational status of Muslim and non-Muslim women in Kerala to address the first & second objective of the study.

The findings show that women in Kerala have achieved moderate to high levels of educational attainment overall. However, consistent disparities persist, as Muslim women report fewer years of schooling, are underrepresented in higher education, and face higher risks of discontinuity.

The analysis of employment and occupational status shows that Muslim and non-Muslim women in Kerala have broadly comparable levels of labour market engagement. Both groups demonstrate moderate participation, with large proportions either in full-time work or homemaking, and smaller segments engaged in part-time or self-employment. Occupational structures also reveal similarity, with most employed women concentrated in professional and respected roles such as teaching, healthcare, and skilled self-employment, and very limited representation in higher-prestige entrepreneurial positions. Although motivations and barriers to employment differ—Muslim women more often citing family encouragement, social expectations, and childcare, and non-Muslim women emphasizing economic necessity and external opportunities—the overall distribution

of employment and occupational outcomes does not significantly differ between the groups.

Overall, the findings demonstrate that women in Kerala have reached moderate to high levels of education, moderate levels of employment and occupational engagement. At the same time, disparities remain between Muslim and non-Muslim women, especially in educational attainment. Thus, while women as a whole have benefited from Kerala's developmental achievements, Muslim women continue to experience specific disadvantages that constrain their full participation in education and the economy.

These findings carry important policy implications. Ensuring equitable outcomes requires sustained efforts to expand Muslim women's access to higher education, strengthen pathways into secure and remunerative employment, and promote financial inclusion through literacy programmes and improved access to banking and savings instruments. In addition, policies that reduce structural and cultural barriers—such as affordable childcare, flexible employment opportunities, and gender-sensitive workplace practices—are also critical. By addressing both common gendered constraints and the particular challenges faced by Muslim women, such policies can promote more inclusive and equitable development outcomes in Kerala.

Chapter 5

INTERGENERATIONAL EDUCATIONAL MOBILITY: A COMPARATIVE ANALYSIS OF MUSLIM AND NON-MUSLIM WOMEN IN KERALA

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Chapter 5

INTERGENERATIONAL EDUCATIONAL MOBILITY: A COMPARATIVE ANALYSIS OF MUSLIM AND NON-MUSLIM WOMEN IN KERALA

5.1 Introduction

Intergenerational educational mobility—how far children move up or down the educational ladder relative to their parents—is a cornerstone for assessing equality of opportunity and social progress (Hertz et al., 2007). In societies experiencing rapid educational expansion, widespread upward mobility may indicate that social origins are becoming less binding, while strong persistence indicates that family background continues to influence life chances (Black & Devereux, 2011). For much of the global South, including India, both these forces co-exist: while formal access to schooling has widened significantly, translation of this expansion into equalised opportunities across class, caste, religion, gender, and region remains uneven (Hannum & Buchmann, 2005).

Gaining an understanding of these mobility patterns is particularly important within the Indian context, where education remains a key pathway through which cycles of poverty and disadvantage are interrupted (Checchi, 2006). The country has experienced significant intergenerational gains in schooling, but inequalities persist along religious lines, among other dimensions (Azam & Bhatt, 2015; Desai & Kulkarni, 2008). Empirical work has tended to yield a consistent finding: that Muslims, and Muslim women especially, fall behind other major religious groups both at the point of completing education and in labour market outcomes, even after controlling for economic and geographic factors (Basant & Shariff, 2010; Desai & Dubey, 2012; Government of India, 2006).

Aggregate national patterns can sometimes obscure important regional variations. Kerala is a particularly interesting case, widely recognized for its high literacy rates and social development indicators that often surpass national averages

(Drèze & Sen, 2013; Zachariah & Rajan, 2004). One important question is whether Kerala's relatively progressive context has yielded an equitable distribution of educational progress across religious communities, or whether historical disadvantages are still reproduced across generations. A focused investigation of intergenerational educational transmission between mothers and daughters in Muslim households, compared with non-Muslim households, is therefore essential for understanding the depth and inclusiveness of Kerala's educational gains. Educational attainment represents one of the core dimensions of intergenerational mobility, partly because it is one of the most important channels through which socioeconomic status is transmitted and because it represents a precondition for subsequent success in one's occupation and economic status (Becker & Tomes, 1986; Heath & Jayachandran, 2017).

Against this backdrop, this chapter addresses the third objective of the study, which is to assess and compare the level, patterns, and determinants of intergenerational educational mobility among Muslim women in Kerala relative to non-Muslim women. Extending from the descriptive profile of current educational, and employment conditions presented in Chapter 4, this chapter moves to the intergenerational dimension by analyzing the association between each respondent's schooling and that of her mother. The analysis models mothers' education as the origin state and daughters' education as the destination state to examine the magnitude of upward mobility and whether the strength and shape of intergenerational transmission vary between Muslim and non-Muslim households.

The rest of the chapter proceeds in a structured way. First, the methodological framework is set out, including the coding of educational categories, the construction of multiple mobility measures—categorical, continuous and the econometric models estimated. The empirical analysis begins by describing mobility patterns using transition matrices, followed by the computation of summary mobility indices. The next sections present the estimates of regression models of intergenerational schooling transmission, decompose Muslim-non-Muslim differences in daughters' schooling into endowments and structural components, and analyse both the intensity and absolute

gains of educational mobility. A section adds a subjective dimension to this by analysing perceived educational mobility using a psychometrically validated scale. The final section synthesises the main findings of the chapter and draws out their implications for understanding religious differentials in educational opportunity among women in Kerala.

5.2 Methodological Framework

This study is based on a comprehensive, multi-pronged methodological approach to analysing intergenerational educational mobility from various perspectives. This section outlines strategies for measurement and the analytical tools used in the study. The empirical strategy follows the standard practice in the intergenerational mobility literature while adapting to the institutional and data context of Kerala (Azam & Bhatt, 2015; Black & Devereux, 2011; Emran & Shilpi, 2015; Hertz et al., 2007). Analysis makes use of data from 704 women aged 25–54 years, from 392 Muslim and 312 non-Muslim respondents; this age range allows most of the individuals to have finished formal education but permits meaningful intergenerational comparison across broadly comparable cohorts.

5.2.1 Educational Coding and General Definition

Educational attainment for both generations was coded into seven ordered categories to compare mothers' and daughters' schooling on a common scale: 0 (No schooling), 1 (Lower primary), 2 (Upper primary), 3 (Secondary), 4 (Higher secondary), 5 (Graduation), and 6 (Postgraduate and above). This categorical scheme captures the main transition points in the Kerala and Indian education systems and allows education to be treated as an ordered outcome while preserving meaningful distinctions between stages (Drèze & Kingdon, 2001). Mothers' education refers to the highest level completed by the respondent's mother, whereas daughters' education refers to the respondent's own highest completed level at the time of the survey.

These categories are mapped onto a seven-point ordinal scale to ensure comparability across generations and to capture meaningful thresholds in the

schooling system. Considering education as an ordered categorical variable and not purely a continuous measure is standard for studies of intergenerational educational mobility, especially when grade repetition, nonlinear returns to credentials, and institutional thresholds (like completion of secondary or higher secondary) are salient (Black & Devereux, 2011; Emran & Shilpi, 2015). Throughout, mothers' education is treated as the "origin" state while daughters' education is the "destination" state, forming the basis of transition matrices and other measures of mobility.

5.2.2 Intergenerational Mobility Measures

In the chapter, different measures of intergenerational educational mobility are used complementarily, following the established approaches in economics and sociology (Blanden, 2013; Jäntti & Jenkins, 2015).

First, 7×7 intergenerational transition matrices are constructed separately for Muslim women, non-Muslim women, and the pooled sample. In each matrix, rows represent mothers' education (origin state), and columns represent daughters' education (destination state). In each matrix, row percentages reveal, for a given maternal level, the distribution of daughters across educational categories. Diagonal cells capture intergenerational immobility (same category), cells above the diagonal capture upward mobility, and cells below the diagonal capture downward mobility. These matrices provide a visually and substantively rich mapping of intergenerational change and allow visual comparison between religious groups (Bartholomew, 1973; Shorrocks, 1978).

Second, the mobility matrices are reduced to three broad categories of mobility: downward mobility, daughter below mother; immobility, same category; and upward mobility, daughter above mother. This trichotomous categorization of mobility allows an easily interpretable summary of the mobility patterns and enables formal tests of whether the distribution of mobility types differs between Muslim and non-Muslim women.

Third, ordered "step-distance" measures are derived. For each mother-daughter pair, an educational step-difference (ESD) is computed as the daughter's education

code minus the mother's code to quantify the magnitude and direction of movement. Positive values indicate upward mobility, zero indicates immobility, and negative values indicate downward mobility. These step differences are used to compute summary mobility indices, including the Bartholomew index and related measures that summarise average movements across ordered categories (Bartholomew, 1973; Shorrocks, 1978). Direction-sensitive indices that distinguish upward from downward movements are also considered, following Fields and Ok's (1999) emphasis on directional mobility.

Fourth, the difference between the respondent's completed years of schooling and her mother's completed years is constructed as a continuous "schooling gap" in years. This variable is an absolute measure of the intensity of educational mobility. It enters parametric tests (e.g., t tests) and regression models that treat intergenerational mobility as a continuous outcome. By capturing within-category variation, this measure complements the categorical indices; for instance, a move from 10 to 12 years of schooling is registered even when both women fall within the same broad educational category.

Finally, the subjective dimension of educational mobility is measured through a psychometrically validated scale of perceived mobility. Respondents were asked to evaluate, using multi-item Likert-type questions, how they perceive their own educational position relative to that of their mothers. Starting with an initial item pool inspired by the broader literature on perceived social and economic mobility (e.g., Jäntti & Jenkins, 2015), items were adapted to an educational context. The scale was first explored through EFA in order to identify the underlying latent structure and drop poorly performing items, according to standard guidelines for the development of scales (DeVellis, 2017; Fabrigar & Wegener, 2012). Next, CFA was used to validate the measurement model and evaluate the construct reliability and validity. The final composite score obtained for perceived mobility is applied as a complementary outcome in Section 5.12, ensuring that any comparison between Muslim and non-Muslim women in terms of perceived intergenerational educational mobility is methodologically sound and conceptually meaningful.

5.2.3 Analytical Methods

The analytical approach in this chapter combines descriptive and inferential statistical methods—both bivariate and multivariate—to analyse intergenerational educational mobility.

At the bivariate level, transition matrices are examined using chi-square tests of independence and linear-by-linear association tests to assess whether mothers' and daughters' education are statistically associated and whether there is a monotonic (ordered) relationship across categories. Because some cells in the 7×7 matrices have small expected frequencies, Monte Carlo exact p values are reported alongside asymptotic chi-square p values to ensure robust inference under sparsity (Agresti, 2013). Ordinal association is quantified using *Kendall's tau-b* and *Goodman–Kruskal's gamma*, which are standard measures of intergenerational educational persistence (Breen & Jonsson, 2007; Goodman & Kruskal, 1979). Differences in the distribution of directional mobility (downward, immobile, upward) across religious groups are assessed using chi-square tests and the effect size measure *Cramer's V*. For the continuous schooling gap, group differences are examined using independent-samples t tests and corresponding effect sizes (*Cohen's d*). Where appropriate, non-parametric alternatives (e.g., *Mann–Whitney U tests* and *Cliff's delta*) are used to check robustness to departures from normality and homoskedasticity.

At the multivariate level, several regression specifications are estimated. To study intergenerational schooling transmission, daughters' years of schooling are regressed on mothers' schooling, with polynomial terms and interactions with religion to capture potential non-linearities and group-specific slopes, and with controls for fathers' education, household income, age (as a cohort proxy), location, and self-reported educational barriers. This approach follows standard practice in estimating intergenerational education regressions as a measure of persistence or “elasticity” of schooling across generations (Azam & Bhatt, 2015; Behrman et al., 2000; Hertz et al., 2007). Ordinary least squares (OLS) estimation is used, with heteroskedasticity-robust standard errors and diagnostic tests for functional form

(e.g., Ramsey RESET and link tests), multicollinearity (variance inflation factors), residual distribution, and influential observations (Wooldridge, 2010).

The Blinder-Oaxaca decomposition is used to decompose the Muslim–non-Muslim gap in daughters' schooling into components attributable to differences in characteristics, or endowments, and differences in coefficients, or returns to those characteristics (Blinder, 1973; Oaxaca, 1973). Twofold and threefold decompositions are reported, with alternative reference coefficient structures—including pooled and Reimers-type weighted coefficients—to assess robustness (Jann, 2008; Neumark, 1988; Reimers, 1983). This framework allows the analysis to distinguish how much of the observed religious gap arises because Muslim women come from less advantaged family backgrounds and how much arises because similar backgrounds yield different schooling outcomes across groups.

In subsequent sections, determinants of intergenerational mobility intensity (years gained) are modeled using OLS with robust standard errors,

Taken together, this methodological framework combines transition matrices, ordinal and continuous mobility measures, decomposition analysis, and regression models for intensity with a psychometrically validated measure of perceived mobility. It provides a comprehensive assessment of intergenerational educational mobility among Muslim and non-Muslim women in Kerala while also ensuring that the results are directly comparable with the wider literature on intergenerational mobility in both high-income and developing-country contexts.

5.3 Intergenerational Educational Mobility Patterns: Evidence from Transition Matrices

Intergenerational transition matrices provide the foundational framework for analyzing educational mobility, offering a comprehensive mapping of observed movements between parental and child educational categories. The analysis separates two different concepts: absolute mobility, or the actual observed movements between origin and destination classes, from relative persistence, or the underlying statistical association between origins and destinations that shows the strength of intergenerational

transmission (Erikson & Goldthorpe, 1992). This descriptive approach illustrates the actual educational flows experienced by daughters relative to their mothers.

This section explores how mothers' education translates into daughters' schooling outcomes using 7×7 intergenerational transition matrices for Muslim women, non-Muslim women, and the pooled sample. The matrices describe origin–destination movements across ordered educational categories, providing a structured visual summary of absolute upward mobility, downward mobility, and persistence along the diagonal. These descriptive patterns are complemented by chi-square tests and ordinal association measures, which evaluate the strength and direction of intergenerational linkages.

5.3.1 Intergenerational Transition Patterns across Religious Groups

Table 5.1 presents the intergenerational transition matrix for Muslim women. Rows correspond to mothers' highest completed level of education, and columns to daughters' levels. The main pattern is one of pronounced upward mobility: for each maternal category, the bulk of daughters are located in higher schooling levels rather than at or below their mothers' level. Even among mothers who had not completed any formal schooling, only a small share of daughters remains without schooling; most move into secondary or higher levels. As maternal education rises, immobility along the diagonal becomes more frequent, reflecting a tendency for daughters of already-educated mothers to match or slightly exceed their mothers' attainment. Notably, downward mobility (daughters falling below their mothers' category) is virtually absent across the Muslim sample.

Overall, the Muslim transition matrix points to a clear pattern of educational expansion across generations. Downward moves are rare, immobility is limited to a minority of cases at each origin level, and upward mobility is the dominant outcome, especially for women starting from low parental schooling. At the same time, the diagonal entries remain substantial, particularly in the upper part of the distribution, indicating that persistence at higher levels has begun to emerge alongside upward mobility from below.

Table 5.1

Intergenerational Education Transition Matrix — Muslim Women

Daughter → Mother ↓	0 No School	1 Lower Primary	2 Upper Primary	3 Secondary	4 Higher Secondary	5 Graduation	6 Postgrad+	Row total (n)
0 No School	1.8 (1)	7.3 (4)	12.7 (7)	40.0 (22)	23.6 (13)	9.1 (5)	5.5 (3)	100.0 (55)
1 Lower Primary	0.0 (0)	0.0 (0)	12.2 (9)	45.9 (34)	23.0 (17)	8.1 (6)	10.8 (8)	100.0 (74)
2 Upper Primary	0.0 (0)	0.0 (0)	9.6 (5)	25.0 (13)	42.3 (22)	11.5 (6)	11.5 (6)	100.0 (52)
3 Secondary	0.0 (0)	0.0 (0)	0.0 (0)	3.4 (4)	26.5 (31)	45.3 (53)	24.8 (29)	100.0 (117)
4 Higher Secondary	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	24.5 (12)	51.0 (25)	24.5 (12)	100.0 (49)
5 Graduation	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	50.0 (17)	50.0 (17)	100.0 (34)
6 Postgrad & Above	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	9.1 (1)	9.1 (1)	81.8 (9)	100.0 (11)
Column total (n)	1	4	21	73	96	113	84	392

Note. Rows represent mothers' highest education (origin), and columns represent daughters' (destination). Cells show row percentages with counts in parentheses. Cells on the diagonal denote intergenerational immobility (persistence); cells to the right indicate upward mobility; and cells to the left indicate downward mobility.

Source: Primary survey data (2025).

Table 5.2 shows the corresponding transition matrix for non-Muslim women. The overall pattern is similar to that observed among Muslims: daughters of low-schooled mothers display considerable upward movement, and downward mobility is rare. Among non-Muslim mothers with little or no schooling, most daughters reach at least secondary or higher secondary levels. As with the Muslim sample, once mothers attain secondary or higher secondary education, daughters are highly concentrated in secondary and tertiary categories, indicating substantial intergenerational continuity at the upper end. Downward moves remain rare, and immobility at high levels coexists with further upward moves into postgraduate education.

Comparing Tables 5.1 and 5.2 qualitatively, the non-Muslim matrix appears slightly more “top-heavy,” particularly in the higher secondary and graduate rows, where daughters are more often located in the very top categories. However, the basic picture is similar across communities: starting from low parental schooling, a large majority of daughters experience upward movement, and for better-schooled mothers, the intergenerational pattern is one of consolidation at high levels rather than slippage downwards.

Table 5.2

Intergenerational Education Transition Matrix — Non-Muslim Women

Daughter → Mother ↓	0 No School	1 Lower Primary	2 Upper Primary	3 Secondary	4 Higher Secondary	5 Graduation	6 Postgrad+	Row total (n)
0 No Schooling	0.0 (0)	3.7 (1)	7.4 (2)	51.9 (14)	25.9 (7)	11.1 (3)	0.0 (0)	100.0 (27)
1 Lower Primary	0.0 (0)	0.0 (0)	3.8 (1)	50.0 (13)	15.4 (4)	15.4 (4)	15.4 (4)	100.0 (26)
2 Upper Primary	0.0 (0)	0.0 (0)	3.7 (1)	22.2 (6)	63.0 (17)	11.1 (3)	0.0 (0)	100.0 (27)
3 Secondary	0.0 (0)	0.0 (0)	0.0 (0)	5.8 (5)	24.4 (21)	43.0 (37)	26.7 (23)	100.0 (86)
4 Higher Secondary	0.0 (0)	0.0 (0)	0.0 (0)	4.5 (2)	4.5 (2)	36.4 (16)	54.5 (24)	100.0 (44)
5 Graduation	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	42.7 (38)	57.3 (51)	100.0 (89)
6 Postgrad & Above	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	7.7 (1)	53.8 (7)	38.5 (5)	100.0 (13)
Column total (n)	0	1	4	40	52	108	107	312

Note. Rows represent mothers’ highest education (origin), and columns represent daughters’ (destination). Cells show row percentages with counts in parentheses. Cells on the diagonal denote intergenerational immobility (persistence); cells to the right indicate upward mobility; and cells to the left indicate downward mobility.

Source: Primary survey data (2025).

The pooled transition matrix in Table 5.3 combines Muslim and non-Muslim women. It confirms that, in the sample as a whole, intergenerational moves are overwhelmingly upward. Among women whose mothers had no schooling or only primary education, roughly four out of five daughters reach at least secondary schooling, and a sizeable proportion progress into higher secondary and degree-level education. Downward movements from these low origin levels are negligible.

For mothers with upper primary or secondary education, daughters are predominantly located in the secondary, higher secondary, and graduate categories. The share of daughters in postgraduate education increases steadily as mothers' education rises, particularly from higher secondary upwards. At the same time, the diagonal entries in the upper rows become more pronounced, indicating that once mothers reach higher secondary or graduation, daughters are quite likely to remain at these high levels, with additional upward steps into postgraduate education rather than slippage downwards.

Taken together, the three matrices suggest that Kerala's educational expansion has generated substantial upward mobility for daughters from low-education backgrounds, with relatively similar patterns across Muslim and non-Muslim women. Almost no group experiences widespread downward mobility, and most origin categories exhibit a dominant upward flow towards secondary and tertiary education. Differences between religious groups exist, especially in the concentration of daughters at the very top, but they are not stark at this descriptive level and require formal testing.

Table 5.3*Intergenerational Education Transition Matrix — Overall Sample*

Daughter → Mother ↓	0 No School	1 Lower Primary	2 Upper Primary	3 Secondary	4 Higher Secondary	5 Graduation	6 Postgrad+	Row total (n)
0 No Schooling	1.2 (1)	6.1 (5)	11.0 (9)	43.9 (36)	24.4 (20)	9.8 (8)	3.7 (3)	100.0 (82)
1 Lower Primary	0.0 (0)	0.0 (0)	10.0 (10)	47.0 (47)	21.0 (21)	10.0 (10)	12.0 (12)	100.0 (100)
2 Upper Primary	0.0 (0)	0.0 (0)	7.6 (6)	24.1 (19)	49.4 (39)	11.4 (9)	7.6 (6)	100.0 (79)
3 Secondary	0.0 (0)	0.0 (0)	0.0 (0)	4.4 (9)	25.6 (52)	44.3 (90)	25.6 (52)	100.0 (203)
4 Higher Secondary	0.0 (0)	0.0 (0)	0.0 (0)	2.2 (2)	15.1 (14)	44.1 (41)	38.7 (36)	100.0 (93)
5 Graduation	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	44.7 (55)	55.3 (68)	100.0 (123)
6 Postgrad & Above	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	8.3 (2)	33.3 (8)	58.3 (14)	100.0 (24)
Column total (n)	1	5	25	113	148	221	191	704

Note. Rows represent mothers' highest education (origin), and columns represent daughters' (destination). Cells show row percentages with counts in parentheses. Cells on the diagonal denote intergenerational immobility (persistence); cells to the right indicate upward mobility; and cells to the left indicate downward mobility.

Source: Primary survey data (2025).

5.3.2 Statistical Tests of Association and Ordinal Educational Persistence

While the matrices describe absolute flows, statistical tests quantify the underlying relative mobility, or the strength of the association between educational origins and destinations. To formally assess whether mothers' and daughters' education is statistically associated within each group, chi-square tests of independence and linear-by-linear association tests were applied to each of the three 7×7 transition matrices (Table 5.4). Because the matrices contain several low-frequency cells—particularly at the extremes of the educational distribution—Monte Carlo exact *p* values were

reported in addition to asymptotic chi-square values. The use of these exact procedures is appropriate and methodologically sound for sparse contingency tables (Agresti, 2013).

As shown in Table 5.4, Pearson χ^2 tests confirmed a highly statistically significant association between mother's and daughter's education for Muslim women, $\chi^2 (36) = 243.73, p < .001$, non-Muslim women, $\chi^2 (30) = 221.26, p < .001$, and for the women as a whole in Kerala, $\chi^2 (36) = 450.56, p < .001$. As reported in Table 5.4, the linear-by-linear association tests, which specifically evaluate the presence of a monotonic ordinal trend, similarly produced strong evidence of an ordered relationship between maternal and daughter educational levels ($p < .001$). In other words, higher maternal education is systematically associated with higher daughter education in both Muslim and non-Muslim households. Taken together, these tests confirm that daughters' educational outcomes are not independent of their mothers' attainment; instead, they follow a patterned, ordered structure that reflects intergenerational transmission processes.

Table 5.4

Tests of Association Within 7×7 Transition Tables by Religious Group

Group	Test	$\chi^2 (df)$	Asymptotic p (2-sided)	Monte Carlo exact p (2-sided)
Muslim (n = 392)	Pearson χ^2	243.733 (36)	< .001	< .001
	Likelihood-ratio χ^2	258.478 (36)	< .001	< .001
	Fisher's exact (r×c)	233.230 (—)	—	< .001
	Linear-by-Linear χ^2	147.575 (1)	< .001	< .001
Non-Muslim (n = 312)	Pearson χ^2	221.261 (30)	< .001	< .001
	Likelihood-ratio χ^2	222.926 (30)	< .001	< .001
	Fisher's exact (r×c)	206.830 (—)	—	< .001
	Linear-by-Linear χ^2	135.875 (1)	< .001	< .001
Overall (n = 704)	Pearson χ^2	450.555 (36)	< .001	< .001
	Likelihood-ratio χ^2	474.545 (36)	< .001	< .001
	Fisher's exact (r×c)	445.244 (—)	—	< .001
	Linear-by-Linear χ^2	296.837 (1)	< .001	< .001

Note. The Pearson χ^2 test assesses the relationship's overall statistical significance (dependence), while the Linear-by-Linear Association χ^2 specifically tests for linear (monotonic) trends. A substantial proportion of cells in each transition matrix had expected frequencies below five, a common feature of large r×c educational-transition tables, especially when extreme schooling categories contain few respondents. Because sparse tables can bias asymptotic chi-square approximations, Monte Carlo exact p values (based on 100,000 sampled tables) were computed and reported alongside asymptotic values, ensuring more reliable inference.

Source: Primary survey data (2025).

To quantify the strength of ordinal association—that is, the extent to which higher maternal education is systematically linked to higher daughter education or the degree of relative persistence—Kendall’s tau-b and Goodman–Kruskal’s gamma were computed for each group (Table 5.5). Both measures are standard tools in the analysis of intergenerational mobility; larger positive values indicate stronger persistence (and hence lower relative mobility across the distribution).

Both measures revealed a strong, positive association across the entire sample ($\tau_b = .546, p < .001$; $\gamma = .671, p < .001$). These values are typically interpreted as indicating a strong positive ordinal association between mothers’ and daughters’ schooling: women with more educated mothers are much more likely to be highly educated themselves, and women from low-educated origins remain over-represented in the lower tail despite the observed upward mobility. In comparing the two religious groups, the ordinal association coefficients for non-Muslim women ($\tau_b = .529, p < .001$; $\gamma = .666, p < .001$) were marginally higher than those for Muslim women ($\tau_b = .518, p < .001$; $\gamma = .634, p < .001$). Since a higher coefficient indicates stronger persistence (i.e., lower relative mobility or lower fluidity), this suggests that the mother’s educational background is a slightly more powerful predictor of the daughter’s outcome among non-Muslims.

Substantively, these results indicate that while there is widespread upward mobility in absolute terms—as seen in the transition matrices—there is also a strong rank-ordering: daughters of more educated mothers are systematically more likely to occupy the upper levels of the educational distribution. Importantly, the strength of this intergenerational linkage appears broadly comparable across Muslim and non-Muslim households.

Table 5.5

Ordinal Association Between Mothers' and Daughters' Education (Kendall's τ -b and Goodman–Kruskal's Gamma)

Group	Kendall's tau-b	SE	z	p (asymptotic)	P (Monte Carlo)	Goodman–Kruskal Gamma	SE	z	p (asymptotic)	P (Monte Carlo)	n
Muslim	.518	.030	16.607	< .001	< .001	.634	.035	16.607	< .001	< .001	392
Non-Muslim	.529	.034	14.129	< .001	< .001	.666	.039	14.129	< .001	< .001	312
Overall	.546	.022	24.055	< .001	< .001	.671	.024	24.055	< .001	< .001	704

Note. Ordinal measures (Kendall's tau-b and Goodman–Kruskal Gamma) quantify the strength of the positive relationship between mother's and daughter's educational attainment, indicating persistence. Larger positive values denote stronger persistence (lower relative mobility). Asymptotic p -values are two-sided. Monte Carlo exact p -values are based on 100,000 sampled tables. All standard errors (SE) are asymptotic.

Source: Primary survey data (2025).

5.3.3 Conclusion

The transition matrices and associated statistics reveal a clear dual regime of intergenerational educational mobility in Kerala, with both commonalities and meaningful differences between Muslim and non-Muslim women. On the one hand, evidence demonstrates that daughters in both communities have experienced substantial absolute upward mobility relative to their mothers, especially from the lowest origin categories. Even when mothers had little or no schooling, most daughters have moved into secondary and higher levels. Downward mobility is virtually absent, indicating that educational gains achieved across generations are both substantial and stable. This pattern reflects the broad success of Kerala's educational expansion in lifting women's educational attainment across religious groups.

On the other hand, the formal tests of association and the ordinal measures of persistence make it equally clear that maternal education continues to exert a strong

influence on daughters' schooling in both communities. Ordinal association coefficients indicate that the strength of this persistence is high for both Muslims and non-Muslims, though slightly more pronounced among the latter. This subtle difference aligns with the qualitative patterns observed in the matrices: while Muslim women have made remarkable upward strides from historically low baselines, non-Muslim women—particularly those from already educated households—display a stronger tendency to occupy and retain the highest educational positions.

Overall, this descriptive foundation points to an educational regime that is simultaneously inclusive and stratified: broad-based upward mobility coexists with persistent intergenerational dependence and a modest, but meaningful, advantage for non-Muslim women at the elite levels of schooling. These findings provide a strong descriptive foundation for the analyses that follow, which move from categorical transition patterns to continuous measures of schooling and then to multivariate models. The next sections, therefore, build on this foundation by computing summary mobility indices and estimating multivariate models of schooling transmission, allowing a more precise decomposition of the processes driving intergenerational mobility across Kerala's religious communities.

5.4 The Composition of Absolute Intergenerational Educational Mobility: A Categorical Comparison

This section moves from the detailed, cell-by-cell mapping of the transition matrices to a summary comparison of absolute mobility across religious groups. To summarise these patterns, the 7×7 transition matrices were collapsed into a three-category measure of intergenerational movement: downward mobility (destinations below origin), immobility (same level), and upward mobility (destinations above origin). This trichotomous classification allows a concise comparison of absolute mobility outcomes across Muslim and non-Muslim women before accounting for any covariates that shape these movements. This comparison provides an empirical bridge between the descriptive transition patterns and the subsequent multivariate analysis of mobility determinants.

Table 5.6 reports the proportion of each mobility type within religious groups, and Figure 5.1 visualises these differences. In both communities, upward movement is the dominant outcome, reflecting the widespread educational expansion documented earlier. However, Muslims exhibit a slightly larger share of upward movements and a marginally lower prevalence of both immobility and downward movement compared to their non-Muslim counterparts. When the upward and non-upward categories are aggregated, the Muslim advantage remains evident, with nearly nine out of ten Muslim daughters experiencing intergenerational educational improvement compared with roughly four out of five non-Muslim daughters. Downward movement is extremely infrequent in both groups but appears somewhat more common among non-Muslims. The minuscule proportion of Muslim women who experienced downward movement was less than one-third the share observed among non-Muslim women. Furthermore, non-Muslim women were slightly more likely to remain in the same educational category as their mothers (immobility), accounting for about one-sixth of the non-Muslim sample, compared to roughly one-eighth of the Muslim sample. Taken together, these patterns suggest that Muslim women demonstrate a marginally more favourable absolute mobility profile despite starting from a lower average maternal education.

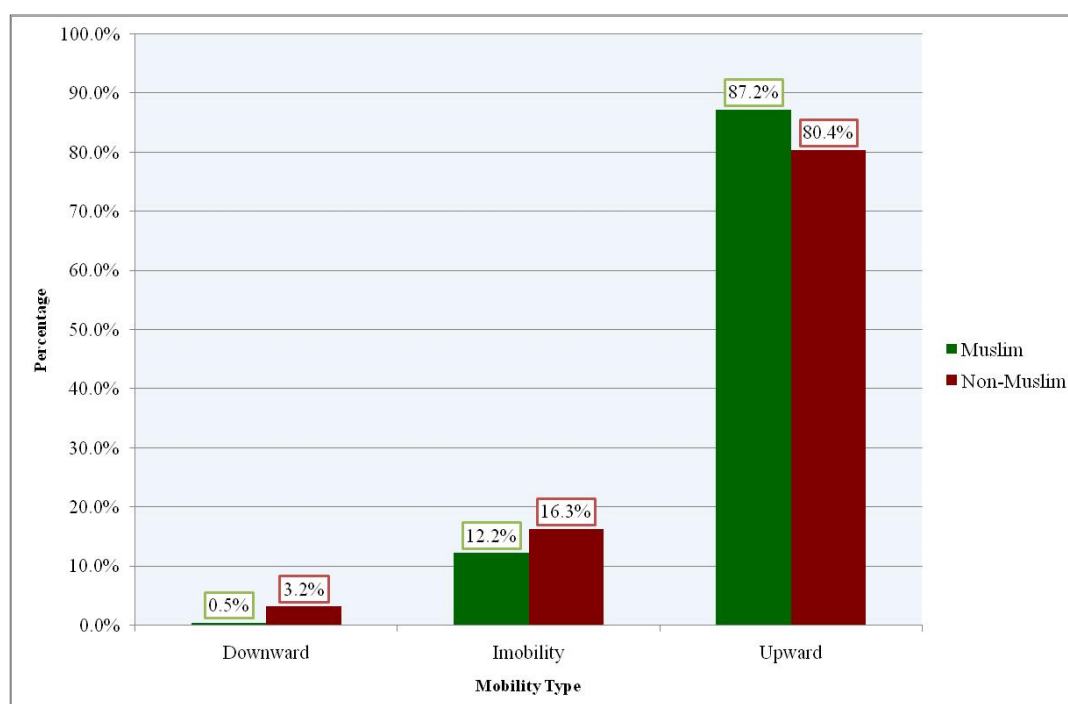
A chi-square test of independence confirmed that the distribution of mobility types differs significantly by religious group, $\chi^2(2, N = 704) = 10.43, p = .005$. The associated effect size was small (*Cramer's V* = .12), indicating that although the association is statistically significant, the substantive magnitude of the group difference is modest. The pattern of results suggests that Muslim women are somewhat more likely to experience intergenerational upward mobility and less likely to remain immobile or move downward compared with non-Muslims. The test therefore confirms that the groups are not identical in their mobility composition, but the differences are not large enough to imply a high degree of structural divergence.

Table 5.6*Composition of Intergenerational Educational Mobility by Religious Group*

Sl. No.	Mobility type	Muslim n (%)	Non-Muslim n (%)	Total	Chi-square (χ^2) Test Results
1	Downward	2 (0.5%)	10 (3.2%)	12 (1.7%)	$\chi^2 = 10.433$ $df = 2$
2	Immobility	48 (12.2%)	51 (16.3%)	99 (14.1%)	$p = .005$ $N = 704$
3	Upward	342 (87.2%)	251 (80.4%)	593 (84.2%)	Cramer's $V = .122$ $p = .005$
	Total	392 (100%)	312 (100%)	704 (100.0%)	

Note. Mobility types are derived from the position of daughters' schooling outcomes relative to their mothers' positions in the 7×7 transition matrix: downward (below diagonal), immobility (on diagonal), upward (above diagonal).

Source: Primary survey data (2025).

Figure 5.1*Distribution of Intergenerational Educational Mobility by Religious Group*

Note. Bars depict the percentage distribution of downward, immobile, and upward movements within each religious group, derived from the 7×7 transition matrices.

Source: Primary survey data (2025).

In conclusion, the comparison of mobility compositions reveals that Muslim women display a more favourable absolute mobility profile, with a larger share experiencing upward movement and fewer showing immobility or downward shifts. Non-Muslim women, despite having higher maternal educational origins, exhibit slightly higher rates of immobility and downward mobility combined. However, the small effect size suggests that the observed differences are modest and largely compositional, shaped by differences in starting positions rather than entirely separate mobility regimes. The next sections will quantify and compare educational mobility employing composite mobility indices.

5.5 Summary Indices of Intergenerational Educational Mobility

The analysis of the transition matrices in the preceding sections provided a rich, descriptive mapping of movement across educational categories. This section supplements the transition matrices and mobility-type distributions by presenting summary indices that quantify the *magnitude* and *direction* of intergenerational educational movement. Unlike the categorical mobility types, which describe whether a daughter moved up or down relative to her mother, these indices incorporate the *distance* moved across the seven-step educational hierarchy. This section presents a widely used distance-based indicator—the Bartholomew Index—with direction-sensitive measures that separately capture upward and downward movements. Together, these indices offer an integrated perspective on how far daughters move from their mothers' educational position across religious groups.

5.5.1 Bartholomew Index of Intergenerational Educational Mobility

The Bartholomew Index (B) is employed to summarize the overall extent of educational movement, capturing both the frequency and the magnitude (or "step distance") of intergenerational shifts. It provides a normalised measure of the average number of educational steps daughters have moved from their mothers' level, expressed as a proportion of the maximum possible move, ranging from 0 (complete immobility) to 1 (maximum mobility). The index complements the transition matrices by summarising total movement in a single number that reflects both frequency and magnitude.

Educational attainment was recorded on a seven-point ordinal scale ($k=7$ categories: 0 = No schooling to 6 = Post-Graduation & Above). For each religious group, the Bartholomew Index (B) was calculated from the 7×7 mother–daughter transition matrix as:

$$B = \frac{1}{N(k-1)} \sum_{i=0}^{k-1} \sum_{j=0}^{k-1} C_{ij} |j-i| \quad \dots(5.1)$$

where:

C_{ij} denotes the number of mothers–daughter pairs in origin level i and destination level j ,

$|j-i|$ is the absolute educational step distance moved.

N is the total group sample size (*i.e.*, $N = \sum_i \sum_j C_{ij}$).

$k-1$ ($7-1=6$) is the maximum possible number of “educational steps” between categories, serving as a normalizing constant.

The index B represents the average number of steps daughters have moved from their mothers' educational level, expressed as a proportion of the maximum possible move. It ranges from 0 (complete immobility, where all daughters remain in their mothers' category) to 1 (complete mobility, where every daughter is the maximum possible distance from her mother).

Uncertainty was quantified using a row-wise multinomial bootstrap that preserves the observed row totals. Specifically, within each mother's education row (i), cell counts (C_{ij}) were resampled from a multinomial distribution using the observed row probabilities. The indices were recomputed for each replicate, and 95% percentile confidence intervals were obtained.

For interpretive context, we also report directional shares of upward, immobility (same), and downward movement, defined as

$$Upward = \frac{\sum_{i < j} C_{ij}}{N}, \quad Same = \frac{\sum_i C_{ii}}{N}, \quad Downward = \frac{\sum_{i > j} C_{ij}}{N}, \quad \dots(5.2)$$

Table 5.7 presents the estimated values of the index and the associated bootstrap confidence intervals, together with the proportions of upward, immobile, and downward transitions for descriptive reference.

Table 5.7

Bartholomew Index of Intergenerational Educational Mobility and Directional Shares by Religion

Sl No.	Group	Bartholomew (B) (95 % CI)	Upward Mobility	Immobility	Downward Mobility
1	Muslim (N = 392)	0.325 [0.304, 0.346]	0.872	0.122	0.005
2	Non-Muslim (N = 312)	0.269 [0.248, 0.290]	0.804	0.163	0.032
	Total (N = 704)	0.300 [0.281, 0.319]	0.842	0.141	0.017

Note. Indices computed from 7×7 mother–daughter transition matrices (codes 0–6). “Distance” counts category steps and is normalised by $k-1=6$. Confidence intervals are percentile row-wise multinomial bootstrap with fixed row totals (10,000 replications).

Source: Primary survey data (2025).

As presented in Table 5.7, the Bartholomew index values confirm substantial intergenerational educational mobility in both communities. The analysis reveals substantially different mobility patterns between religious groups. Muslim women demonstrated significantly higher overall mobility compared to non-Muslim women, as evidenced by their notably higher Bartholomew Index value. The bootstrap confidence intervals for both groups do not overlap, indicating that this difference is statistically significant. This outcome is consistent with the lower educational origins observed for the Muslim cohort in the transition matrices, demonstrating a highly effective and large-scale upward flow that results in a greater average distance moved. The directional shares reinforce this interpretation. Upward movement constitutes the great majority of transitions in both groups, but it is more common among Muslims, while immobility and downward movement—although low—are more pronounced among non-Muslims. This implies that Muslim women have experienced more extensive upward shifts on average, even though both groups show high levels of upward change.

Overall, the index highlights that Muslim women—starting from lower maternal baselines—exhibit greater absolute mobility in terms of educational distance travelled, whereas non-Muslim women display more stability and slightly more downward movement within the distribution.

5.5.2 Direction-Sensitive Intergenerational Mobility Indices

While the Bartholomew Index effectively summarizes total movement, it treats upward and downward movements symmetrically. Because upward and downward movements have different social meanings, this section introduces direction-sensitive measures of educational mobility that separately quantify upward and downward intergenerational movements and their net balance. These measures align with the conceptual approach proposed by Fields and Ok (1999), adapted here for ordered educational categories, to quantify educational advancement and regression explicitly.

Using each group's 7×7 origin–destination count matrix C_{ij} (mother's level i , daughter's level j), the total sample size N , and $k=7$ education categories, the following indices were computed:

Upward Step Index (M^+):

$$M^+ = \frac{\sum_j \sum_i C_{ij} \max(j - i, 0)}{N(k - 1)} \quad \dots(5.3)$$

Downward Step Index (M^-):

$$M^- = \frac{\sum_j \sum_i C_{ij} \max(i - j, 0)}{N(k - 1)} \quad \dots(5.4)$$

Net Step Index ($M^+ - M^-$):

$$M^+ - M^- = \frac{\sum_j \sum_i C_{ij} (j - i)}{N(k - 1)} \quad \dots(5.5)$$

Upward Proportion of Step-Distance:

$$\frac{M^+}{M^+ + M^-} \dots(5.6)$$

Each index ranges from 0 to 1 (or -1 to 1 for the net measure). Bootstrap 95% confidence intervals (5,000 replications) were obtained.

The direction-sensitive indices (Table 5.8) show that across both religious groups, upward movements overwhelmingly dominate downward movements, with the upward component accounting for nearly all of the observed step-distance. Muslim women display a larger upward distance on average, reinforcing the finding from the Bartholomew Index that the average size of the educational step for Muslim daughters is considerably larger. The downward-distance component is extremely small for both groups but slightly more pronounced among non-Muslims, contributing to a lower net mobility score.

The net mobility measure mirrors these patterns: both groups experience strong upward movement, but Muslims show a greater net shift, consistent with their broader movement from low maternal origins into higher schooling levels.

The upward fraction—which expresses upward movement as a share of all step-distance—is close to unity for both groups but remains marginally higher for Muslims. This suggests that when movement does occur in the Muslim sample, it is almost exclusively upward, whereas non-Muslim women experience a small but noticeable number of downward steps.

Collectively, these results suggest that Muslim daughters have experienced greater upward educational progression on average. At the same time, non-Muslims display slightly more retention at higher origin levels and a slightly greater risk of downward steps—although the magnitude of downward movement remains minimal.

Table 5.8

Directional Intergenerational Educational Mobility Indices (Point Estimates and 95% Confidence Intervals) by Religious Group

Sl. No.	Measure	Muslim (<i>N</i> = 392)	Non-Muslim (<i>N</i> = 312)	Total (<i>N</i> = 704)
1	Upward distance (M^+)	0.323 [0.302, 0.344]	0.263 [0.242, 0.285]	0.297 [0.276, 0.317]
2	Downward distance (M^-)	0.001 [0.000, 0.003]	0.006 [0.003, 0.010]	0.003 [0.001, 0.006]
3	Net distance ($M^+ - M^-$)	0.322 [0.301, 0.344]	0.257 [0.235, 0.280]	0.293 [0.272, 0.314]
4	Upward fraction ($M^+/(M^+ + M^-)$)	0.996 [0.989, 1.000]	0.978 [0.963, 0.991]	0.990 [0.980, 0.997]

Note. Indices computed from 7×7 mother–daughter transition matrices (codes 0–6). M^+ and M^- denote the normalized average step distance in the upward and downward directions, respectively, where $M^+ + M^-$ equals the Bartholomew Index (*B*). Values in square brackets are the 95% confidence intervals based on percentile row-wise multinomial bootstrap with fixed row totals (5,000 resamples).

Source: Primary survey data (2025).

5.5.3 Conclusion

The summary indices confirm the narrative emerging from the transition matrices. The intergenerational educational movement is strong for women in Kerala across both religious groups, with upward progression dominating mobility profiles. Muslim women exhibit higher overall mobility and larger upward step distances, reflecting their substantial generational gains from lower starting points. Non-Muslim women, while also experiencing substantial upward mobility, show a tendency toward greater immobility at already high levels and marginally higher (though still very low) downward movements.

These indices provide a quantitative foundation for understanding mobility magnitudes before examining the distribution of step differences. The next section builds on this foundation by analysing the distribution of the intergenerational step-difference (daughter minus mother) across religious groups, providing a more

granular view of mobility patterns across the sample and within each religious group.

5.6 Distribution of Intergenerational Educational Step-Difference (Daughter – Mother) by Religion

The preceding sections examined mobility through transition matrices and summary indices that captured the overall magnitude of educational movement across generations. This section deepens that understanding by analysing the distribution of the intergenerational Educational Step-Difference (ESD). The ESD variable is defined as the difference between the daughter's and the mother's education codes ($ESD = \text{Education}_{\text{daughter}} - \text{Education}_{\text{mother}}$) on the common 0–6 scale used in this study, yielding an ordered score that ranges from -6 (maximum downward mobility) to +6 (maximum upward mobility). This ordered ESD score captures both direction (sign) and magnitude (number of educational steps) of mobility, with negative values indicating downward mobility, zero indicating immobility, and positive values indicating upward mobility across generations. While the Bartholomew and directional indices provide a powerful summary of the average mobility experience, they can obscure variation within the broad "upwardly mobile" category. A two-step jump from no schooling to upper primary represents a fundamental shift, but is qualitatively different from a four-step jump to graduation. The ESD distribution reveals how mobility is dispersed within groups and enables formal group comparisons of the ordered mobility outcomes experienced by Muslim and non-Muslim women.

Table 5.9 presents the frequency and percentage distribution of ESD scores by religious group, along with summary statistics. For both Muslim and non-Muslim women, the bulk of observations lie in the positive range, confirming that upward mobility is the modal experience in both communities. The zero category still accounts for a non-trivial share of each group, indicating that a subset of daughters replicate their mothers' educational level without upward or downward movement. However, notable differences emerged at the higher magnitudes of mobility. A larger proportion of Muslim women achieved substantial upward leaps of three, four, and

five or more steps. Conversely, downward mobility, though rare, was more prevalent among non-Muslim women. The central tendency measures reflect this pattern: The median ESD for Muslim women is double that of non-Muslim women, indicating that the typical Muslim woman achieved two steps of educational advancement compared to one step for the typical non-Muslim woman. These patterns are consistent with the earlier mobility indices, suggesting that Muslim women exhibit a right-shifted step-difference distribution rather than mobility concentrated in a few extreme cases.

Table 5.9

Distribution of Intergenerational Educational Step-Difference (Daughter – Mother) by Religion

Sl. No.	ESD (Steps)	Mobility Type & Steps	Muslim <i>n</i> (%)	Non-Muslim <i>n</i> (%)	Total <i>n</i> (%)
1	–2	Downward Mobility (2 steps)	1 (0.3)	1 (0.3)	2 (0.3)
2	–1	Downward Mobility (1 step)	1 (0.3)	9 (2.9)	10 (1.4)
3	0	No Mobility	48 (12.2)	51 (16.3)	99 (14.1)
4	+1	Upward Mobility (1 step)	99 (25.3)	96 (30.8)	195 (27.7)
5	+2	Upward Mobility (2 steps)	128 (32.7)	93 (29.8)	221 (31.4)
6	+3	Upward Mobility (3 steps)	74 (18.9)	44 (14.1)	118 (16.8)
7	+4	Upward Mobility (4 steps)	25 (6.4)	11 (3.5)	36 (5.1)
8	+5	Upward Mobility (5 steps)	13 (3.3)	7 (2.2)	20 (2.8)
9	+6	Upward Mobility (6 steps)	3 (0.8)	0 (0.0)	3 (0.4)
Total			392 (100)	312 (100)	704 (100)
Mean (SD)			1.9 (1.3)	1.5 (1.3)	1.8 (1.3)
Median			2.0	1.0	2.0

Note. ESD = Daughter's education code – Mother's education code (0–6 scale). Percentages are column-wise within each religious group.

Source: Primary survey data (2025).

To formally assess whether the two distributions differ, a Mann–Whitney U test was conducted because ESD is an ordinal variable (Table 5.10). The test indicated that Muslim women had significantly higher ESD values than non-Muslim women, $U = 51,193$, $Z = -3.83$, $p < .001$. The associated effect sizes were

small in magnitude (Cliff's $\delta = 0.16$; $r = .14$). In substantive terms, Cliff's δ implies that, net of ties, a randomly selected Muslim woman is more likely than a randomly selected non-Muslim woman to have experienced a higher ESD score by about 16 percentage points. The result, also supported by a non-parametric r of .14, corroborates the earlier findings from the mobility indices by showing that the higher averages among Muslim women reflect a generalized right-shift of the entire mobility distribution rather than being driven only by a few extreme cases.

Table 5.10

Mann–Whitney U Test Comparing ESD by Religion (Muslim vs. Non-Muslim)

Sl. No.	Statistic	Muslim	Non-Muslim	Value
1	n	392	312	704 (total)
2	Mean rank	377.91	320.58	—
3	Mann–Whitney U	—	—	51,193
4	Standardised Z	—	—	−3.83
5	p (two-tailed)	—	—	< .001
6	Cliff's δ	—	—	0.163
7	Non-parametric r	—	—	.144

Note. Effect sizes were computed as follows: for the Mann–Whitney test, $r = \frac{|Z|}{\sqrt{n}}$, where Z is the standardized test statistic from the Mann–Whitney U test, and n is the total sample size. Cliff's δ is defined as $\delta = \Pr(X > Y) - \Pr(X < Y)$ (ties contribute 0), where X and Y are ESD values from the two groups. Equivalently, δ can be computed from the Mann–Whitney statistic for the focal group as $\delta = \frac{2U_1}{n_1 n_2} - 1$, where $U_1 = R_1 - \frac{n_1(n_1+1)}{2}$, R_1 is the sum of ranks in group 1, and n_1 and n_2 are group sizes.

Source: Primary survey data (2025).

A chi-square test of independence was also conducted to examine whether the overall distribution of the nine ESD categories differed by religion (Table 5.11). The contingency table was sparse in several cells (27.8% with expected counts < 5), hence the Monte-Carlo two-sided test was used for inference. The test was statistically significant, $\chi^2(8, N = 704) = 21.13$, Monte-Carlo $p = .004$, with as small effect size (Cramer's $V = .17$). This result indicates that the pattern of step-differences is not identical across religious groups:

Muslim women are relatively more represented in the mid-range positive categories (for example, two- and three-step gains), whereas non-Muslim women are slightly more concentrated in the zero and small-step categories, along with marginally higher downward moves.

Table 5.11

Chi-Square Test of ESD Distribution (9 Categories) by Religion, with Effect Size

Test	χ^2	<i>df</i>	<i>N</i>	<i>p</i> (asympt.)	<i>p</i> (Monte Carlo, two-sided)	Effect Size
Pearson χ^2	21.13	8	704	.007	.004	Cramer's <i>V</i> = .17

Note. Monte Carlo based on 100,000 sampled tables (seed = 2,000,000). Several cells (27.8%) had expected counts < 5.

Source: Primary survey data (2025).

The ESD distribution and associated tests confirm and refine the patterns observed in the transition matrices and mobility indices. For both Muslim and non-Muslim women in Kerala, intergenerational educational mobility is overwhelmingly upward, with downward moves occurring only at the margins. However, Muslim women display a modest but statistically significant shift towards larger step gains: their typical mobility experience involves a higher number of educational steps relative to their mothers, and they are more likely to occupy the mid-range and higher positive categories of the step-difference distribution. Non-Muslim women, while also highly mobile, show relatively more one-step advances, more exact replication of maternal education, and slightly more downward movements. These findings suggest that, against a backdrop of broad educational expansion, Muslim women are catching up through more intense upward movements from lower baselines, whereas non-Muslim women tend to consolidate already favorable positions with smaller but still positive gains.

5.7 Intensity of Intergenerational Educational Mobility: A Continuous Measure of Schooling Gains

The preceding sections analysed intergenerational educational mobility using categorical and ordinal measures, capturing how daughters moved across broad

levels of attainment relative to their mothers. Those approaches cannot fully capture the *magnitude* of movement experienced across generations. To address this limitation, the present section adopts a ratio-scale approach by examining the Intergenerational Educational Schooling Gap (IESG). The IESG is measured as the absolute difference in the total years of formal schooling between the daughter and her mother. This continuous measure, denoted here as mobility intensity (Δ years), quantifies the *magnitude* of educational change, translating mobility into the exact number of years of schooling gained or lost across generations. This methodological shift from educational *levels* (e.g., secondary to higher secondary) to the magnitude of *time investment* (years) provides a direct, continuous metric of the average educational gain. This approach allows for the use of more sensitive and powerful parametric assessment of the average educational gain, providing a robust foundation for comparing the intergenerational progress of Muslim and non-Muslim women.

Table 5.12 presents the descriptive statistics for maternal schooling, daughter's schooling, and the derived mobility intensity (IESG) by religious group. Daughters' schooling is substantially higher than that of mothers in both communities, indicating a strong upward educational movement. However, the magnitude of this improvement differs by religion. As in earlier sections, non-Muslim mothers appear, on average, more educated than Muslim mothers, and this relative advantage is also visible in daughters' own schooling. However, when examining the IESG, a different pattern emerges: Muslim women recorded an average gain exceeding 6 years of schooling, while non-Muslim women recorded an average gain of nearly 5 years. This difference in intergenerational gain suggests that although the Muslim group started from a lower baseline, they achieved a significantly steeper upward movement in terms of years of education acquired by their non-Muslim counterparts.

Table 5.12

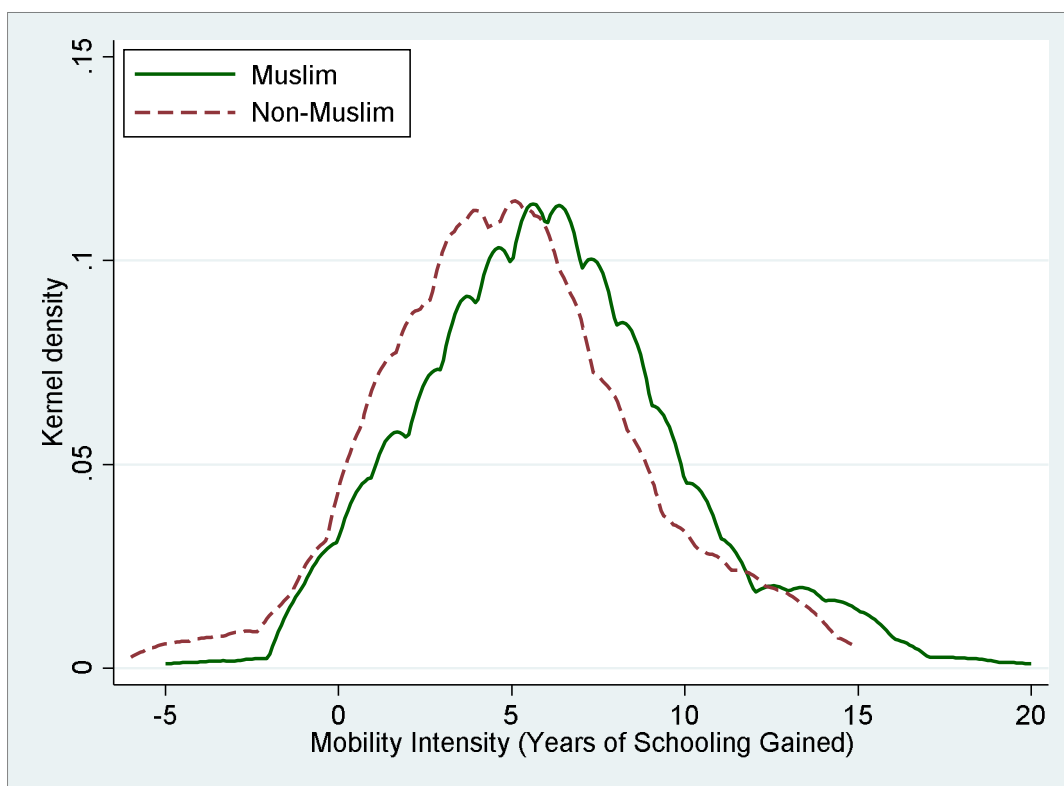
Descriptive Statistics of Years of Schooling and Schooling Gap by Generation and Religion

Religious Group	Statistic	Mothers' Schooling (Years)	Daughters' Schooling (Years)	Mobility Intensity (Δ Years)
Muslim (<i>n</i> = 392)	Mean	7.61	13.74	6.13
	SD	4.80	4.04	3.82
	Skewness	0.00	-0.28	0.46
	Kurtosis	-0.85	-0.28	0.45
Non-Muslim (<i>n</i> = 312)	Mean	10.29	15.22	4.94
	SD	4.97	3.57	3.66
	Skewness	-0.57	-0.52	0.16
	Kurtosis	-0.43	-0.18	0.27
Total (<i>n</i> = 704)	Mean	8.80	14.40	5.60
	SD	5.05	3.91	3.80
	Skewness	-0.21	-0.41	0.34
	Kurtosis	-0.85	-0.24	0.45

Note. Mobility Intensity = Daughter's years of schooling – Mother's years of schooling. Positive values indicate upward educational mobility.

Source: Primary survey data (2025).

To visualize the distributional patterns of mobility intensity, Figure 5.2 presents a kernel density plot comparing the IESG across religious groups. The curve representing Muslim women is shifted noticeably to the right relative to that of non-Muslim women, indicating higher typical intergenerational gains in schooling among Muslims. The Muslim distribution also appears somewhat more spread out, consistent with greater variability in mobility intensity from relatively low maternal baselines. By contrast, the non-Muslim density is more concentrated around moderate positive values, reflecting smaller, but still clearly upward, average gains from a higher starting point. Both groups display tapering upper tails, suggesting that extremely large upward movements are uncommon, though Muslim women show a slightly thicker upper tail, consistent with more frequent multi-year advances.

Figure 5.2*Kernel Density Plot of Mobility Intensity by Religion*

Source: Primary survey data (2025).

Paired-samples t tests were used to assess whether daughters' average years of schooling exceeded those of their mothers within each religious group. As shown in Table 5.13, paired-samples t -tests confirmed that the upward mobility observed in the IESG was statistically significant within both groups. The average mobility gain for Muslim women was highly significant, $t(391) = 31.74, p < .001$, representing a very large effect size (*Cohen's d* ≈ 1.60). Similarly, non-Muslim women also demonstrated a highly significant average gain, $t(311) = 23.80, p < .001$, associated with a large effect (*Cohen's d* ≈ 1.35). These results confirm that both groups experienced massive, statistically robust intergenerational uplift in years of schooling.

Although the average gap is larger among Muslim women than among non-Muslim women, both groups exhibit sizeable within-family advances that are far

from trivial. These findings corroborate the earlier evidence from transition matrices and step-difference distributions, confirming that Kerala's educational expansion has translated into pronounced intergenerational gains across religious lines.

Table 5.13

Paired-Samples t Tests Comparing Daughters' and Mothers' Years of Schooling

Sl. No.	Religious Group	Mean Gap (Years)	SD of Gap	95% CI for Mean Gap	t	df	p	Cohen's d
1	Muslim	6.13	3.82	[5.75, 6.51]	31.74	391	< .001	1.60
2	Non-Muslim	4.94	3.66	[4.53, 5.34]	23.80	311	< .001	1.35
	Total	5.60	3.80	[5.32, 5.88]	39.13	703	< .001	1.47

Note. Paired-samples tests evaluate whether the mean gap (daughter – mother) differs from zero within each religion. A positive and statistically significant mean difference indicates significant upward educational mobility. Cohen's d measures the effect size.

Source: Primary survey data (2025).

Independent-samples tests were used to compare schooling levels and mobility intensity between Muslims and non-Muslims (Table 5.14). Levene's test indicated that the equal variances assumption was tenable for mothers' schooling and the mobility intensity, but not for daughters' schooling; accordingly, Welch's t was used for the latter. Non-Muslim women reported significantly higher maternal educational levels ($M = 10.29$, $SD = 4.97$) compared to Muslim women, $t(702) = -7.22$, $p < .001$, with a medium-to-large effect size, $d \approx -0.55$, suggesting that Muslim women began their intergenerational journey from a lower baseline of educational attainment. A similar pattern was observed for daughters: Muslim women themselves reported significantly fewer years of schooling than non-Muslim women, Welch's $t(694.30) = -5.15$, $p < .001$. This difference was associated with a small to medium effect size ($d \approx -0.39$).

However, when the mobility intensity (daughter's years – mother's years) was compared, the direction reversed. Muslim women showed a significantly larger gain than non-Muslim women, $t(702) = 4.19$, $p < .001$, Cohen's $d \approx 0.32$, indicating a small but meaningful advantage for Muslims in the *magnitude* of upward mobility. This means that, although Muslim women and their mothers are at a lower absolute

level of schooling, the *distance moved across generations* is significantly greater for Muslims. This result is fully consistent with the transition matrices and the Bartholomew/directional indices reported earlier in this chapter: non-Muslim women are located higher in the educational hierarchy, but Muslim women are experiencing steeper intergenerational mobility from a lower base.

Table 5.14

*Independent-Samples *t* Tests Comparing Schooling Levels and Mobility Intensity Across Religious Groups (Muslim vs. Non-Muslim)*

Sl. No.	Outcome variable	Levene's test for equality of variances	<i>t</i>	<i>df</i>	<i>p</i> (2-tailed)	Cohen's <i>d</i>
1	Mothers' schooling (years)	$F(1,702) = 0.28, p = .595$	-7.22 ^a	702	< .001	-0.55
2	Daughters' schooling (years)	$F(1,702) = 9.21, p = .002$	-5.15	694.30	< .001	-0.39
3	Mobility Intensity (Δ years)	$F(1,702) = 0.80, p = .372$	4.19	702	< .001	0.32

Note. ^aWelch's *t* with Satterthwaite-adjusted *df* used for daughters' schooling because Levene's test indicated heteroskedasticity ($p < .05$). For mothers' schooling and the schooling gap, the equal-variances assumption was tenable, and the standard independent-samples *t* test was used. Effect sizes were computed as $d = t \times \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}$ with $n_1=392$ (Muslim) and $n_2 = 312$ (Non-Muslim). The sign of *d* reflects direction (Muslim – Non-Muslim): negative values indicate lower means among Muslim women; positive values indicate higher means among Muslim women. Cohen's *d* interpretation: small effect $|d| \approx 0.20$, medium effect $|d| \approx 0.50$, large effect $|d| \approx 0.80$.

Source: Primary survey data (2025).

The continuous analysis of years of schooling provides a clear, quantitative picture of mobility intensity across religious groups. In both Muslim and non-Muslim communities, daughters have, on average, gained several additional years of schooling relative to their mothers, with very large within-family effect sizes signaling substantial upward mobility. Yet the pattern is asymmetric across groups. Non-Muslim women and their mothers occupy higher absolute positions in the educational hierarchy, while Muslim women exhibit greater mobility intensity, closing a larger number of schooling years between generations.

In other words, Muslim women are climbing further from a lower starting point, whereas non-Muslim women are consolidating already favorable positions with somewhat smaller, but still positive, gains. This combination of lower absolute attainment for Muslims but steeper intergenerational gains underscore the need to move beyond descriptive comparisons and formally model the intergenerational transmission of schooling. These findings naturally motivate the next section, which employs multivariate regression models to examine the determinants of daughters' schooling and the extent to which maternal education and religious identity predict intergenerational educational persistence.

5.8 Intergenerational Educational Persistence: Regression Evidence

5.8.1 Introduction

This section presents the analysis of intergenerational educational persistence, focusing on the causal relationship between a mother's years of schooling and her daughter's final educational attainment. The objective is twofold: first, to estimate the overall intergenerational educational persistence in Kerala, and second, to conduct a rigorous comparative analysis by determining if the mechanism of persistence is different for Muslim women after controlling for crucial socioeconomic and cohort factors. Rather than focusing on simple differences in means, the analysis estimates an intergenerational schooling regression with daughters' years of education as the dependent variable and mothers' schooling as the principal explanatory variable, along with a Muslim dummy and interaction terms. This framework allows the strength and shape of the mother–daughter association to be interpreted as an indicator of intergenerational persistence in schooling.

We employ an Ordinary Least Squares (OLS) regression framework and the regression models progressively incorporate religion, interaction terms, and additional covariates to assess: (a) how much of daughters' attainment is statistically “explained” by mothers' schooling; (b) whether this relationship is linear or non-linear; and (c) whether the transmission mechanism differs systematically between

Muslims and non-Muslims once fathers' schooling, cohort, income, location, and barriers are taken into account.

5.8.2 Model Specification and Variable Description

The empirical model is specified as a full OLS regression, where the dependent variable is the Daughter's Years of Schooling (DS_i). The model is designed to capture the intergenerational link, non-linearities, and the effect of the key religious variable while controlling for exogenous determinants of attainment.

The most general model estimated is:

$$\begin{aligned} DS_i = & \beta_0 + \beta_1 M_{c,i} + \beta_2 M_{c,i}^2 + \beta_3 M_{c,i}^3 \\ & + \beta_4 R_i + \beta_5 (M_{c,i} \times R_i) + \beta_6 (M_{c,i}^2 \times R_i) + \beta_7 F_i \\ & + \beta_8 A_{c,i} + \beta_9 A_{c,i}^2 + \beta_{10} \ln(I)_i + \beta_{11} L_i^r + \beta_{12} L_i^s \\ & + \beta_{13} B_i + \varepsilon_i \end{aligned} \quad \dots(5.6)$$

where:

DS_i = daughter i's years of completed schooling.

$M_{c,i}$ = mother's years of schooling for daughter i, mean-centred; $M_{c,i}^2$, $M_{c,i}^3$ are its polynomial terms.

R_i = binary indicator for religion (1 = Muslim, 0 = otherwise).

F_i = father's years of schooling.

$A_{c,i}$ = respondent's age (years), mean-centred; $A_{c,i}^2$ is its square.

$\ln(I)_i$ = natural logarithm of household income.

L_i^r , L_i^s = Dummy variables for rural and semi-urban residence (urban = reference)

B_i = binary indicator for facing educational barriers (1 = reports barrier(s), 0 = none).

ε = error term.

Three nested specifications are estimated:

- **Model 1 (baseline):** a simple linear intergenerational regression with daughters' years of schooling regressed on mothers' schooling only.
- **Model 2 (religion interaction):** adds the Religion dummy and the interaction between mothers' schooling and Religion, allowing the linear gradient to differ by religion.
- **Model 3 (full polynomial and controls):** replaces the linear mother term with the centred polynomial and religion interactions, and adds father's schooling, age, and its square, log income, location, and barrier variables.

The categorical regressors—religion and location indicators and barriers—are described in Table 5.15. Muslims are compared to non-Muslims, rural and semi-urban residents to urban/other respondents, and those reporting barriers to those reporting none. Rural and semi-urban dummies enter the regressions jointly so that the urban/other group forms the common reference category. The Muslim dummy is also used in interaction with centred mothers' schooling to capture group differences in the schooling gradient.

Table 5.15

Description of Categorical Regressors Included in the Model

Variable name	Description/coding	Reference (base) category
Religion (Muslim = 1)	1 = respondent belongs to Muslim community; 0 = otherwise	Non-Muslim
Rural (= 1)	1 = household located in rural / panchayat area; 0 = otherwise	Urban / other
Semi-urban (= 1)	1 = household located in semi-urban / small-town area; 0 = otherwise	Urban / other
Faced barrier to schooling (= 1)	1 = respondent reported any economic/social / marriage-related barrier to schooling; 0 = no barrier reported	No barrier

Note. “Rural” and “Semi-urban” enter the regression together; therefore, “urban/other location” is the omitted group. “Muslim (=1)” is also used in interaction terms with the mother's schooling

Continuous and constructed regressors are detailed in Table 5.16. Mothers' schooling and age are mean-centred before constructing squared and cubic terms, so that higher-order polynomials do not inflate collinearity and the coefficients of the lower-order terms (and the intercept) can be interpreted at the sample mean of the mother's schooling. Father's schooling is entered linearly. Household income is entered in logarithms, reflecting its skewness and the expectation of diminishing marginal effects.

Table 5.16

Description of Continuous, Centred, Polynomial, and Interaction Regressors

Sl. No.	Variable name	Description/construction	Purpose in the model
1	Mother's schooling (centred)	Mother's years of schooling – mean mother's schooling (8.80 years)	To recentre at the sample mean so that higher-order terms do not inflate collinearity and so that the intercept refers to an “average” mother.
2	Mother's schooling ² (centred)	[Mother's schooling (centred)] ²	To allow a non-linear (diminishing or increasing) maternal schooling effect.
3	Mother's schooling ³ (centred)	Cubic term of centred mother's schooling.	To allow for flexible turning points in intergenerational transmission.
4	Mother × Muslim	Interaction between centred mother's schooling and the Muslim dummy	To allow the maternal transmission slope to differ between Muslims and non-Muslims
5	Mother's schooling ² × Muslim	Interaction between centred mother's schooling and the Muslim dummy	To allow the curvature of transmission to differ between Muslims and non-Muslims.
6	Father's schooling (years)	Reported years of formal schooling of the father	Standard parental control captures paternal human capital.
7	Age (centred)	Respondent's age centred at the sample mean: Respondent's age – mean age	To control for cohort/age effects without rescaling other variables.
8	Age ² (centred)	Squared centred age: [Age (centred)] ²	To model non-linear cohort/age effects
9	Log household income	Natural logarithm of reported household income	To control for economic status, the log was used because income is skewed, and the effect is likely to be of decreasing magnitude.

Note. Only the mother's schooling and the respondent's age were mean-centred before constructing the polynomial terms. Log household income was transformed, but not centered.

The descriptive statistics for all variables used in the regressions appear in Table 5.17.

Table 5.17

Descriptive Statistics of Variables Used in the Intergenerational Schooling Regression

Sl. No.	Variable	Obs.	Mean	SD	Min.	Max.
1	Daughter's schooling (years)	704	14.40	3.91	0.00	25.00
2	Mother's schooling (years)	704	8.80	5.05	0.00	19.00
3	Mother's schooling (centred)	704	0.00	5.05	-8.80	10.20
4	Mother's schooling ² (centred)	704	25.46	27.27	0.04	104.07
5	Mother's schooling ³ (centred)	704	-26.63	305.15	-681.08	1,061.74
6	Religion (Muslim = 1)	704	0.56	0.50	0.00	1.00
7	Mother × Religion	704	-0.66	3.63	-8.80	10.20
8	Mother's schooling ² × Religion	704	13.57	23.56	0.00	104.07
9	Father's schooling (years)	704	8.47	5.17	0.00	23.00
10	Age (centred)	704	0.00	9.51	-11.77	17.23
11	Age ² (centred)	704	90.40	76.08	0.05	296.78
12	Log household income	704	10.77	0.87	6.91	13.82
13	Rural (= 1)	704	0.61	0.49	0.00	1.00
14	Semi-urban (= 1)	704	0.26	0.44	0.00	1.00
15	Faced barrier to schooling (= 1)	704	0.25	0.43	0.00	1.00

Note. Centred variables take the original value minus the sample mean; hence, their means are approximately zero. Polynomial terms were computed after centring to reduce collinearity. The log of household income was used without centring because income was highly skewed. Categorical variables (Muslim, Rural, Semi-urban, Faced barrier) are coded 1 = category present, 0 = otherwise.

Source: Computed from the primary survey data (2025).

5.8.3 Model Adequacy and Diagnostics

Before interpreting the results, standard diagnostic tests were conducted on the full model (Model 3) to ensure appropriate specification and robust inference. As summarized in Table 5.18, the OLS assumptions were generally met, with necessary adjustments for heteroskedasticity.

The *Ramsey RESET test* ($F(3, 687) = 1.29, p = .277$) and link test ($p = .330$) showed no evidence of functional form misspecification or omitted variable bias. However, both the *Breusch–Pagan/Cook–Weisberg test* ($\chi^2(1) = 34.76, p < .001$) and *White's general heteroskedasticity test* ($\chi^2(84) = 122.36, p = .004$) indicated the presence of heteroskedasticity. Consequently, the coefficients and standard errors reported in

Table 5.19 are based on HC3 robust standard errors, ensuring valid inference despite non-constant variance. Multicollinearity was monitored via the Variance Inflation Factor (VIF). Although the mean VIF was acceptable at 3.47, the maximum VIF (13.72) for the Mother's schooling—centred term) is expected and considered non-problematic, as it is a known consequence of including necessary polynomial and interaction terms.

The Shapiro–Wilk test of residual normality was significant ($W = 0.9858, p < .001$), and visual inspection of the residual histogram (Figure 5.4) and Q–Q plot (Figure 5.5) showed mild deviations in the tails. Given the large sample size ($N=704$) and the use of robust standard errors, these deviations do not threaten inference. Plots of residuals against fitted values revealed no systematic patterns, and Cook's distances were well below the threshold for influential observations (maximum = 0.024). Collectively, this diagnostic evidence supports the adequacy of the model for substantive interpretation.

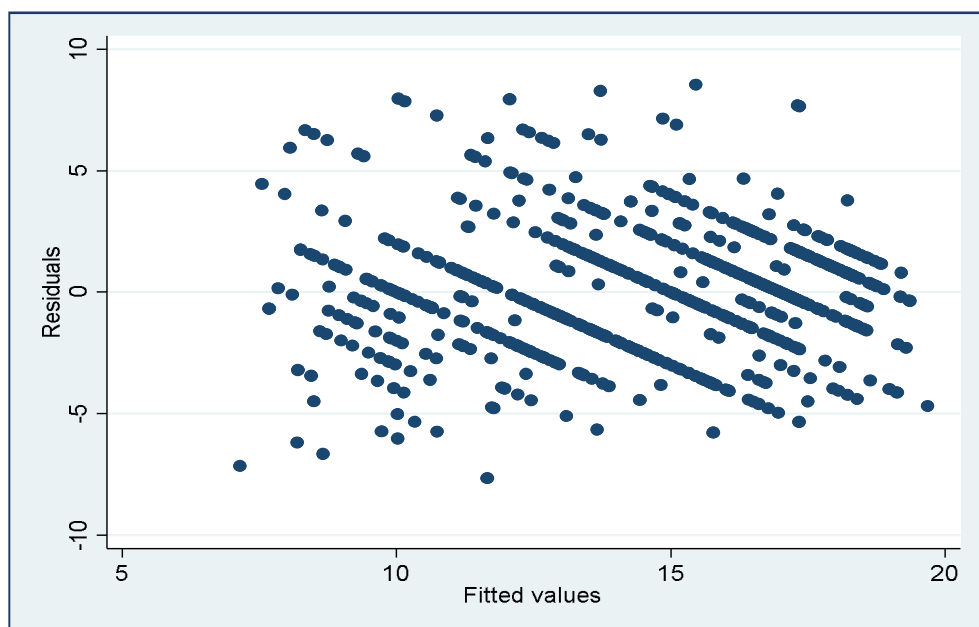
Table 5.18

Regression Model Adequacy and Diagnostic Test Results (Final Model)

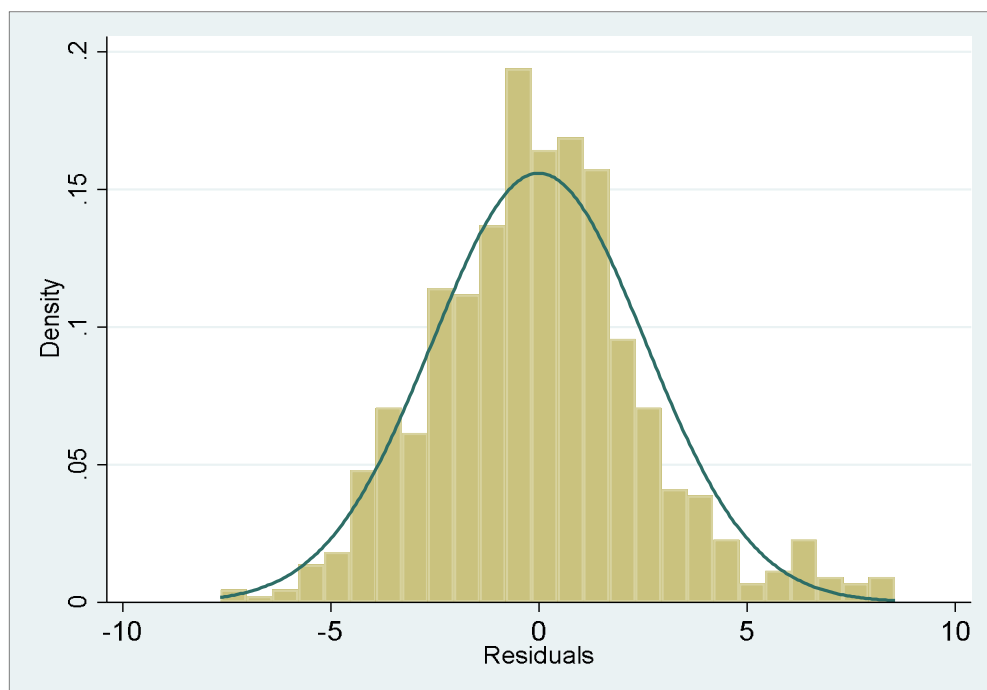
Sl. No.	Test (purpose)	Test statistic	<i>p</i> -value	Inference
1	Ramsey RESET test (functional form / omitted variables)	$F(3, 687) = 1.29$	.277	No evidence of misspecification; chosen functional form acceptable.
2	Breusch–Pagan / Cook–Weisberg test (heteroscedasticity)	$\chi^2(1) = 34.76$	< .001	Heteroscedasticity present → robust (HC3) SEs reported
3	White test (general heteroskedasticity)	$\chi^2(84) = 122.36$	.004	Confirms non-constant variance; robust SEs justify inference
4	Link test (specification check)	$hatsqt(701) = -0.97$	.330	No evidence of omitted non-linear term (result corroborates RESET).
5	VIF (multicollinearity)	Mean $VIF = 3.47$; Max $VIF = 13.72$ (Mother's schooling—centred)	—	Acceptable; higher VIF is expected with polynomial/ interaction terms.
6	Shapiro–Wilk (residual normality)	$W = 0.9858$ ($z = 4.57$)	< .001	Residuals depart from perfect normality; with $n = 704$ and robust SEs, OLS inference remains valid.
7	Cook's distance (influential observations)	Max Cook's $D = 0.024$ (< 1)	—	No influential outliers

Note. Serial correlation does not apply to cross-sectional OLS. All inference for the primary model uses HC3 robust standard errors

Source: Computed from the primary survey data (2025).

Figure 5.3*Residuals versus Predicted Values*

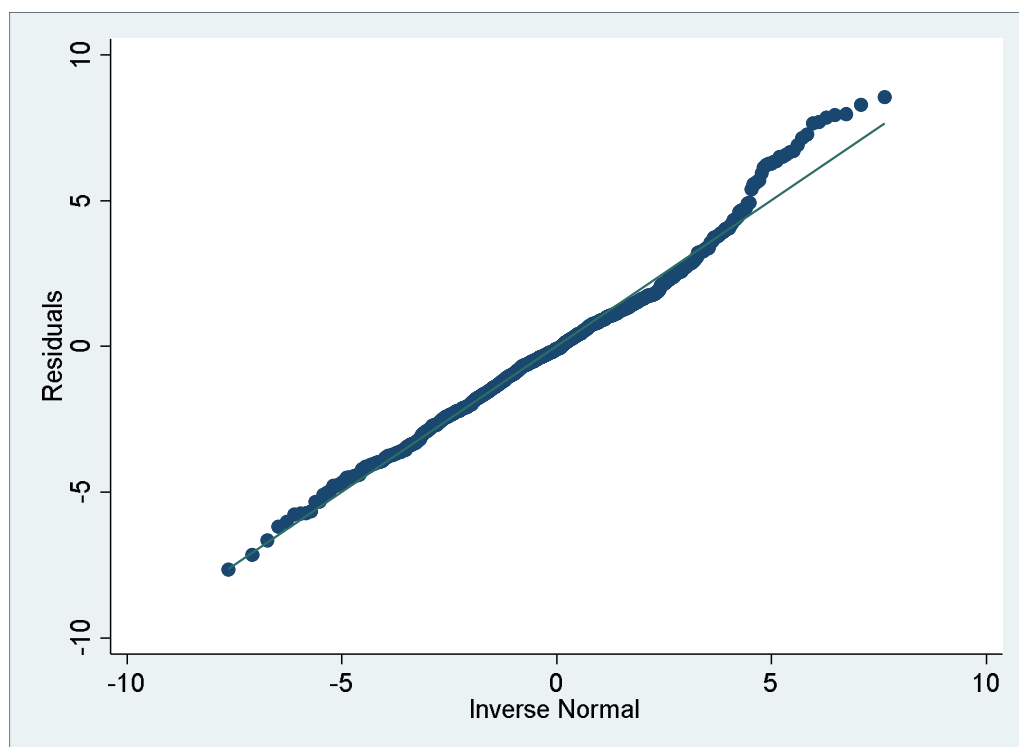
Source: Constructed from the primary survey data (2025).

Figure 5.4*Histogram of OLS Residuals with Normal Density Overlay ($n = 704$)*

Source: Primary survey data (2025).

Figure 5.5

Q–Q Plot of OLS Residuals versus Theoretical Normal Quantiles ($n = 704$)



Note. Points lie close to the 45° line with mild tail departures, consistent with formal tests (Shapiro–Wilk $W = 0.9858$, $p < .001$).

Source: Primary survey data (2025).

5.8.4 Regression Results and Discussion

Table 5.19 presents the main regression results across three nested specifications. Model 1 estimates a baseline linear relationship, revealing substantial intergenerational persistence: each additional year of maternal schooling is associated with approximately 0.52 additional years of schooling for daughters ($B = .517$, $p < .001$). This model alone accounts for 44.6% of the variation in daughters' schooling, underscoring the central role of maternal education in shaping educational attainment.

Model 2 introduces religion and a linear interaction term. The maternal gradient remains strong for non-Muslims ($B = .487$, $p < .001$). The Religion dummy was negative but not significant ($B = -.565$, $p = .262$), and the interaction term did

not reach statistical significance ($B = .051, p = .269$). At this stage, the results suggest broadly similar linear transmission gradients across religious groups, without marked differences in level or slope.

We focus our interpretation on Model 3, the full specification that includes all controls, polynomial terms, and religious interactions, yielding the highest explanatory power ($Adj. R^2 = 0.563$), and provides a richer understanding of the transmission process. The linear term in centred maternal schooling is positive and statistically significant ($B = .324, p < .001$), but the squared ($B = -.009, p = .072$) and cubic terms ($B = -.003, p = .001$) are negative, revealing that daughters' schooling increases with mothers' schooling but at a diminishing rate. The relationship thus exhibits curvature: the marginal gain associated with an additional year of maternal schooling is largest when the mother has relatively low schooling, and it flattens as maternal schooling approaches the top of the distribution.

Religion-specific differences emerge more clearly in the full model, revealing a pattern of differential intergenerational educational persistence. The main effect for the Religion dummy is negative and statistically significant ($B = -.860, p = .002$), indicating that at mean levels of maternal schooling, Muslim daughters attain approximately 0.86 fewer years of schooling than their non-Muslim counterparts, holding all other covariates constant.

Crucially, this baseline difference must be interpreted jointly with the interaction terms, which demonstrate that the strength and shape of intergenerational transmission differ by religion. The positive and statistically significant interaction between Muslim status and centred maternal schooling ($B = 0.095, p = .022$) indicates that the marginal effect of an additional year of mother's schooling on daughters' attainment is larger for Muslims than for non-Muslims at the mean level of maternal education. Specifically, at this point in the distribution, while an additional year of maternal schooling increases a non-Muslim daughter's attainment by approximately 0.32 years, the marginal gain for a Muslim daughter is approximately

0.42 years ($0.324 + 0.095$). This finding suggests higher intergenerational persistence (or elasticity) within the Muslim community: a daughter's educational success is more heavily dependent on her mother's human capital than it is in the non-Muslim community.

Further, the positive and statistically significant interaction between Muslim status and the squared maternal schooling term ($B = 0.016, p = .034$) demonstrates that the curvature of the intergenerational relationship differs systematically by religion. While the negative quadratic term for non-Muslims implies diminishing marginal gains to maternal schooling at higher levels, this flattening of the relationship is substantially attenuated among Muslims. Thus, the non-linear persistence profile observed among non-Muslims—where gains taper off at high levels of maternal schooling—operates less strongly for Muslims.

Taken together, these interaction effects indicate that religion moderates both the magnitude and functional form of intergenerational educational transmission. The predicted schooling gap between Muslim and non-Muslim daughters is largest at very low levels of maternal education but narrows progressively as maternal schooling increases. Maternal education, therefore, plays a particularly strong equalising role for Muslim women, mitigating baseline disadvantages and generating relatively larger gains across much of the maternal schooling distribution. These results indicate that, although Muslim daughters begin from a lower average baseline, the responsiveness (elasticity) of daughters' schooling to maternal education is higher among Muslims, pointing to a distinct and more dynamic transmission mechanism.

Control variables behave in line with theoretical expectations. Father's Schooling is a statistically significant and positive predictor ($B = 0.173, p < .001$), confirming that paternal human capital contributes independently to the daughter's attainment, controlling for the mother's effect. The age ($B = -.112, p < .001$) and age-squared ($B = -.004, p = .003$) coefficients are negative and highly

significant, implying that younger cohorts have experienced greater educational attainment than older ones, mirroring Kerala's broader educational expansion over recent decades. The coefficient on log household income is positive but not statistically significant ($B = .189, p = .112$) in the fully adjusted model, suggesting that once parental education and other controls are accounted for, income contributes modestly to explaining variation in daughters' schooling. Location dummies are likewise not statistically significant, suggesting that conditional on family characteristics, the rural–urban divide is not a major determinant of daughters' schooling. In contrast, the experience of educational barriers has a large and significantly negative association with daughters' schooling ($B = -.932, p = .001$), demonstrating that constraints such as financial hardship, early marriage pressures, or gendered social norms have substantial consequences for educational attainment.

Overall, the regression analysis indicates that intergenerational schooling transmission is strong but non-linear; that religious differences in daughters' schooling are conditional on maternal education and family context; and that paternal schooling and perceived barriers constitute important channels shaping mobility patterns. The results highlight a pattern of high intergenerational persistence with conditional convergence, where Muslim daughters benefit particularly from increments in mothers' schooling despite having a lower baseline at average maternal schooling levels. The findings deepen the descriptive mobility patterns presented earlier, showing that what appears as upward mobility at the aggregate level is conditioned by parents' education, family background, and religion in meaningful ways.

Table 5.19

Determinants of Daughters' Years of Schooling (OLS; HC3 robust SEs)

Predictor	Model 1: Baseline	Model 2: Religion interaction	Model 3: Full polynomial & controls
Mother's schooling (years)	0.517*** (0.023)	0.487*** (0.031)	—
Mother's schooling (centred)	—	—	0.324*** (0.074)
Mother's schooling ² (centred)	—	—	−0.009* (0.005)
Mother's schooling ³ (centred)	—	—	−0.003*** (0.001)
Religion (Muslim =1; ref: non-Muslim)	—	−0.565 (0.504)	−0.860*** (0.281)
Mother's schooling × Religion	—	0.051 (0.046)	0.095** (0.042)
Mother's schooling ² × Religion	—	—	0.016** (0.008)
Father's schooling (years)	—	—	0.173*** (0.042)
Age (centred)	—	—	−0.112*** (0.012)
Age ² (centred)	—	—	−0.004*** (0.002)
Log household income	—	—	0.189 (0.119)
Rural (ref: urban)	—	—	−0.123 (0.253)
Semi-urban (ref: urban)	—	—	−0.075 (0.302)
Faced barrier in schooling (=1)	—	—	−0.932*** (0.291)
Constant	9.850*** (0.254)	10.214*** (0.370)	12.109*** (1.381)
<i>n</i>	704	704	704
R ²	.446	.447	.571
Adj. R ²	.445	.445	.563
<i>F</i> (<i>df</i> ₁ , <i>df</i> ₂)	510.52*** (1, 702)	175.05*** (3, 700)	71.95*** (13, 690)

Note. DV = daughters' years of schooling (in years). Standard errors in parentheses.

* $p < .10$, ** $p < .05$, *** $p < .01$.

5.8.5 Conclusion

This section has provided econometric evidence on intergenerational educational transmission among women in Kerala, complementing the descriptive mobility measures presented earlier in the chapter. The findings confirm that maternal schooling is a central determinant of daughters' educational attainment, but the relationship is non-linear, with diminishing marginal gains at higher levels of maternal education—particularly among non-Muslims.

Importantly, the analysis demonstrates that religion moderates intergenerational educational persistence in both magnitude and form. While Muslim daughters exhibit a lower conditional baseline of educational attainment at the mean level of maternal schooling relative to non-Muslims, they demonstrate stronger intergenerational persistence. The effect of a mother's education on her daughter's schooling is more intense among Muslims, implying that increments in maternal schooling translate into larger educational gains for Muslim daughters than for non-Muslims. As a result, the predicted Muslim–non-Muslim educational gap is largest at very low levels of maternal schooling and narrows as mothers become more educated, with maternal schooling acting as a particularly powerful equalising force within Muslim households. These findings indicate a pattern of high intergenerational persistence combined with conditional convergence.

Beyond maternal schooling, paternal education and cohort effects play significant roles in shaping daughters' attainment, while reported educational barriers exert a substantial negative influence. Together, these results underscore that intergenerational mobility is not governed by a single uniform mechanism but emerges from the interaction of parental human capital, structural constraints, and group-specific transmission dynamics.

Overall, the regression evidence reinforces the conclusion that Kerala's educational regime is characterised by both persistence and mobility: strong intergenerational dependence coexists with meaningful opportunities for advancement, particularly for groups historically positioned at lower educational

baselines. The section thus provides a rigorous foundation for the decomposition and further mobility analyses that follow.

5.9 Decomposing the Muslim–Non-Muslim Difference in Women’s Educational Attainment

5.9.1 Introduction

The preceding analyses in this chapter revealed two seemingly contradictory patterns: Muslim women in Kerala demonstrate greater intergenerational educational mobility—gaining more years of schooling relative to their mothers—yet achieve lower final educational attainment than non-Muslim women. Specifically, Muslim daughters advanced by 6.13 years over their mothers' education compared to 4.94 years among non-Muslim daughters, indicating stronger upward movement within the Muslim community despite persistent disadvantage in absolute attainment levels.

To resolve this paradox, this section employs the Blinder–Oaxaca (B–O) decomposition (Blinder, 1973; Oaxaca, 1973) to partition the observed 1.49-year difference in daughters’ mean schooling between non-Muslim and Muslim women into components attributable to group differences in observable characteristics such as parental education and educational barriers (endowments effect), differences in the returns to those characteristics (coefficients), and simultaneous differences in both (interaction effect, in the threefold form). This approach indicates how much of the between-group difference arises from unequal resources versus unequal conversion of comparable resources into daughters’ schooling—or both—thereby clarifying why higher mobility does not automatically yield parity in attainment levels.

5.9.2 Methodological Framework

The Blinder–Oaxaca decomposition quantifies the sources of the mean outcome difference between two groups. Let $\bar{Y}_{NM}$ and $\bar{Y}_M$ represent the mean years of schooling for non-Muslim and Muslim daughters, respectively, with $\bar{X}_{NM}$ and $\bar{X}_M$ as their mean covariate vectors, and $\hat{\beta}_{NM}$ and $\hat{\beta}_M$ as the group-specific OLS coefficients. The between-group attainment difference is $\Delta = \bar{Y}_{NM} - \bar{Y}_M$.

Using the threefold B–O decomposition with Muslim group coefficients ($\hat{\beta}_M$) as reference:

$$\Delta = \underbrace{(\bar{X}_{NM} - \bar{X}_M)' \hat{\beta}_M}_{\text{Endowments}} + \underbrace{\bar{X}_M' (\hat{\beta}_{NM} - \hat{\beta}_M)}_{\text{Coefficients}} + \underbrace{(\bar{X}_{NM} - \bar{X}_M)' (\hat{\beta}_{NM} - \hat{\beta}_M)}_{\text{Interaction}} \quad \dots(5.7)$$

Endowments represent differences in observable characteristics; coefficients capture differences in the mapping from characteristics to outcomes (the “unexplained” part); the interaction reflects joint differences. Robustness checks employ twofold decompositions using pooled (Neumark, 1988) and Reimers’ (1983) 50–50 weighted reference coefficients. Heteroskedasticity-robust standard errors are reported throughout.

5.9.3 Empirical Specification

The decomposition estimates separate linear models for each group. To remain comparable with Section 5.8 while respecting the group-specific nature of B–O estimation, the same linear model is estimated separately for non-Muslim and Muslim daughters, using all regressors from the final OLS specification except the religion indicator and its interactions (which are absorbed by split-sample estimation). Continuous variables are mean-centered before forming polynomial terms in mothers’ schooling and age. The linear model estimated for each group is:

$$Y_i = \beta_0 + \beta_1 M_{c,i} + \beta_2 M_{c,i}^2 + \beta_3 M_{c,i}^3 + \beta_4 F_i + \beta_5 A_{c,i} + \beta_6 A_{c,i}^2 + \beta_7 \ln(I)_i + \beta_8 R_i + \beta_9 S_i + \beta_{10} B_i + \varepsilon_i \quad \dots(5.8)$$

where the variables are defined as follows:

Y_i = daughter i’s years of completed schooling.

$M_{c,i}$ = mother’s years of schooling for daughter i, mean-centred; $M_{c,i}^2$, $M_{c,i}^3$ are its polynomial terms.

F_i = father’s years of schooling.

$A_{c,i}$ = respondent’s age (years), mean-centred; $A_{c,i}^2$ is its square.

$\ln(I)_i$ = natural logarithm of household income.

R_i = binary indicator for rural residence (1 = rural, 0 = otherwise).

S_i = binary indicator of semi-urban residence (1 = semi-urban, 0 otherwise).

(Urban is the omitted reference category.)

B_i = binary indicator for facing educational barriers (1 = reports barrier(s), 0 = none).

E = error term.

Analyses use a harmonised sample obtained by listwise deletion on the outcome and all regressors, yielding $N = 697$ (306 non-Muslim; 391 Muslim). Re-estimating OLS on this harmonised sample produces coefficients and fit that are substantively identical to Section 5.8, ensuring comparability.

5.9.4 Descriptive Statistics (Harmonised Sample)

Table 5.20 presents descriptive statistics for all variables in the harmonised sample used for decomposition. On this sample, the between-group difference in daughters' mean schooling is 1.49 years (15.22 for non-Muslims versus 13.73 for Muslims), which matches the "overall difference" reported by the B–O procedure. Relative to the full OLS sample ($N = 704$), differences reflect minor listwise deletion for the polynomial and control terms.

Table 5.20

Descriptive Statistics for Decomposition Variables by Religious Group (Harmonised Sample, $N=697$)

Variable	Muslim (n = 391)	Non-Muslim (n = 306)	Total (N = 697)
Dependent Variable			
Daughter's schooling (years)	13.73 (4.04)	15.22 (3.61)	14.38 (3.92)
Independent Variables			
Mother's schooling (years)	7.59 (4.77)	10.11 (4.86)	8.70 (4.97)
Mother's schooling (centred)	-1.21 (4.77)	1.31 (4.86)	-0.10 (4.97)
Mother's schooling ² (centred)	24.17 (26.84)	25.30 (25.49)	24.67 (26.24)
Mother's schooling ³ (centred)	-86.15 (280.82)	24.24 (282.03)	-37.68 (286.44)
Father's schooling (years)	7.55 (4.86)	9.48 (5.30)	8.40 (5.15)
Age (years)	36.78 (9.25)	36.81 (9.82)	36.79 (9.50)
Age ² (centred)	85.36 (73.66)	96.14 (78.98)	90.10 (76.18)
Log household income	10.78 (0.88)	10.74 (0.86)	10.76 (0.87)
Rural residence (%)	65.7	54.2	60.7
Semi-urban residence (%)	23.8	29.4	26.3
Educational barriers (%)	29.2	19.6	25.0

Note. Values represent means with standard deviations in parentheses for continuous variables and percentages for categorical variables.

Source: Primary survey data (2025)

The data reveal that Muslim households remain disadvantaged in both parental education and access-related conditions, though the gap has narrowed relative to the previous generation.

5.9.5 Results and Discussion

Table 5.21 presents the B–O threefold decomposition using Muslim coefficients as the reference; Table 5.22 details contributions within the endowments channel. On the harmonised sample, the total observed mean between-group difference in daughters' schooling is 1.49 years ($SE = 0.292$, $p < .001$), favouring non-Muslim women. This difference decomposes into a dominant endowments component of 1.125 years ($SE = 0.259$, $p < .001$), a positive coefficients component of 0.531 years ($SE = 0.225$, $p = .018$), and a small, statistically non-significant interaction of -0.166 years ($SE = 0.149$, $p = .264$).

The endowments component (75.5% of the total difference) indicates that most of the shortfall in final attainment is attributable to observed resource disparities—principally lower parental schooling and a higher prevalence of reported schooling barriers among Muslims. These large endowments component explains much of the persistence of lower final levels among Muslim daughters: the baseline stocks of educational resources remain lower. Within endowments (Table 5.22), the largest contribution arises from mothers' schooling (linear term: 0.938 years; $SE = 0.274$; $p = .001$), followed by fathers' schooling (0.307 years; $SE = 0.125$; $p = .014$) and the higher prevalence of reported schooling barriers among Muslims (0.121 years; $SE = 0.053$; $p = .024$). Higher-order maternal terms and other controls contribute little to the endowments channel and are not statistically significant.

Table 5.21

Blinder--Oaxaca Decomposition of the Non-Muslim–Muslim Difference in Daughters' Schooling (years)

Component	Coefficient	Robust SE	<i>p</i>	% of Total Gap
Overall Decomposition				
Total Difference ($\bar{Y}_{NM} - \bar{Y}_M$)	1.490	0.292	< .001	100.0
Endowments (Explained)	1.125	0.259	< .001	75.5
Coefficients (Unexplained)	0.531	0.225	.018	35.6
Interaction	-0.166	0.149	.264	-11.1
Major Endowment Contributions				
Mother's schooling (linear)	0.938	0.274	.001	62.9
Father's schooling (years)	0.307	0.125	.014	20.6
Educational barriers (=1)	0.121	0.053	.024	8.1

Note. $N = 697$ (306 non-Muslim; 391 Muslim). Threefold decomposition uses Muslim coefficients as the reference. Coefficients are in years of schooling. HC-robust standard errors.

Crucially, the coefficient component of 0.531 years accounts for 35.6% of the total difference. Because the Muslim coefficients serve as the reference in the threefold specification, a positive coefficient term means that—evaluated at the Muslim covariate means—non-Muslim coefficient estimates would predict higher schooling than Muslim coefficient estimates. In substantive terms, holding observed characteristics fixed at the Muslim means, Muslims experience lower returns to those characteristics than would be implied by the non-Muslim returns. This widens the non-Muslim minus Muslim attainment difference over and above the effect of endowments.

Inspection of the detailed coefficients block shows that the quadratic term in mothers' schooling contributes negatively to the unexplained component (≈ -0.402 ; $p \approx .037$), implying that the curvature of intergenerational transmission is comparatively more favourable for Muslims at their covariate means—this specific coefficient difference narrows the overall difference. However, the overall positive coefficient effect (0.531 years) arises because several other coefficient differences (notably the intercept and some location-related terms) pull in the opposite direction and, taken together, more than offset the narrowing effect from the maternal-schooling curvature. The interaction term is small and statistically non-significant,

indicating limited joint influence of simultaneous endowment and return differences.

Table 5.22

Detailed Endowment Contributions to Muslim the Non-Muslim Difference in Daughters' Schooling

Characteristic	Coefficient	Robust SE	<i>p</i>	Interpretation
Mother's schooling (linear)	0.938	0.274	.001	Largest endowment contributor
Mother's schooling (quadratic)	0.010	0.019	.592	Non-significant
Mother's schooling (cubic)	-0.219	0.149	.144	Non-significant
Father's schooling	0.307	0.125	.014	Significant contributor
Age (linear)	-0.004	0.090	.962	Non-significant
Age (quadratic)	-0.057	0.039	.140	Non-significant
Log household income	-0.010	0.019	.604	Non-significant
Rural residence	0.053	0.048	.271	Non-significant
Semi-urban residence	-0.014	0.026	.597	Non-significant
Educational barriers (=1)	0.121	0.053	.024	Significant contributor

Robustness checks using alternative reference structures confirmed the stability of the results. Using the pooled (Neumark, 1988) reference coefficients, the explained (endowments) component was 1.028 years ($SE = 0.231$, $p < .001$) and the unexplained (coefficients) component 0.462 years ($SE = 0.203$, $p = .023$). With Reimers' (1983) 50–50 symmetric weighting, the explained share was 1.042 years ($SE = 0.234$, $p < .001$) and the unexplained 0.448 years ($SE = 0.205$, $p = .029$). Thus, the predominance of endowments together with a positive, non-trivial unexplained component is robust to the choice of reference structure.

The small difference between the full-sample and harmonised-sample mean gap (≈ 1.48 vs 1.49 years) arises solely due to harmonising the sample for decomposition (N reduced from 704 to 697 by listwise deletion on the polynomial and control terms). Re-estimating the OLS model on this harmonised sample yields coefficients and overall fit that are substantively unchanged, confirming model stability.

5.9.6 Reconciling Educational Levels and Intergenerational Educational Mobility Patterns

The results from the decomposition and intergenerational mobility analyses together resolve the seeming contradiction between greater intergenerational educational mobility and lower final educational attainment among Muslim women compared with non-Muslim women. These two results are not contradictory; they illuminate different dimensions of the same process. The mobility analysis captures and quantifies intergenerational change within each group, whereas the decomposition explains cross-sectional between-group differences in the current generation's educational levels.

The Blinder–Oaxaca results show that non-Muslim daughters currently average about 1.49 more years of schooling than Muslim daughters, and that most of this difference is attributable to endowment disparities— particularly lower parental schooling and a higher prevalence of educational barriers among Muslims. In addition, a meaningful portion of the gap reflects differences in coefficients, indicating that Muslims receive lower returns, at their observed socio-economic profile, to the same educational endowments. Together, these patterns describe the cross-sectional inequality among the daughters' generation.

In contrast, the mobility results show that Muslim daughters gained more relative to their mothers (6.13 years) than did non-Muslim daughters (4.94 years), indicating stronger upward mobility within the Muslim community. The larger mobility observed among Muslims, therefore, coexists with, and does not contradict, their lower final attainment.

To see why these patterns naturally coexist, consider the arithmetic identity linking levels and mobility. Let $\bar{D}_g$ and $\bar{M}_g$ denote mean schooling for daughters and mothers in group g . The average intergenerational mobility within group g is:

$$\bar{G}_g = \bar{D}_g - \bar{M}_g \quad \dots(5.9)$$

The difference in mobility between Muslims (M) and non-Muslims (NM) can be expressed as

$$\bar{G}_M - \bar{G}_{NM} = (\bar{D}_M - \bar{M}_M) - (\bar{D}_{NM} - \bar{M}_{NM}) = (\bar{D}_M - \bar{D}_{NM}) - (\bar{M}_M - \bar{M}_{NM}) \dots (5.10)$$

Substituting the observed group means yields:

$$(13.73 - 7.59) - (15.22 - 10.11) = (-1.49) - (-2.52) = +1.03 \dots (5.11)$$

Hence, Muslim women's greater intergenerational mobility of about 1.03 years reflects the fact that the inter-religious difference in schooling narrowed between generations. Muslim mothers were, on average, 2.52 years behind non-Muslim mothers, whereas Muslim daughters are now 1.49 years behind. The group starting from the larger initial shortfall must, by arithmetic necessity, register the larger within-group intergenerational gains when the overall disparity contracts, even while remaining lower in absolute attainment levels. In other words, Muslim women began from a distinctly lower baseline but progressed faster as educational opportunities expanded, thereby closing part—though not all—of the historical gap.

The decomposition results explain why this convergence, though substantial, remains incomplete. The substantial endowment disadvantage places Muslim women at a lower starting point, and the coefficients disadvantage suggests that even when similarly endowed, Muslim daughters do not convert those characteristics into schooling at the same rate, likely due to contextual and institutional factors.

Taken together, the two sets of analyses deliver a coherent interpretation. Muslim women have demonstrated significant educational progress across generations, reflecting aspiration, investment, and social transformation within the community. Yet this progress unfolds within structural boundaries that inhibit full parity in final attainment. Thus, Muslim women are running a steeper race on a tougher track. Kerala's educational expansion has therefore been both inclusive and uneven: it has enabled considerable upward movement among historically disadvantaged groups, but persistent inequalities in resources and returns continue to

shape ultimate outcomes. The evidence portrays a pattern of advancement under constraint, rather than complete convergence.

5.9.7 Why Muslims Achieved Greater Intergenerational Gains Despite Structural Disadvantages

At first sight, it may seem contradictory that Muslim women, despite both endowment and coefficient disadvantages, exhibit greater intergenerational educational mobility. Yet, this coexistence of high mobility and structural disadvantage can be logically explained through three complementary mechanisms that operate simultaneously within Kerala's evolving educational system.

(a) Low-Baseline or “Room-to-Move” Effect

Muslim mothers' substantially lower educational starting point (7.6 years on average, compared with 10.1 among non-Muslims) provides a larger numerical space for their daughters to improve. Because mobility is measured as the difference between daughters' and mothers' schooling, groups starting farther behind can record greater absolute gains even when their final levels remain lower. Algebraically, this follows directly from the narrowing of the between-group gap from 2.5 years (mothers) to 1.5 years (daughters). This baseline-advantage mechanism thus explains much of the higher Muslim mobility without implying superior structural conditions.

(b) Heterogeneous Returns Across Educational Levels

The coefficient disadvantage in the decomposition captures an average shortfall across all educational levels, masking the fact that returns to parental education vary by level. Regression evidence (notably the significant *Muslim* × *Mother's Education* interaction) suggests that Muslims convert limited maternal education into daughters' schooling more efficiently at lower education levels. This suggests that community-level adaptations—such as parental prioritisation of basic education, religious-school linkages, and strengthened local educational networks—have made Muslim families particularly effective in facilitating early educational transitions, even if structural inequalities later constrain higher-level attainment.

(c) Ceiling and Compression Effects Among Non-Muslims.

Non-Muslim families, beginning from a higher parental baseline, face natural ceilings in upward educational mobility. With near-universal completion of secondary schooling, further gains require progression into tertiary or postgraduate education, where advancement is inherently slower and more selective. This compression of the upward mobility range mechanically reduces measured intergenerational gains for non-Muslims, even though their absolute educational attainment remains higher.

Together, these mechanisms show that higher mobility and structural disadvantage are not contradictory but coexisting realities. Muslim women's larger intergenerational gains do not signal the absence of barriers but rather illustrate effective navigation within persistent constraints. Their communities have developed adaptive strategies that maximise advancement from low starting positions, producing impressive upward movement despite continued inequalities in resources and returns. In this sense, Muslim women's educational story exemplifies determined progress on a steeper, more challenging path: advancement achieved against, rather than free from, structural headwinds.

5.9.8 Conclusion and Policy Implications

The analyses presented in this section provide a coherent and empirically grounded explanation for the coexistence of higher intergenerational educational mobility and lower absolute attainment among Muslim women in Kerala. The Blinder–Oaxaca decomposition revealed that the one-and-a-half-year difference in daughters' mean schooling between non-Muslim and Muslim women is driven largely by endowment disparities—principally lower parental education and greater exposure to educational barriers among Muslims—which together account for nearly three-fourths of the gap. A smaller but statistically significant coefficient component indicates that, even when starting from similar observable conditions, Muslim daughters experience weaker returns to those characteristics. Complementing this, the intergenerational mobility analysis showed that Muslim daughters have made greater absolute educational gains relative to their mothers than their non-Muslim

counterparts, underscoring that the observed inequality in current attainment does not arise from stagnation but from differing starting points and conversion efficiencies.

In conclusion, the dual findings characterize Muslim women's educational journey as one of impressive advancement achieved under structural constraints. The higher mobility observed among Muslims is not a signal of superior conditions, but rather the arithmetic consequence of starting from a much lower educational baseline; they have progressed faster than non-Muslims, thereby narrowing the historical intergenerational gap, but have not yet fully closed it. Muslim women's educational mobility reflects substantial social progress and aspirational investment within a historically disadvantaged community, demonstrating that Kerala's educational expansion has been broadly inclusive in direction, though uneven in outcomes. The persistence of an attainment gap despite higher within-group mobility highlights the dual challenge of unequal starting conditions and differential returns to similar endowments. Thus, while Muslim women are ascending the educational ladder faster relative to their mothers, the ladder itself remains steeper and shorter in reach due to structural and contextual limitations.

The findings carry clear policy implications. Sustained narrowing of the educational gap requires simultaneous attention to endowment enhancement and return equalisation. These findings necessitate a twin-pillar policy approach to achieve educational parity. First, to address the dominant endowment effect, the priority must be on strengthening the resource base of disadvantaged households through targeted programs that focus on increasing maternal literacy, ensuring universal completion of secondary schooling, and removing residual barriers to girls' continuation into higher secondary and tertiary levels that continue to affect the Muslim community. Since parental schooling accounts for the largest component of the explained gap, these efforts are paramount for closing the shortfall. Second, to address the significant coefficient effect, policies must investigate and rectify the institutional, social, and systemic mechanisms that translate into lower returns for Muslim women's educational investment. By ensuring both equal initial conditions (endowments) and equal effectiveness of resources (coefficients), government efforts can fully capitalize on the demonstrated aspirations and intergenerational

momentum within the Muslim community, transforming advancement under constraint into full equality of opportunity and outcome.

5.10 Determinants of the Intensity of Intergenerational Educational Mobility

5.10.1 Introduction

The preceding analyses demonstrated that intergenerational educational mobility—measured as the years of schooling daughters gained over their mothers—is both substantial and heterogeneous across social groups in Kerala. Earlier bivariate findings (Section 5.7) indicated that Muslim women, on average, achieved higher mobility intensity than non-Muslim women. However, such comparisons do not account for differences in parental education, income, or constraints that may shape daughters' advancement.

This section investigates the *determinants* of intergenerational mobility intensity and examines whether the Muslim–non-Muslim differential persists after controlling for key socioeconomic and demographic characteristics. Using a multiple regression framework, an OLS model with heteroskedasticity-robust standard errors is estimated. The covariates include parental education, age, household income, residential location, and respondents' self-reported educational barriers.

5.10.2 Model Specification

The determinants of mobility intensity (M_i) were estimated using the following OLS regression model:

$$M_i = \alpha + \beta_1 E_i^m + \beta_2 R_i + \beta_3 (R_i \times E_i^m) + \beta_4 E_i^f + \beta_5 A_i + \beta_6 I_i + \beta_7 L_i^r + \beta_8 L_i^s + \beta_9 B_i + \varepsilon_i \quad (5.12)$$

where:

M_i is mobility intensity, defined as the daughter's years of schooling minus the mother's years of schooling.

E_i^m is the mother's years of schooling (mean-centred).

R_i is a dummy variable for religious affiliation (1 = Muslim).

E_i^f is the father's years of schooling.

A_i is the daughter's age.

I_i is the natural logarithm of household income.

L_i^r and L_i^s Are dummy variables for rural and semi-urban residence, respectively (urban is the reference category).

B_i is a dummy variable indicating the presence of self-reported educational barriers.

ε_i is the random error term.

Mean-centring E_i^m ensures that β_2 (the Muslim coefficient) measures the conditional group difference at the sample mean of mothers' schooling, while β_3 (the interaction) captures how the slope of mothers' schooling differs between religious groups.

5.10.3 Descriptive Statistics

Table 5.23 summarises the descriptive statistics for variables used in the regression model. On average, daughters attained 5.6 more years of schooling than their mothers (SD = 3.8).

Table 5.23

Descriptive Statistics for Mobility Analysis Variables (N = 704)

Variable	Mean	SD	Min	Max
Mobility Intensity (years)	5.60	3.80	-6.00	20.00
Daughter's Schooling (years)	14.40	3.91	0.00	23.00
Mother's Schooling (years)	8.80	5.05	0.00	19.00
Mother's Schooling (centred)	0.00	5.05	-8.80	10.20
Father's Schooling (years)	8.47	5.17	0.00	23.00
Age	36.77	9.51	25.00	54.00
Log Household Income	10.77	0.87	6.91	13.82
Categorical Variables		N	%	
Muslim		264	37.5	
Rural Residence		426	60.5	
Semi-urban Residence		186	26.4	
Urban Residence (Reference)		92	13.1	
Educational Barriers		174	24.7	

Source: Primary survey data (2025)

5.10.4 Model Adequacy and Diagnostic Tests

Before interpreting coefficients, standard post-estimation diagnostics were carried out to verify model adequacy and assess the key assumptions of OLS regression. The summary is provided in Table 5.24.

Table 5.24

Model Adequacy and Diagnostic Tests (Mobility OLS Model, N = 704)

Sl. No.	Test (purpose)	Test statistic	<i>p</i> -value	Inference
1	Ramsey RESET test (functional)	$F(3, 691) = 1.13$	.337	No evidence of omitted non-linear terms
2	Link test (<i>_hatsq</i>) (specification check)	$t(701) = 0.35$	.728	Model correctly specified.
3	Breusch–Pagan test (heteroscedasticity)	$\chi^2(1) = 7.21$	.007	Heteroscedasticity present
4	White test (general heteroskedasticity)	$\chi^2(46) = 88.56$	<.001	Confirms heteroskedasticity; robust SEs applied.
5	VIF (multicollinearity)	Mean <i>VIF</i> = 2.48; Max <i>VIF</i> = 6.22	—	No serious multicollinearity.
6	Shapiro–Wilk (residual normality)	$W = 0.985$ ($z = 4.78$)	< .001	Minor non-normality
7	Cook's distance (influential observations)	Max <i>Cook's D</i> = 0.025 Mean <i>Cook's D</i> = 0.0015	—	No influential outliers

Note. Serial correlation does not apply to cross-sectional OLS. All inference for the primary model uses robust standard errors

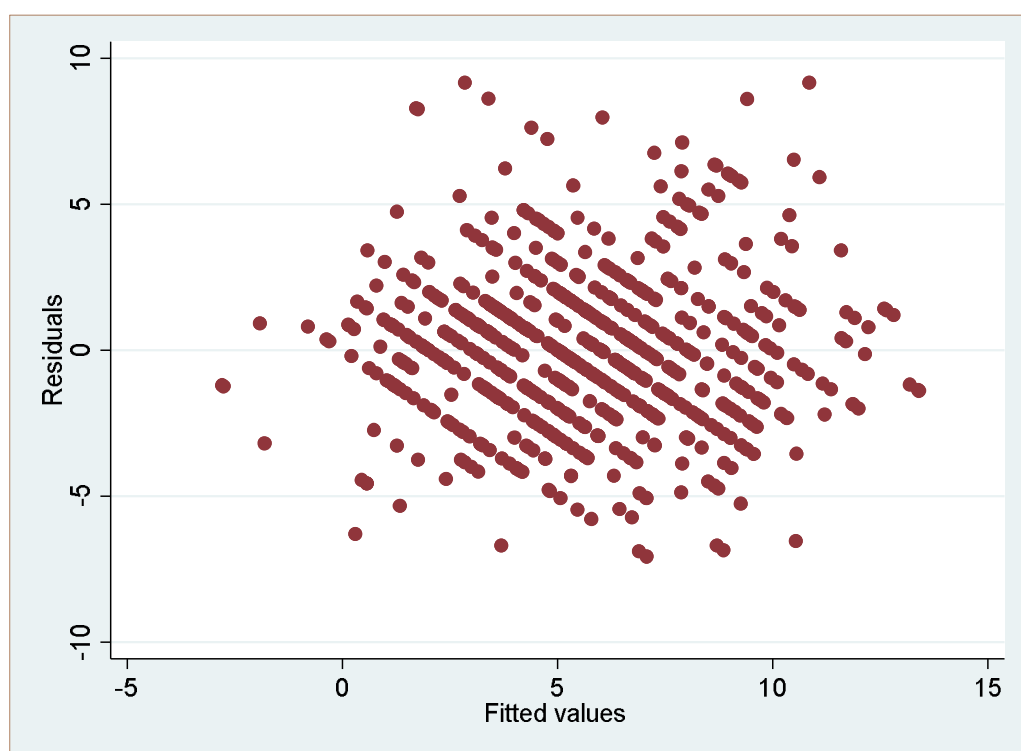
Source: Computed from the primary survey data (2025).

The non-significant Ramsey RESET test ($F(3, 692) = 1.13, p = .337$) and Link test ($t(701) = 0.35, p = .728$) indicated no evidence of omitted variable bias or functional form misspecification. Multicollinearity was assessed using Variance Inflation Factors (VIF). VIFs were well below the critical threshold of 10 (mean VIF = 2.48) and showed the absence of harmful collinearity, even with an interaction term.

Heteroskedasticity was detected by both the Breusch–Pagan/Cook–Weisberg ($\chi^2(1) = 7.21, p = .007$) and White’s general test ($\chi^2(46) = 88.56, p < .001$); hence, robust (HC3) standard errors were used. The Skewness-Kurtosis test indicated a statistically significant departure from perfect normality ($W = 0.986, p < .001$). However, residual plots (figure 5.6) revealed no major anomalies; the residual histogram (figure 5.8) approximated normality, and Q–Q plots (figure 5.7) suggested minor deviations in tails. Given the large sample size ($N = 704$), the Central Limit Theorem suggests that the non-normality of residuals is not a major concern for inference. Finally, Cook’s D values were well below 1 (Max $D = 0.025$), confirming the absence of influential outliers. These diagnostic results collectively support the model’s adequacy for inference.

Figure 5.6

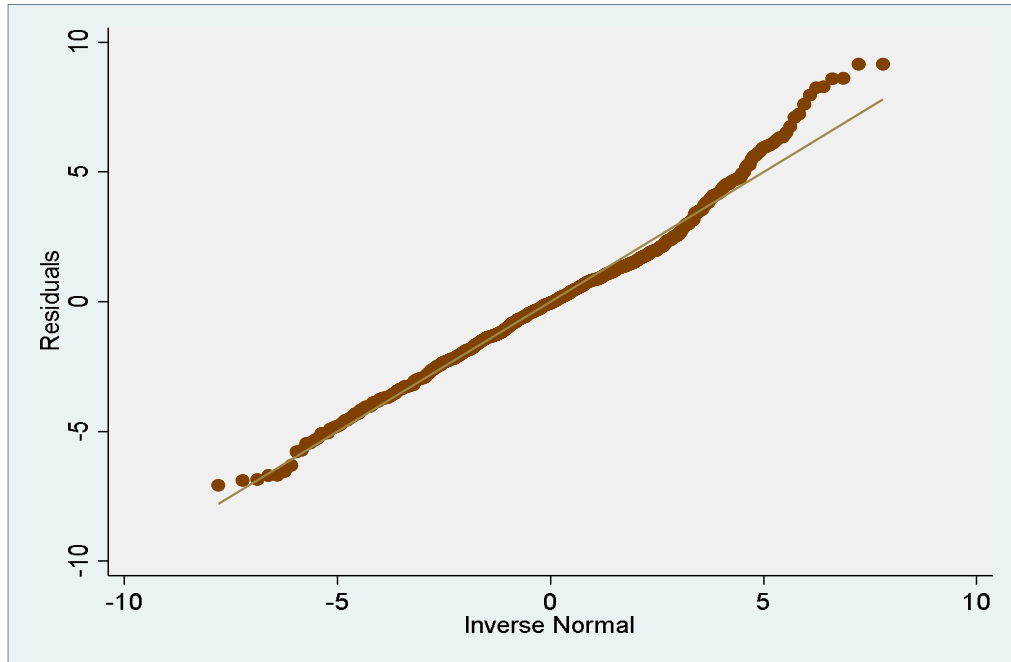
Scatter Plot of Residuals versus Predicted Values



Source: Primary survey, Kerala, 2025.

Figure 5.7

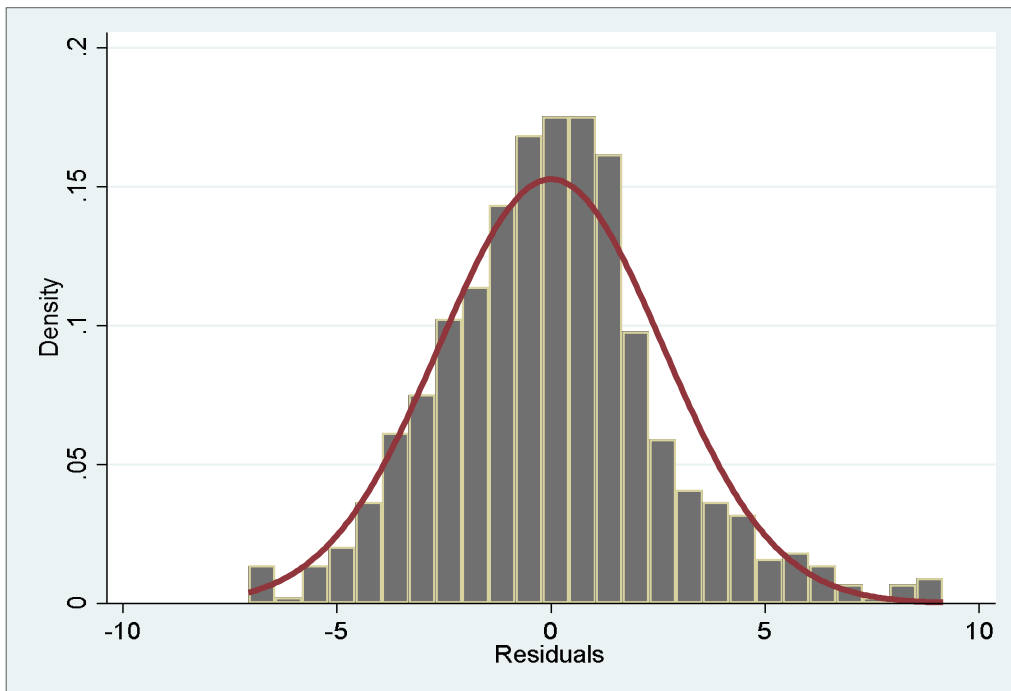
Normal Q-Q Plot of OLS Residuals ($n = 704$)



Source: Primary survey, Kerala, 2025.

Figure 5.8

Histogram of Residuals with Overlaid Normal Curve



Source: Primary survey, Kerala, 2025.

5.10.5 Regression Results and Discussion

The multiple linear regression results, estimated using OLS with robust standard errors, are presented in Table 5.25. The overall model was statistically significant, $F(9, 694) = 94.40$, $p < .001$, and accounted for a substantial 52.6% of the variation in the mobility intensity ($R^2 = .526$; Adjusted $R^2 = .520$).

Table 5.25

Multiple Linear Regression Estimation (OLS) Results for Mobility Intensity

Predictor	Unstandardised Coefficients (<i>B</i>)	Robust <i>SE</i>	<i>t</i>	<i>p</i>	<i>VIF</i>
Intercept	7.308***	1.39	5.24	<.001	—
Mother's Schooling (E^m)	-.841***	.051	-16.64	<.001	6.22
Muslim (<i>R</i>)	-.447**	.207	-2.16	.031	1.11
Muslim $\times$ Mother's Schooling ($R \times E^m$)	.088**	.044	2.01	.045	2.32
Father's Schooling (E^f)	.184***	.042	4.40	<.001	4.13
Age (<i>A</i>)	-.121***	.012	-10.14	<.001	1.31
Log Income (<i>I</i>)	.179	.120	1.49	.136	1.02
Rural (L^r)(ref: Urban)	-.260	.246	-1.06	.290	2.49
Semi-urban (L^s)(ref: Urban)	-.072	.304	-0.24	.812	2.44
Educational Barriers (<i>B</i>)	-1.076***	.283	-3.81	<.001	1.24
R^2	0.526	Number of obs.	704		
$F(9, 694)$	94.40	<i>Prob > F</i>	< .001		
Adjusted R^2	0.520	<i>Root MSE</i>	2.630		

Note. Mother's schooling is mean-centred. *** $p < .01$, ** $p < .05$.

Source: Primary survey, Kerala (2025).

The results revealed a clear and consistent pattern. Holding all covariates constant, mothers' schooling exhibited a strong negative effect on mobility intensity ($B = -0.841$, $p < .001$). This pattern is consistent with a headroom (ceiling/compression) effect, where mothers are already well educated, and daughters have fewer additional years left to gain.

Religion also exerted a significant effect. The coefficient for the Muslim dummy was negative and statistically significant ($B = -0.447$, $p = .031$), indicating

that for women with mothers of average education, Muslim daughters experienced significantly lower conditional mobility intensity than their non-Muslim counterparts, controlling for all other factors. However, this main effect is qualified by a significant positive interaction between Muslim and mother's schooling ($B = 0.088$, $p = .045$). This reveals that the negative relationship between maternal schooling and daughter's mobility intensity is less steep for Muslims. In effect, the Muslim disadvantage in mobility intensity observed at the mean of maternal schooling diminishes as maternal education rises, with predicted values for the two groups converging at higher levels of maternal education. This pattern indicates a moderated intergenerational transmission process within Muslim families, where the mobility penalty associated with increasing maternal education is less severe.

Among the control variables, father's schooling contributed positively and significantly ($B = 0.184$, $p < .001$), highlighting the reinforcing role of paternal education in enhancing daughters' educational mobility, possibly through greater educational aspirations or better resource allocation within households. Age was negatively related ($B = -0.121$, $p < .001$), confirming that younger women achieved greater upward mobility than older cohorts. Importantly, self-reported educational barriers exerted a statistically significant and substantial negative effect ($B = -1.076$, $p < .001$). This suggests that women who faced barriers achieved over one full year less mobility on average, underscoring that obstacles encountered during one's educational journey have a lasting, negative impact on intergenerational progress, independent of family background. Notably, household income and location dummies (rural, semi-urban) were not statistically significant determinants of mobility intensity in this conditional model, suggesting that parental education and structural barriers are the dominant forces over current income or geography.

Overall, the results indicate that intergenerational mobility intensity is shaped most strongly by parental education (negative gradient with maternal schooling; positive with paternal schooling), cohort timing (age), and barriers experienced. Religion matters conditionally: Muslim women have a slightly lower mobility at the

maternal mean but experience a flatter decline as maternal education rises, consistent with a resilient intergenerational transmission process within the Muslim community.

5.10.6 Reconciliation of Bivariate and Multivariate Findings

At first glance, the regression results may appear inconsistent with earlier bivariate findings reported in Section 5.7, which showed that Muslim women exhibited greater average intergenerational mobility (6.13 years) than non-Muslim women (4.94 years). In contrast, the regression model indicated a *negative* coefficient for the Muslim dummy ($B = -0.447$). However, these two findings represent different analytical perspectives rather than a contradiction. The reconciliation lies in differentiating between unadjusted aggregate means and adjusted conditional effects.

The bivariate result is descriptively accurate, but the comparison is unadjusted: it reflects groups “as they are.” The bivariate analysis compared group means *without* accounting for differences in maternal education or other covariates. Because Muslim mothers in the sample had substantially lower average schooling (≈ 7.6 vs. 10.3 years), and mobility declines with maternal schooling (-0.841 per year), Muslim daughters exhibit higher average gains mechanically—there is more headroom to move up. This higher bivariate mobility reflects a composition effect arising from lower maternal schooling levels.

The regression contrasts groups holding parental schooling and other covariates constant. The negative coefficient for the Muslim dummy indicates that, for women with the same maternal schooling and socioeconomic background, Muslim daughters exhibit slightly lower expected mobility than their non-Muslim counterparts, not an overall disadvantage for them. At the same time, the positive interaction shows that the penalty for increasing maternal schooling is less severe for Muslim women. When predictions are evaluated at each group’s observed maternal distribution, the lower baseline combined with the flatter slope for Muslims reproduces the higher average mobility found in the bivariate analysis. Hence,

Muslim women have higher unadjusted mobility due to lower maternal starting points and a gentler decline with maternal schooling, yet at the same maternal level, they exhibit slightly lower conditional mobility near the mean.

This reconciliation underscores that both findings are simultaneously true: Muslim women have achieved greater average intergenerational gains primarily because they started from a lower baseline, while conditional on equivalent parental education, they face slightly reduced mobility intensity, which is compensated for by their superior rate of progress.

5.10.7 Conclusion

The results from the regression analysis, together with the earlier descriptive findings, reveal a complex architecture of intergenerational educational mobility among women in Kerala. Muslim women have experienced substantial upward mobility, gaining more schooling than their mothers and non-Muslim women on average. The higher raw mobility observed among Muslim women is primarily a compositional effect arising from the group's lower baseline of maternal education.

Regression analysis showed that education—especially mothers' schooling—remains the dominant determinant of daughters' mobility, while cohort dynamics and the presence (or absence) of educational barriers powerfully shape outcomes. This multivariate analysis also revealed that, after accounting for maternal education and socioeconomic factors, Muslim women's conditional mobility intensity is modestly lower at the average maternal schooling level. This apparent paradox of bivariate and multivariate analysis results arises because Muslims began from significantly lower maternal baselines, which provided greater numerical space for improvement. At the same time, their mobility declines less sharply with maternal education, reflecting the community's persistence in educational advancement despite structural disadvantages. This pattern suggests that educated Muslim mothers may be somewhat more effective at transmitting educational advantages to their daughters.

These findings demonstrate that Kerala's educational expansion has been both inclusive and uneven and portrays a pattern of advancement under constraint. Muslim women have leveraged expanded opportunities effectively, yet structural barriers—such as limited access to higher-level institutions and persistent educational constraints—continue to shape their outcomes. The significant negative effect of self-reported educational barriers underscores that obstacles—such as financial hardship or social norms—still restrict women's educational advancement, independent of parental education.

The policy implications are substantial and dual-pronged. First, addressing the historical educational deficit among Muslim mothers remains paramount. Investments in adult literacy programs and women's education initiatives could help elevate the starting platform for future generations. Second, the persistent negative effect of educational barriers underscores the need for robust, accessible student support systems—including financial aid, counseling services, and academic remediation—to help all students overcome obstacles during their educational journeys. Kerala's experience demonstrates that social inclusion through education is possible, but achieving full equality requires removing the remaining structural barriers that constrain the mobility of those starting from lower baselines.

5.12 Perceived Intergenerational Educational Mobility

5.12.1 Introduction

A comprehensive understanding of intergenerational mobility must extend beyond objective metrics to encompass the subjective perceptions of individuals (Houle, 2011). The previous sections of this chapter have rigorously quantified the level and determinants of objective educational mobility. In addition to the objective indicators of intergenerational educational mobility (transition matrices, mobility indices, the educational step-difference variable, mobility intensity), it is analytically useful to capture how women perceive their educational position relative to their mothers. Objective mobility tells us what actually changed

in years or levels; perceived mobility tells us what respondents think changed in terms of access, quality, support, barriers, and educational returns. To capture this crucial dimension, this section reports the development, validation, and comparative analysis of the Perceived Intergenerational Educational Mobility (PIEM) scale, which provides a subjective assessment of educational progress. Subjective assessments are critical, as they are powerful determinants of future aspirations, social and political attitudes, and psychological well-being (Gugushvili, 2016). A significant disconnect between objectively demonstrated progress and subjective perception can signal unmet expectations, the use of unfavorable social reference points, or the persistent psychological weight of historical disadvantage (Kraus & Tan, 2015).

This section serves three primary aims. First, it documents the development and psychometric validation of the PIEM scale. Second, it compares perceived mobility scores across religious groups using appropriate non-parametric methods. Third, and most importantly, it confronts and provides a logical interpretation for a striking paradox: despite demonstrating greater objective intergenerational mobility, Muslim women report significantly lower perceived mobility. This analysis provides a crucial layer of subjective experience, enriching the narrative of educational advancement in Kerala by exploring the intersection of objective reality and lived experience.

5.12.2 Scale Development and Psychometric Validation

To capture the subjective dimension of educational mobility, a multi-step scale development procedure was followed. An initial set of items was drafted to reflect key comparative domains, including access to opportunities, quality of schooling, barriers faced, family support, and educational outcomes. Through expert review and pilot testing, this pool was refined to a five-item PIEM scale. All items were framed explicitly in comparative terms (daughter versus mother) and rated on a 5-point Likert scale (0 = strongly disagree to 4 = strongly agree). In combination, the items tap perceived advantage in terms of access, quality, barriers, support, and outcomes,

consistent with the underlying construct of perceived intergenerational educational mobility (Table 5.26).

5.12.2.1 Exploratory Factor Analysis (EFA)

An exploratory factor analysis (EFA) was conducted on the full sample ($N = 704$) to examine the latent structure of the five Likert-type items. Maximum-likelihood extraction was used for consistency with the subsequent confirmatory factor analysis. Sampling adequacy was high, as indicated by a Kaiser–Meyer–Olkin (KMO) statistic of .885, and Bartlett’s test of sphericity was statistically significant, $\chi^2 (10) = 3,064.39, p < .001$, confirming that the data were suitable for factor analysis.

Table 5.26

EFA Results for the Perceived Intergenerational Educational Mobility Scale ($N = 704$)

Sl. No.	Item Statement	Item Code	Loading	Communality
1	I had greater access to educational opportunities than my mother	EDM1	.918	.843
2	The quality of education I received was better than what my mother received	EDM2	.933	.870
3	I faced fewer barriers to accessing education than my mother faced.	EDM3	.760	.577
4	My family supported my education more than my mother’s family supported hers.	EDM4	.877	.770
5	My education has provided me with better opportunities than my mother’s education provided her.	EDM5	.803	.644
	Eigenvalue	3.96		
	% Variance explained	79.12		

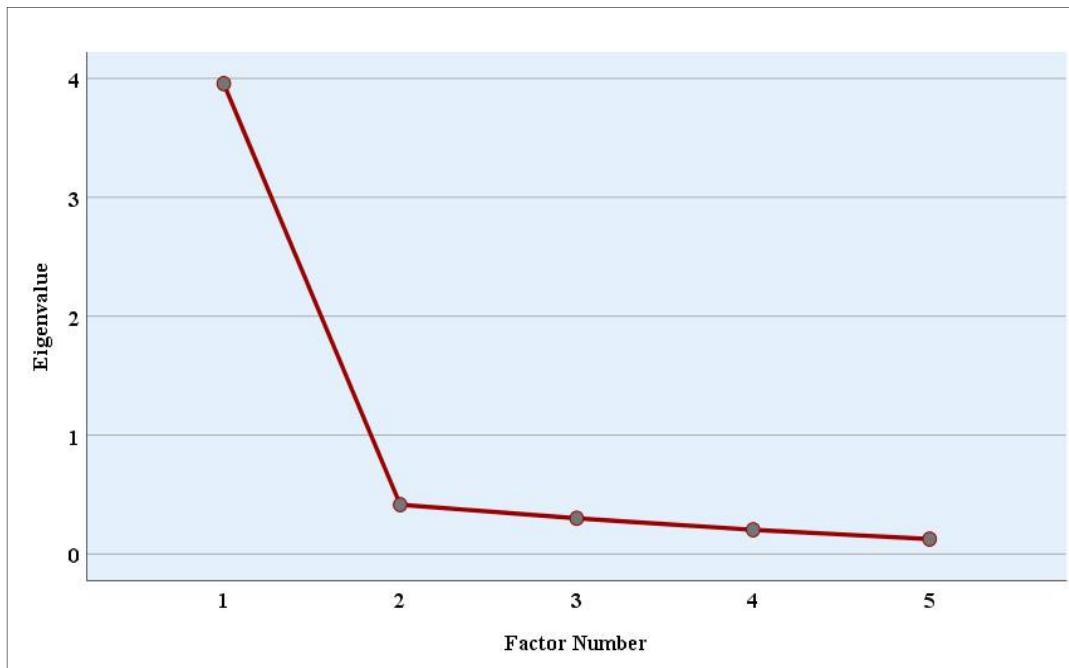
Note. Extraction Method: Maximum Likelihood.

The initial eigenvalues and the scree plot (Figure 5.9) clearly indicated a one-factor solution. The single factor had an eigenvalue of 3.96, accounting for 79.12% of the total variance, confirming the scale’s unidimensionality. As shown in Table

5.26, all five items loaded strongly on a single factor ($\lambda = .76-.93$). The scale demonstrated excellent internal consistency (Cronbach's $\alpha = .931$).

Figure 5.9

Scree Plot for Determining the Number of Factors to be Retained



Source: Primary survey data, 2025.

5.12.2.2 Confirmatory Factor Analysis (CFA)

A single-factor confirmatory factor analysis (CFA) was then carried out in AMOS using maximum-likelihood estimation to test the hypothesised one-factor structure and to establish convergent validity. All five items were specified as reflective indicators of the latent factor PIEM.

Fit indices (Table 5.27) indicated an excellent fit to the data, with the chi-square–degrees-of-freedom ratio, CFI, SRMR, and RMSEA all within conventional cut-offs (Hu & Bentler, 1999).

Table 5.27

Model Fit Indices for the Single-Factor PIEM Measurement Model

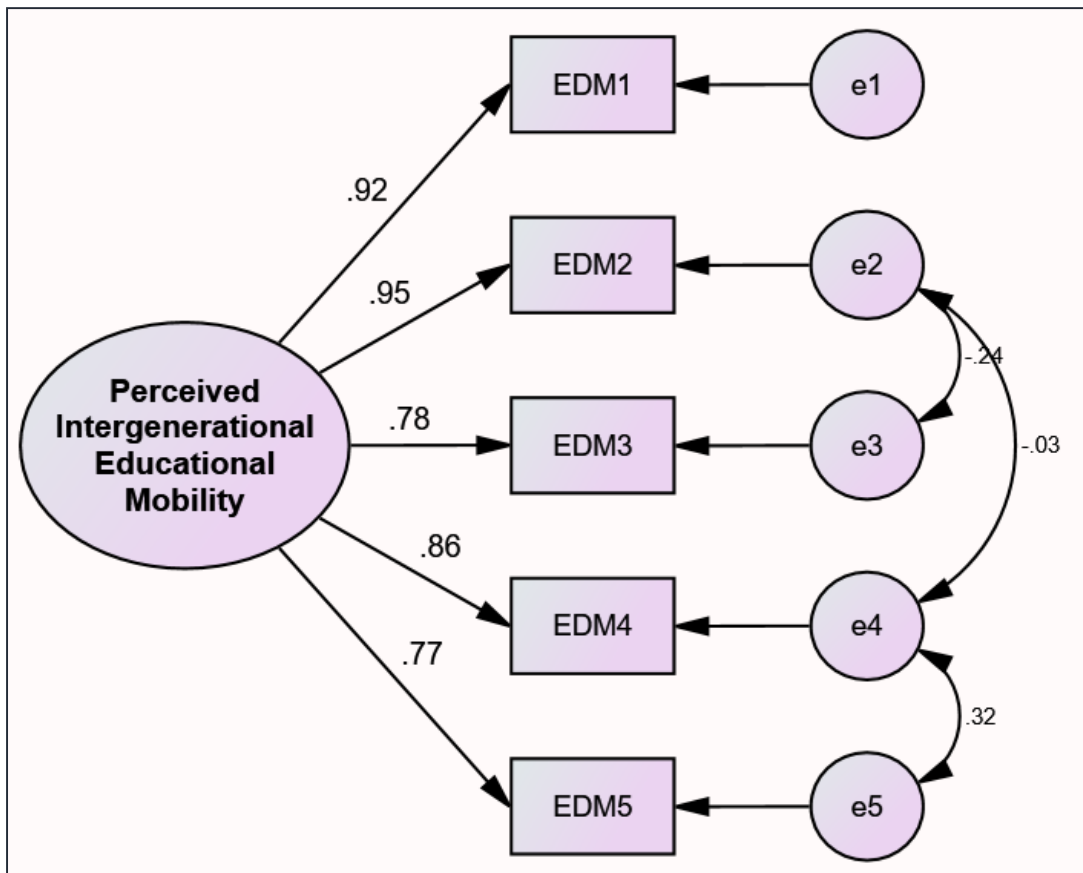
Sl. No.	Measure	Estimate	Threshold*	Interpretation
1	CMIN	2.608	--	--
2	DF	2.000	--	--
3	CMIN/DF	1.304	Between 1 and 3	Excellent
4	CFI	1.000	>0.95	Excellent
5	SRMR	0.005	<0.08	Excellent
6	RMSEA	0.021	<0.06	Excellent
7	PClose	0.715	>0.05	Excellent

Note. CMIN/DF = Chi-square/degrees of freedom ratio; CFI = Comparative Fit Index; SRMR = Standardised Root Mean Residual; RMSEA = Root Mean Square Error of Approximation.

*Thresholds are based on guidelines from Hu and Bentler (1999).

Figure 5.10

The Estimated Measurement (CFA) Model of the Single-Factor PIEM Scale



Source: Constructed from the primary survey data (2025)

As reported in Table 5.28, all factor standardised loadings were high and statistically significant ($p < .001$). The average variance extracted ($AVE = .74$) and composite reliability ($CR = .93$) comfortably exceeded recommended thresholds (Fornell & Larcker, 1981), supporting convergent validity and internal consistency. In combination with the EFA results, this confirms that the PIEM items form a coherent, unidimensional scale of perceived intergenerational educational mobility.

Table 5.28

CFA Results for the Perceived Educational Mobility Factor (N = 704)

Indicator	Unstandardised Factor Loadings	Standardised Factor Loadings	SE	CR	p
EDM1	1.000	.915	—	—	< .001
EDM2	1.057	.950	.027	39.53	< .001
EDM3	.976	.780	.037	26.45	< .001
EDM4	1.014	.861	.031	32.31	< .001
EDM5	.974	.775	.035	27.64	< .001
Composite reliability (CR)		.933			
Average variance extracted (AVE)		.738			

Note. Estimation method = maximum likelihood.

5.12.2.3 Measurement Invariance Across Religious Groups

Before comparing perceived mobility across religious groups, it was necessary to ensure that the PIEM scale functions equivalently for Muslim and non-Muslim women. Measurement invariance was therefore assessed using multi-group CFA, following the standard sequence of configural, metric, and scalar invariance (Chen, 2007; Putnick & Bornstein, 2016). Results are reported in Table 5.29.

Table 5.29

Measurement Invariance Testing Across Religious Groups

Model	Description	χ^2	df	p	CFI	RMSEA [90% CI]	Δ CFI	Δ RMSEA
A	Configural	5.216	4	.266	.999	.022 [.000, .079]	—	—
B	Metric	9.683	8	.288	.997	.020 [.000, .062]	-.002	-.002
C	Scalar	20.541	12	.058	.989	.026 [.000, .051]	-.008	+.006

Note. Models estimated using multi-group CFA with maximum likelihood. Changes in fit are computed relative to the less constrained model. Δ CFI values greater than $-.010$ and Δ RMSEA values smaller than $.015$ are typically taken as evidence that invariance holds (Chen, 2007; Cheung & Rensvold, 2002).

First, the configural model (Model A), which imposed the same one-factor structure across groups but no parameter constraints, demonstrated excellent fit ($\chi^2(4) = 5.22, p = .266$; CFI = .999, RMSEA = .022). This confirmed that the single-factor structure is applicable and fits the data well in both groups.

Second, the metric invariance model (Model B), which constrained all factor loadings to be equal across groups, was tested. The change in fit from the configural model was negligible ($\Delta\text{CFI} = -.002$; $\Delta\text{RMSEA} = -.002$). The change in CFI was well below the commonly accepted threshold of $\Delta\text{CFI} < -.010$ (Cheung & Rensvold, 2002), confirming metric invariance. This confirms that the items relate to the latent construct with the same strength in both groups, ensuring the "unit of measurement" is equivalent.

Finally, the scalar invariance model (Model C), which additionally constrained all item intercepts to be equal, was tested. The change in fit from the metric model was also minimal ($\Delta\text{CFI} = -.008$; $\Delta\text{RMSEA} = .004$), supporting scalar invariance. This indicates that the origin point (zero-point) of the latent variable is the same across groups. The establishment of scalar invariance allows for a meaningful and unbiased comparison of the latent factor means between Muslim and Non-Muslim women, as differences in observed scores can be confidently attributed to true differences in perceived mobility rather than measurement bias.

By establishing configural, metric, and scalar invariance, the analysis confirms that differences in PIEM scores between Muslims and non-Muslims reflect genuine differences in perceived intergenerational educational mobility rather than artefacts of measurement non-equivalence.

5.12.3 Comparison of Perceived Mobility Across Religious Groups

After validation, a composite PIEM score was computed for each respondent as the mean of the five items. Table 5.30 presents descriptive statistics by religious group. On average, both Muslim and non-Muslim women reported scores above the neutral midpoint of the scale, indicating that they generally perceived themselves as having enjoyed better educational opportunities and outcomes than their mothers.

Non-Muslim women, however, reported somewhat higher perceived mobility, with a higher median and less dispersion. Both distributions are negatively skewed, reflecting a concentration of responses toward the “agree” end of the scale; kurtosis is especially pronounced among non-Muslim women.

Table 5.30

Descriptive Statistics of the PIEM by Religion

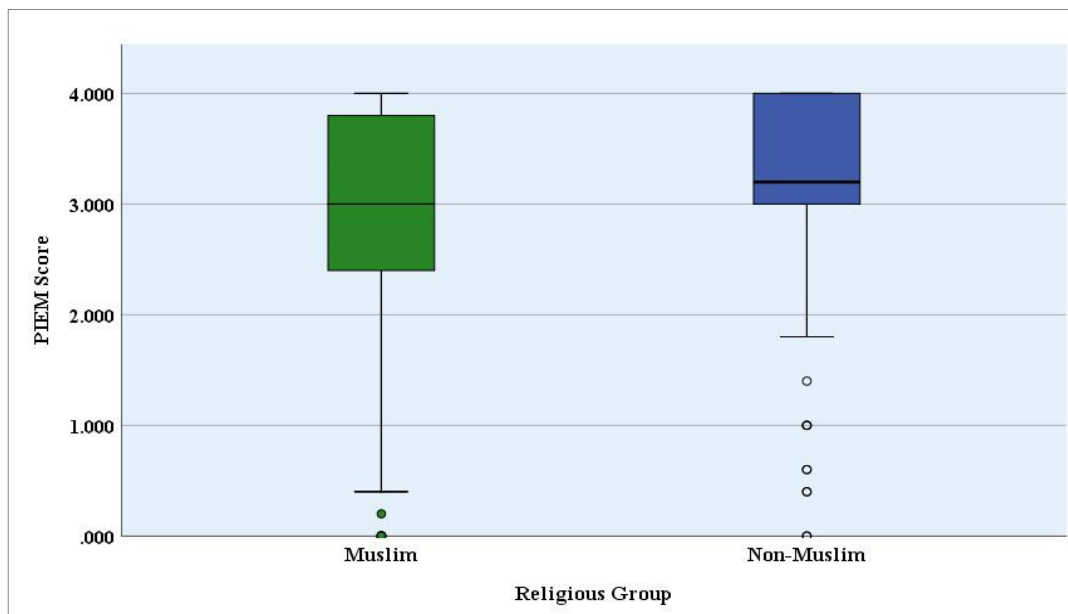
Sl. No.	Religious Group	Mean	SD	Skewness	Kurtosis	Median	N
1	Muslim	2.87	0.99	-0.97	0.65	3.00	392
2	Non-Muslim	3.25	0.76	-1.37	3.16	3.20	312
	Total	3.04	0.92	-1.18	1.49	3.00	704

Source: Primary survey data (2025).

The box plot (Figure 5.11) illustrates these differences graphically, showing a higher central tendency and lower dispersion for non-Muslim women, along with some outliers in both groups. Kernel density estimates (Figure 5.12) indicate that, although both groups’ scores cluster towards the upper end of the scale, the density for non-Muslim women is more peaked at higher levels of perceived mobility.

Figure 5.11

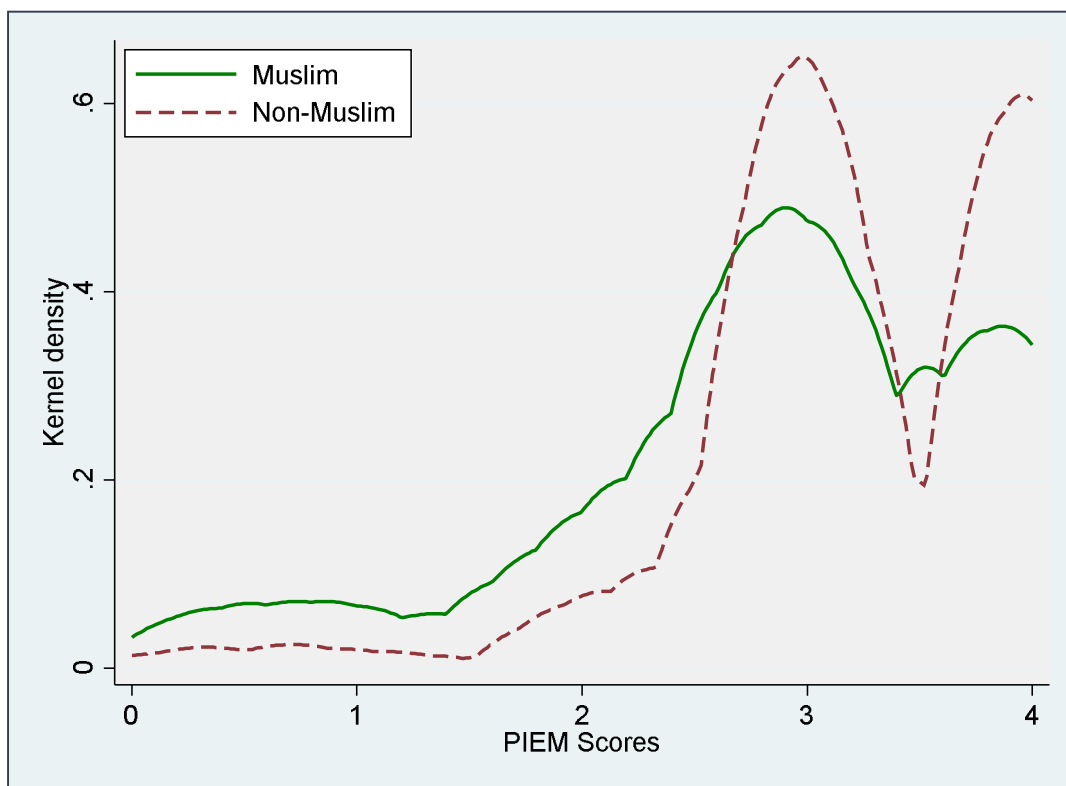
Box Plot of the PIEM by the Religious Group



Source: Primary survey data (2025).

Figure 5.12

Kernel Density Plot of PIEM by Religious Group



Source: Constructed from primary survey data (2025).

Shapiro-Wilk tests statistically confirmed significant deviations from normality within both Muslim ($W = 0.889, p < .001$) and non-Muslim ($W = 0.825, p < .001$) groups (Table 5.31). Consequently, non-parametric tests were used for inferential analyses.

To assess whether women, overall, perceive upward educational mobility, one-sample Wilcoxon signed-rank tests were conducted against the neutral median value of 2.0 (representing “neither agree nor disagree” on the 5-point Likert scale). As shown in Table 5.31, both Muslim ($Z = 12.58, p < .001$) and non-Muslim ($Z = 14.22, p < .001$) women reported perceived mobility scores significantly above the neutral point, confirming that both groups subjectively felt they had achieved educational advancement relative to their mothers.

To compare perceived mobility between the two religious groups, the Mann–Whitney *U* test was conducted. The results (Table 5.32) showed that non-Muslim women reported significantly higher perceived intergenerational educational mobility than Muslim women, $U = 47,355.50$, $Z = -5.24$, $p < .001$. The effect size was small to moderate (Cliff's $\delta = 0.230$, $r = .198$), indicating that religious affiliation meaningfully influences how women perceive their educational progress relative to their mothers. This difference reinforces the finding from the median comparison that perceived mobility is significantly lower for Muslim women.

Table 5.31

Normality and One-Sample Wilcoxon Signed Rank Test Results for PIEM by Religious Group

Sl. No.	Religious Group	Normality Tests (Shapiro–Wilk)			One-Sample Wilcoxon Signed Rank Test Results	
		W	df	p	Z	p
1	Muslim	0.889	392	< .001	12.58	< .001
2	Non-Muslim	0.825	312	< .001	14.22	< .001
	Total	0.161	704	< .001	19.00	< .001

Note. The Shapiro–Wilk test assesses the assumption of normality for PIES scores within each religious group. The Wilcoxon signed-rank test was performed against a hypothetical median of 2.0.

Source: Computed from primary survey data (2025).

Table 5.32

*Mann–Whitney *U* Test Comparing PIEM by Religion (Muslim vs. Non-Muslim)*

Sl. No.	Statistic	Muslim	Non-Muslim	Value
1	<i>n</i>	392	312	704 (total)
2	Mean rank	317.30	396.72	—
3	Mann–Whitney <i>U</i>	—	—	47,355
4	Standardised <i>Z</i>	—	—	–5.24
5	<i>p</i> (two-tailed)	—	—	< .001
6	Cliff's δ	—	—	.23
7	Non-parametric <i>r</i>	—	—	.198

Note. Effect sizes were computed as follows: for the Mann–Whitney test, $r = \frac{|Z|}{\sqrt{n}}$, where *Z* is the standardized test statistic from the Mann–Whitney *U* test, and *n* is the total sample size. Cliff's δ is defined as $\delta = \Pr(X > Y) - \Pr(X < Y)$ (ties contribute 0), where *X* and *Y* are ESD values from the two groups. Equivalently, δ can be computed from the Mann–Whitney statistic for the focal group as $\delta = \frac{2U_1}{n_1 n_2} - 1$, where $U_1 = R_1 - \frac{n_1(n_1+1)}{2}$, *R*₁ is the sum of ranks in group 1, and *n*₁, *n*₂ are group sizes.

Source: Primary survey data (2025).

In summary, both Muslim and non-Muslim women *feel* that they have moved upward educationally relative to their mothers, but non-Muslim women report a distinctly higher level of perceived mobility. This pattern stands in contrast to the earlier finding that Muslim women exhibit greater *objective* intergenerational gains in years of schooling, setting up a substantive and theoretically rich discrepancy between objective and subjective mobility.

5.12.4 Reconciling Objective and Subjective Mobility Patterns

The juxtaposition of earlier sections and the PIEM results reveals a striking tension. Objectively, Muslim women have experienced steeper intergenerational educational gains than non-Muslim women, as evidenced by larger step differences, higher mobility intensity, and greater average distance moved in the transition matrices. Subjectively, however, Muslim women report lower perceived educational mobility than non-Muslim women. This objective–subjective divergence can be understood by considering how individuals evaluate their status and how structural constraints shape the meaning of mobility.

A first lens is reference group theory (Festinger, 1954). People rarely evaluate their situation in absolute terms; instead, they compare themselves to salient others. Objectively, Muslim women have made large gains relative to their mothers, especially from very low starting points, and in that intergenerational sense, their mobility is impressive. Subjectively, however, their reference group is unlikely to be limited to their maternal generation. Daily experience in workplaces, neighbourhoods, and institutions brings Muslim women into lateral comparison with non-Muslim peers who, on average, still enjoy higher absolute educational levels and smoother transitions into prestigious courses and occupations. When the comparison shifts from "where I came from" to "where others like me are now," the persistent gap can dampen the sense of achievement, even when the absolute distance travelled is large.

A second lens concerns the aspiration–achievement gap (Appadurai, 2004). Educational expansion in Kerala has not only opened doors but also raised

expectations. For many Muslim women, access to higher secondary and tertiary education may have generated aspirations for elite degrees, professional careers, and forms of recognition that go beyond simple completion. When these aspirations collide with structural barriers—such as labour market discrimination, weaker networks, or constraints documented elsewhere in the thesis—the resulting frustration can overshadow the satisfaction of having surpassed a low parental baseline. The focus shifts from "how far I have come" to "how far I still fall short of what feels possible or deserved."

A third consideration is the awareness of structural barriers. Earlier parts of the chapter and the decomposition analysis showed that differences in outcomes are not explained solely by differences in background characteristics. This perception is empirically grounded; the Blinder–Oaxaca decomposition revealed a significant 'unexplained' component, indicating that Muslim women receive lower returns to similar educational endowments, likely due to the very structural barriers that fuel their subjective assessments. In addition, qualitative evidence in the thesis documents the financial constraints, restrictive norms, and institutional hurdles that Muslim women report facing. Such experiences can make education feel like a hard-fought, precarious achievement rather than a smooth or guaranteed pathway. This awareness naturally colours retrospective assessments: mobility achieved through struggle, against the grain, may feel less like "being mobile" and more like "still being held back."

Viewed together, these mechanisms suggest that the lower PIEM scores among Muslim women do not contradict their documented objective progress. Rather, they reveal that subjective mobility is shaped by relative comparisons, rising aspirations, and perceptions of fairness in how opportunities and returns are distributed. Muslim women have travelled a long objective distance from their mothers' generation, but when they look sideways at their peers and forward to unrealised aspirations, their sense of having "moved up" remains more muted than the numbers alone would suggest.

5.12.5 Conclusion

This section added a crucial dimension to the analysis of intergenerational educational mobility among women in Kerala. The PIEM scale, developed through careful item construction and validated using EFA, CFA, and multi-group measurement invariance tests, provides a reliable and comparable measure of perceived educational progress for Muslim and non-Muslim women.

The empirical results show that women in both communities clearly perceive themselves as having advanced educationally relative to their mothers. At the same time, non-Muslim women report higher perceived mobility than Muslim women, even though earlier sections of the chapter demonstrated that Muslim women have, on average, made larger objective educational gains from a lower starting point.

This objective–subjective divergence is not a contradiction but a signal. It suggests that Kerala’s achievements in expanding educational access and raising attainment have not fully erased feelings of relative disadvantage among Muslim women. Policies aimed at promoting educational equity, therefore, need to consider not only access, attainment, and intergenerational gains but also the psychosocial and structural conditions under which these gains are realised. Aligning objective mobility with a stronger subjective sense of fair opportunity and recognition remains an important challenge for future policy and research.

5.13 Conclusion

This chapter provided a comprehensive comparative analysis of intergenerational educational mobility among Muslim and non-Muslim women in Kerala, thereby addressing the study’s third objective, namely to assess and compare the levels, patterns, and determinants of intergenerational educational mobility between the two groups. The analysis proceeded from descriptive transition matrices and summary mobility indices to regression models, Blinder–Oaxaca decompositions, and a psychometrically validated measure of perceived intergenerational educational mobility. Collectively, the findings showed that Kerala’s educational expansion has generated substantial upward mobility for women across religious groups, but has

not fully eliminated differences in the levels, patterns, and determinants of that mobility.

The findings on levels of mobility consistently showed that women in both communities had experienced substantial absolute upward educational mobility relative to their mothers, particularly among women whose mothers had very little or no schooling. However, this upward movement was not evenly distributed. Across all measures of absolute change—whether the share of women who moved up, the number of educational steps they climbed, or the additional years of schooling they gained—Muslim women recorded larger intergenerational gains than non-Muslim women. This steeper upward climb reflected the much lower maternal educational baseline in Muslim households, which created more scope for advancement. At the same time, non-Muslim women retained higher absolute levels of educational attainment in both generations and were more strongly clustered in the highest schooling categories. Thus, when mobility was measured in relative or incremental terms, Muslims were ahead; when measured in absolute attainment, non-Muslims continued to hold the advantage.

The patterns of mobility further clarified this contrast. The analysis showed that upward movement from low educational origins was widespread across groups, while movement downwards was exceptional. Transition matrices revealed a broadly similar structure of upward flows from low origins in both communities. However, they showed a denser concentration of daughters in the highest educational categories among non-Muslims and a relative underrepresentation of Muslim women at the very top. Ordinal association measures indicated strong intergenerational persistence in both communities, with slightly stronger persistence among non-Muslims. Direction-sensitive mobility indices confirmed that almost all normalised movement was upward, with negligible downward distance, but also indicated that non-Muslim women's mobility was more heavily concentrated at the upper end of the distribution. Muslim women, in contrast, displayed steeper upward movement across several adjacent levels, especially from low maternal schooling, yet were less likely to reach or consolidate at the very top. Analysis of mobility intensity

reinforced this picture: mobility intensity (years of schooling gained) was higher for Muslim women.

The determinants of mobility helped to explain why these differences persisted. Regression models showed that mothers' schooling had a strong positive association with daughters' years of schooling in both communities, with slightly stronger intergenerational transmission among non-Muslims, reflecting the consolidation of high attainment at the top. Additional covariates—such as fathers' education, household economic position, location, and reported educational barriers—also mattered, but did not fully close the religious gap. The Blinder–Oaxaca decomposition results revealed that the gap in final attainment was primarily due to differences in endowments—principally lower maternal and paternal schooling and a higher prevalence of schooling barriers among Muslims. A nontrivial portion of the gap, however, was attributed to differences in coefficients, indicating that Muslim women received lower returns from similar familial resources, a sign of underlying structural inequality. These findings suggested that even when Muslim and non-Muslim women possessed comparable background resources, Muslim women faced greater structural constraints in converting these advantages into higher levels of educational attainment.

Finally, the chapter introduced a subjective dimension through the PIEM scale. The perceived mobility analysis demonstrated that women in both communities viewed themselves as having progressed beyond their mothers, but that Muslim women reported lower perceived intergenerational educational mobility than non-Muslim women, despite having achieved larger objective gains from a lower starting point. The divergence between objective and subjective mobility among Muslims was interpreted through reference-group comparisons, aspiration–achievement gaps, and awareness of structural barriers, suggesting that Muslim women's subjective evaluations were shaped not only by how far they had moved from their mothers but also by how far they remained from their non-Muslim peers and from their own rising aspirations.

Taken together, the evidence showed that Kerala's educational expansion had generated broad-based upward mobility for Muslim and non-Muslim women alike, yet it had not eliminated religious differentials in the distribution and experience of that mobility. Muslim women had made remarkable intergenerational advances from historically disadvantaged starting points and now exhibited higher levels of mobility in relative terms. Non-Muslim women, however, continued to enjoy higher absolute educational attainment and stronger intergenerational continuity at the top of the distribution. The determinants analysis indicated that these differences were rooted less in individual effort and more in enduring structural inequalities in both endowments and returns. The mobility intensity model further showed that these structural differences operated not only at the level of average outcomes but also in the rate at which potential gains were realised. Subjective evidence from the perceived mobility scale underscored that Muslim women were acutely aware of these constraints: large absolute gains coexisted with a more muted sense of having "moved up," reflecting comparisons with better-placed peers and unresolved concerns about fairness in opportunities and outcomes. In addressing the third objective, this chapter therefore concluded that Kerala's educational regime was both inclusive and stratified: it delivered broad-based upward mobility across religious groups while continuing to reproduce a moderate but meaningful educational advantage for non-Muslim women in both objective attainment and subjective experience.

These findings have important policy implications for promoting more equitable intergenerational mobility in Kerala. To sustain mobility gains among Muslim women and close the gap at the highest levels, policies must focus simultaneously on resources, barriers, and returns. First, continued investment in girls' and women's schooling, with a particular focus on raising maternal education in communities that remain at the lower end of the distribution, is essential for consolidating intergenerational gains. Second, targeted measures are needed to reduce the endowment gap between Muslim and non-Muslim households by addressing financial constraints, information deficits, and school-level barriers that

disproportionately affect Muslim girls—for example, through scholarships, mentoring, bridge courses, support for first-generation learners, and stronger school–community linkages. Third, policies should aim to equalise the returns to similar educational endowments by tackling discriminatory practices, improving the quality and recognition of institutions attended by Muslim women, and supporting smooth transitions into higher education and skilled employment. Finally, because subjective perceptions of mobility and fairness matter in their own right, interventions that enhance Muslim women’s sense of inclusion—such as counselling, peer networks, and visible representation in elite educational tracks—are important complements to material support. Only by acting on both endowments and returns, and by recognising the subjective dimension of mobility, can Kerala move from closing quantitative schooling gaps to ensuring that women from all religious communities experience education as a secure and equitable pathway to wider social and economic mobility.

Chapter 6

INTERGENERATIONAL OCCUPATIONAL MOBILITY AMONG MUSLIM AND NON-MUSLIM WOMEN IN KERALA: A COMPARATIVE ANALYSIS

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Chapter 6

INTERGENERATIONAL OCCUPATIONAL MOBILITY AMONG MUSLIM AND NON-MUSLIM WOMEN IN KERALA: A COMPARATIVE ANALYSIS

6.1 Introduction

Intergenerational occupational mobility, defined as the movement of individuals across occupational strata relative to their parents, is a central indicator of how far societies enable individuals to move beyond the social and economic positions into which they are born (Breen, 2004; Erikson & Goldthorpe, 1992). In the context of India, and particularly in Kerala—a state celebrated for its paradox of high human development amidst modest economic growth—understanding these gendered and communal dimensions of mobility is essential (Drèze & Sen, 2013). While Kerala's achievements in female education and health are well-documented, its record on translating these gains into equitable and high-quality labour market outcomes for all women, across religious communities, remains an underexplored critical area of inquiry (Kodoth & Eapen, 2005). Analysing occupational mobility patterns among women across different religious communities offers critical insights into the state's social equity and a direct lens on whether gains in capabilities translate into better work, higher status, and improved economic security across generations.

While extensive research exists on educational mobility in India (Azam & Bhatt, 2015), less attention has been paid to occupational mobility, particularly among women. This gap is especially pronounced in studies comparing religious communities within Kerala. Muslim women in Kerala face unique challenges, often characterized by lower labour force participation rates and higher educational constraints (Hasan & Menon, 2004). However, understanding whether these initial disadvantages translate into limited occupational mobility across generations remains an open question requiring empirical investigation.

The subjective dimension of mobility is equally important. Objective measures of occupational advancement may not align with women's own perceptions of their progress (Gugushvili, 2016). Women from different religious backgrounds might experience and interpret mobility differently based on community-specific expectations, reference groups, and quality of employment. Therefore, a comprehensive analysis must integrate both objective mobility patterns and subjective perceptions to understand the lived experience of occupational change.

This chapter addresses these gaps through a comparative analysis of intergenerational occupational mobility among Muslim and non-Muslim women in Kerala. Specifically, it aims to: (1) compare the extent and patterns of occupational mobility between these groups; (2) identify key determinants that enable or constrain occupational advancement; and (3) examine whether subjective perceptions of mobility align with objective measures. By addressing these questions, this chapter contributes to understanding how gender, religion, and regional development intersect to shape women's occupational trajectories across generations.

The remainder of the chapter is structured as follows. Section 6.2 outlines the methodological framework, detailing the occupational coding scheme, mobility measures, and analytical techniques. Section 6.3 presents the foundational evidence through intergenerational occupational transition matrices and associated tests of persistence. Section 6.4 summarizes the composition of directional mobility (downward, immobile, upward). Section 6.5 employs summary mobility indices to quantify the magnitude and net direction of occupational mobility. Section 6.6 examines the distribution of the occupational step-difference (OSD) by religious group. Section 6.7 models the determinants of mobility, analysing both direction (via multinomial logistic regression) and magnitude (via ordinary least squares regression). Section 6.8 explores the subjective dimension through an assessment of perceived intergenerational occupational mobility. Finally, Section 6.9 concludes the chapter by synthesizing the major findings and discussing their broader implications.

6.2 Methodological Framework for Occupational Mobility

This chapter adopts a comprehensive, multi-method analytical framework to examine intergenerational occupational mobility, combining descriptive, inferential, and multivariate approaches. The empirical strategy follows established approaches in the intergenerational mobility literature while adapting to the institutional structure of Kerala's labour market and the nature of the available data (Azam & Bhatt, 2015; Black & Devereux, 2011; Hout, 2018). By integrating objective and subjective measures of mobility, the framework allows for a comprehensive assessment of occupational persistence, directional movement, and perceived advancement across generations.

The analysis is based on cross-sectional survey data collected from 704 women aged 25–54 years, including 392 Muslim and 312 non-Muslim respondents. This age range is chosen to ensure that most respondents have completed formal education and entered relatively stable occupational positions, thereby permitting meaningful intergenerational comparison between daughters and their mothers.

The analytical sample varies across components of the chapter. Descriptive analyses of intergenerational occupational mobility—including transition matrices, mobility indices, and occupational step-difference summaries—are based on the full eligible sample of women for whom both maternal and daughter occupational information is available ($N = 704$). In contrast, the multivariate regression analyses (multinomial logistic regression and OLS models) are estimated using complete-case observations only, resulting in a reduced analytic sample ($N = 645$). This reduction arises from missing values on one or more covariates included in the regression models. Listwise deletion is adopted to ensure internal consistency across model specifications, and all inferential conclusions are therefore conditional on the regression sample.

6.2.1 Occupational Classification and Coding

To enable a rigorous quantitative analysis of mobility, occupations were classified into a hierarchical schema reflecting both skill level and socioeconomic

status. The raw occupational data for both mothers and daughters were mapped onto a six-category ordinal scale. This classification is designed to capture the structural hierarchy of the labor market in Kerala, ranging from exclusion from the workforce to high-status professional roles.

The final coding scheme used for the analysis is as follows: 0 represents No Paid Occupation, capturing those who are not participating in the labor force; 1 denotes Unskilled or Agricultural Labour, reflecting manual and irregular work; 2 represents Skilled Labour or Informal Self-Employment, covering semi-skilled trades and small-scale autonomous work; 3 includes Clerical or Administrative Work, representing lower-tier formal employment; 4 comprises Teaching, Healthcare, or Skilled Self-Employment, capturing standard professional roles; and 5 denotes Entrepreneur or Higher Professional Roles, representing the highest tier of occupational status. This ordinal ranking allows for the measurement of both the direction (upward or downward) and the magnitude (distance traveled) of intergenerational movement.

These six categories are ordered to reflect increasing levels of skill, autonomy, earnings, and social prestige. Using the same coding scheme for both mothers and daughters ensures that intergenerational comparisons are meaningful. The inclusion of a separate category for “no paid occupation” is particularly important in the Kerala context, where many mothers—especially in older cohorts and within Muslim communities—were economically inactive, and where daughters’ entry into paid work often itself represents a significant upward move.

6.2.2 Measures of Intergenerational Occupational Mobility

Intergenerational occupational mobility is operationalized using multiple complementary indicators because no single statistic fully captures mobility processes, and these measures are consistent with established approaches in the economics and sociology of mobility (Blanden, 2013; Jäntti & Jenkins, 2015).

The core of the analysis is a set of 6×6 intergenerational transition matrices constructed separately for Muslim women, non-Muslim women, and the pooled sample. In each matrix, rows represent mothers’ occupational category (origin), and

columns represent daughters' occupational category (destination). Row percentages describe, for a given maternal category, how daughters are distributed across the six occupational levels. The diagonal cells of the matrix indicate intergenerational occupational persistence (immobility), cells above the diagonal represent upward mobility, and cells below represent downward mobility. These matrices provide a detailed descriptive map of occupational movement and enable visual comparison of mobility regimes across religious groups (Bartholomew, 1973; Shorrocks, 1978).

To summarise these transitions in a simpler form, the detailed matrix data are aggregated into three broad directional categories: downward mobility (daughter's status < mother's status), immobility (daughter's status = mother's status), and upward mobility (daughter's status > mother's status). This trichotomous classification of mobility type is used to compare the distribution of downward, immobile, and upward outcomes between Muslim and non-Muslim women and to serve as the dependent variable in the multinomial logistic regression.

A more fine-grained measure, the Occupational Step-Difference (OSD), is derived for each mother–daughter pair by subtracting the mother's occupational code from the daughter's code ($OSD = \text{daughter's code} - \text{mother's code}$). This ordered step-distance measure creates an 11-point scale (from -5 to +5) that quantifies the exact magnitude and direction of mobility, where negative values indicate downward mobility, zero reflects intergenerational stability, and positive values indicate upward mobility. The OSD is used descriptively (e.g., to examine the distribution of mobility distances) and analytically to compute summary indices and regression analysis on a quasi-interval scale, consistent with mobility research that uses ordered distance measures to capture magnitude rather than only direction (Bartholomew, 1973; Fields & Ok, 1999; Hout, 1983). Additionally, summary mobility indices are calculated. The Bartholomew Index (B) provides an overall measure of the total normalised distance moved. Direction-sensitive indices (M^+ , M^-) decompose total movement into upward and downward components, allowing calculation of a net mobility score ($M^+ - M^-$) and the upward fraction of total movement ($M^+/(M^+ + M^-)$).

In addition to these objective measures, the chapter incorporates a subjective measure of intergenerational occupational mobility using the Perceived Intergenerational Occupational Mobility (PIOM) scale. It is a seven-item Likert-type instrument developed specifically for this study to assess how respondents evaluate their own occupational position relative to their mothers across domains such as access to work opportunities, occupational prestige, financial independence, socio-cultural barriers, working conditions, job security, and standard of living. Items are rated from 0 (strongly disagree) to 4 (strongly agree), and exploratory and confirmatory factor analyses confirm that the PIOM items form a highly reliable, unidimensional scale of perceived occupational mobility (DeVellis, 2017; Fabrigar & Wegener, 2012; Fornell & Larcker, 1981). Before group comparisons, measurement invariance across religious groups is established via multi-group CFA, ensuring any observed differences reflect genuine disparities in perception rather than measurement bias (Chen, 2007; Putnick & Bornstein, 2016). The PIOM score is analysed in Section 6.8 and used to compare perceived intergenerational occupational mobility between Muslim and non-Muslim women and to explore the divergence between objective and subjective mobility patterns.

6.2.3 Analytical Strategy

The analytical strategy integrates descriptive, bivariate, and multivariate techniques to evaluate mobility patterns and their determinants. The descriptive analysis centres on the 6×6 mother-daughter occupational transition matrices. The statistical significance of associations within these matrices is tested using Pearson's χ^2 , likelihood-ratio χ^2 , Fisher's exact, and linear-by-linear association tests, with Monte Carlo p-values reported to ensure robust inference for sparse tables (Agresti, 2013). The strength of ordinal association is quantified using Kendall's τ -b and Goodman-Kruskal's γ , which are standard measures of intergenerational persistence in ordered classifications (Breen & Jonsson, 2007; Goodman & Kruskal, 1979).

Group differences in directional mobility patterns are tested using chi-square tests with Cramer's V as a measure of effect size. For the continuous PIOM score,

group comparisons are conducted using independent-samples t-tests (with Cohen's *d* for effect size). For the ordered OSD variable, while treated as a quasi-interval in regression, group distributions are compared using the non-parametric Mann–Whitney U test (with Cliff's delta as effect size) to account for its discrete ordinal nature.

At the multivariate level, two complementary regression frameworks are employed. First, a multinomial logistic regression (MLR) model is used to estimate the determinants of mobility direction (downward, immobile, upward), with immobility as the base category, reporting relative risk ratios (RRR) and average marginal effects (AME). Second, an ordinary least squares (OLS) regression model is estimated with the OSD as a continuous dependent variable to identify the determinants of the magnitude of intergenerational occupational mobility. Both models control for religion, mother's occupational status, daughter's education, age, number of children, number of dependents, household size, and rural location. Model adequacy is rigorously tested for functional form, heteroscedasticity, multicollinearity, influential outliers, and normality of residuals.

Finally, the subjective PIOM scale is analysed using EFA and CFA procedures to establish its dimensionality, reliability, and construct validity. Before group comparisons, multi-group CFA is performed to establish measurement invariance across religious groups (configural, metric, and scalar) as per established guidelines (Chen, 2007; Cheung & Rensvold, 2002).

Together, this multi-method strategy enables a comprehensive analysis of the extent, patterns, and determinants of intergenerational occupational mobility, as well as the subjective experience of intergenerational occupational change.

6.3 Intergenerational Occupational Mobility Patterns: Evidence from Transition Matrices

Intergenerational transition matrices provide the empirical foundation for analysing occupational mobility, mapping how daughters' occupational positions compare with those of their mothers. In line with the broader mobility literature, the

matrices allow a distinction between absolute mobility, or the observed movements between origin and destination categories, and relative persistence, or the strength of the association between mothers' and daughters' positions in the occupational hierarchy (Erikson & Goldthorpe, 1992). This descriptive approach allows us to visualise how far daughters move away from, or remain close to, their mothers' occupational status.

In this study, mothers' and daughters' occupations are classified into six ordered categories, ranging from non-participation in paid work to high-status professional or entrepreneurial roles. The six categories are: (0) No paid occupation (non-participant in the labour market), (1) Unskilled or agricultural labour, (2) Skilled labour or informal self-employment, (3) Clerical or administrative work, (4) Teaching, healthcare, or skilled self-employment, and (5) Entrepreneur or higher professional roles. Students are excluded from the mobility analysis because they have not yet attained a stable occupational position; the focus is on intergenerational changes in labour-market insertion and occupational stratification.

This section examines intergenerational occupational transitions using 6×6 matrices for Muslim women, non-Muslim women, and the pooled sample (Tables 6.1–6.3). The matrices describe origin–destination movements across ordered occupational categories, providing a descriptive summary of upward mobility, downward mobility, and immobility. These descriptive patterns are complemented by chi-square tests and ordinal association measures, which evaluate the strength and direction of intergenerational occupational linkages.

6.3.1 Intergenerational Occupational Transition Patterns Across Religious Groups

Table 6.1 presents the intergenerational occupational transition matrix for Muslim women. Rows represent mothers' occupational status, and columns represent daughters' status. The most striking feature of the matrix is the strong persistence of non-participation in the labour market. Among mothers with no paid occupation, more than half of their daughters also remain outside the paid workforce,

indicating considerable intergenerational persistence at the baseline. At the same time, a sizeable minority of these daughters move into professional or respected service roles (teaching, healthcare, or skilled self-employment), with smaller fractions entering skilled or clerical work. In other words, the dominant pattern at the very bottom is continuity in labour-force non-participation, accompanied by a visible channel of upward movement into white-collar or respected service occupations for a minority.

Among daughters whose mothers were in unskilled or agricultural labour, the distribution is more dispersed. A segment remains in low-skilled or agricultural work, but others move into skilled informal activities or into the professional/service category, and some exit into non-participation. For mothers with skilled, clerical, or professional occupations, the matrices show mixed patterns: while there is some persistence along the diagonal (daughters occupying similar occupational categories as their mothers), there is also a noticeable flow into “No paid occupation”. For instance, where mothers were in teaching, healthcare, or skilled self-employment, a non-trivial share of daughters are found outside the labour market altogether. For mothers in entrepreneurial or higher professional roles, the small number of cases limits precision, but the distribution again suggests a substantial risk of downward movement into non-participation for daughters, alongside some persistence in professional/service occupations.

Taken together, the Muslim matrix reveals a dual pattern: on the one hand, there is clear evidence of upward mobility into professional and respected service roles from non-participation and low-skilled origins; on the other hand, there is also considerable downward movement from working mothers—especially those in higher-status occupations—into daughters’ non-participation in paid work. Upward and downward mobility thus coexist with strong persistence at the bottom.

Table 6.1*Intergenerational Occupational Transition Matrix — Muslim Women*

Daughter → Mother ↓	0: No Paid Occupation	1: Unskilled / Agricultural Labour	2: Skilled Labour/Informal Self-Employment	3: Clerical / Administrative Work	4: Teaching / Healthcare/ Skilled Self-Employment	5: Entrepreneur / Higher Professional Role	Row total (n)
0: No Paid Occupation	58.2% (188)	3.1% (10)	9.3% (30)	5.0% (16)	20.4% (66)	4.0% (13)	323
1: Unskilled/ Agricultural Labour	25.0% (2)	12.5% (1)	25.0% (2)	12.5% (1)	25.0% (2)	0.0% (0)	8
2: Skilled Labour/ Informal Self-Employment	0.0% (0)	0.0% (0)	66.7% (2)	0.0% (0)	33.3% (1)	0.0% (0)	3
3: Clerical / Administrative Work	23.1% (3)	7.7% (1)	0.0% (0)	7.7% (1)	61.5% (8)	0.0% (0)	13
4: Teaching / Healthcare / Skilled Self-Employment	23.1% (3)	0.0% (0)	7.7% (1)	23.1% (3)	38.5% (5)	7.7% (1)	13
5: Entrepreneur / Higher Professional Role	50.0% (2)	0.0% (0)	25.0% (1)	0.0% (0)	25.0% (1)	0.0% (0)	4
Column total (n)	198	12	36	21	83	14	364

Note. Rows represent mothers' occupations (origin), and columns represent daughters' occupations (destination). Cells show row percentages with counts in parentheses. Diagonal cells represent intergenerational immobility (persistence), cells to the right represent upward mobility, and cells to the left represent downward mobility.

Source: Primary survey data (2025).

Table 6.2 displays the corresponding occupational transition matrix for non-Muslim women. The overall structure bears similarities to the Muslim sample, particularly regarding the transmission of non-employment. As with Muslims, most mothers are located in the “No paid occupation” category, and more than half of their daughters also remain outside paid work. At the same time, a substantial portion of daughters move into professional or respected service occupations, with additional flows into skilled and clerical roles. Among daughters of mothers who were in unskilled or agricultural labour, the pattern is again mixed: some remain in similar low-skilled jobs, others move into professional/service roles, and some exit into non-participation.

For non-Muslim mothers occupying skilled, clerical, or professional positions, the transition patterns are similar in broad outline to those observed among Muslims, though with slightly stronger consolidation at the top. Daughters of mothers in teaching, healthcare, or skilled self-employment are more likely to remain in the higher-status segments of the occupational structure and somewhat less likely to fall back into non-participation, although some downward mobility into “No paid occupation” is still evident. For mothers in entrepreneurial or higher professional roles, the small cell sizes again caution against over-interpretation. However, the distribution suggests a combination of persistence in high-status positions, movement into professional/service occupations, and some downward shifts into non-participation.

Table 6.2*Intergenerational Occupational Transition Matrix — Non-Muslim Women*

Daughter → Mother ↓	0: No Paid Occupation	1: Unskilled / Agricultural Labour	2: Skilled Labour/Informal Self-Employment	3: Clerical / Administrative Work	4: Teaching / Healthcare/ Skilled Self- Employment	5: Entrepreneur / Higher Professional Role	Row total (n)
0: No Paid Occupation	56.4% (123)	4.1% (9)	15.1% (33)	3.2% (7)	18.3% (40)	2.8% (6)	218
1: Unskilled/ Agricultural Labour	25.0% (2)	12.5% (1)	12.5% (1)	0.0% (0)	37.5% (3)	12.5% (1)	8
2: Skilled Labour/ Informal Self-Employment	45.5% (5)	0.0% (0)	27.3% (3)	0.0% (0)	9.1% (1)	18.2% (2)	11
3: Clerical / Administrative Work	54.5% (6)	9.1% (1)	0.0% (0)	18.2% (2)	18.2% (2)	0.0% (0)	11
4: Teaching / Healthcare / Skilled Self-Employment	17.6% (3)	0.0% (0)	17.6% (3)	17.6% (3)	41.2% (7)	5.9% (1)	17
5: Entrepreneur / Higher Professional Role	31.3% (5)	6.3% (1)	0.0% (0)	0.0% (0)	50.0% (8)	12.5% (2)	16
Column total (n)	144	12	40	12	61	12	281

Note. Rows represent mothers' occupations (origin), and columns represent daughters' occupations (destination). Cells show row percentages with counts in parentheses. Diagonal cells represent intergenerational immobility (persistence), cells to the right represent upward mobility, and cells to the left represent downward mobility.

Source: Primary survey data (2025).

The pooled transition matrix in Table 6.3, which combines Muslim and non-Muslim women, confirms the overall picture for the sample as a whole. Non-participation in paid work is the single largest origin category for mothers and remains the dominant destination for daughters from these origins, indicating a strong intergenerational reproduction of labour-force non-participation. At the same time, there is a clear upward channel from non-participation into professional or respected service roles for a minority of daughters, reflecting the expansion of white-collar opportunities for women across communities.

For mothers in unskilled, skilled, clerical, or professional occupations, the transition patterns combine persistence, upward movement into higher-status roles, and downward movement into “No paid occupation”. Daughters of mothers in clerical or professional occupations are frequently found either in similar occupations or in higher-status professional or entrepreneurial roles, but a significant share also exit into non-participation. For mothers in the entrepreneurial or higher professional category, daughters are disproportionately located in professional/service or high-status roles in the next generation, but again, a meaningful fraction do not participate in paid work.

Overall, the three matrices point to an occupational regime that is more complex than the educational one. Whereas the educational transitions were dominated by upward movement and negligible downward mobility, the occupational transitions reveal a threefold structure: (a) strong persistence of labour-force non-participation across generations, (b) visible upward mobility from non-participation and low-skilled work into professional/service occupations, and (c) non-trivial downward movement from mothers in paid work—especially at higher levels—into daughters’ non-participation. Differences between Muslim and non-Muslim women exist, particularly in the extent to which professional and entrepreneurial origins are consolidated at the top, but these contrasts are subtle at the descriptive level and require formal testing.

Table 6.3*Intergenerational Occupational Transition Matrix — Overall Sample*

Daughter → Mother ↓	0: No Paid Occupation	1: Unskilled / Agricultural Labour	2: Skilled Labour/Informal Self-Employment	3: Clerical / Administrative Work	4: Teaching / Healthcare/ Skilled Self- Employment	5: Entrepreneur / Higher Professional Role	Row total (n)
0 No Paid Occupation	57.5% (311)	3.5% (19)	11.6% (63)	4.3% (23)	19.6% (106)	3.5% (19)	541
1 Unskilled/ Agricultural Labour	25.0% (4)	12.5% (2)	18.8% (3)	6.3% (1)	31.3% (5)	6.3% (1)	16
2 Skilled Labour/ Informal Self-Employment	35.7% (5)	0.0% (0)	35.7% (5)	0.0% (0)	14.3% (2)	14.3% (2)	14
3 Clerical / Administrative Work	37.5% (9)	8.3% (2)	0.0% (0)	12.5% (3)	41.7% (10)	0.0% (0)	24
4 Teaching / Healthcare / Skilled Self-Employment	20.0% (6)	0.0% (0)	13.3% (4)	20.0% (6)	40.0% (12)	6.7% (2)	30
5 Entrepreneur / Higher Professional Role	35.0% (7)	5.0% (1)	5.0% (1)	0.0% (0)	45.0% (9)	10.0% (2)	20
Column total (n)	342	24	76	33	144	26	645

Note. Rows represent mothers' occupations (origin), and columns represent daughters' occupations (destination). Cells show row percentages with counts in parentheses. Diagonal cells represent intergenerational

Source: Primary survey data (2025).

6.3.2 Statistical Tests of Association and Ordinal Occupational Persistence

To assess whether mothers' and daughters' occupations are statistically associated, chi-square tests of independence were conducted on the 6×6 transition matrices for each group. Because several cells contained low expected frequencies—an inherent feature of occupational mobility matrices—Monte Carlo exact *p* values accompany asymptotic values to provide more reliable inference (Agresti, 2013).

As reported in Table 6.4, the Pearson χ^2 test indicated a statistically significant association between maternal and daughter occupations for Muslim women, $\chi^2(25) = 46.76, p = .005$ (Monte Carlo $p = .027$), for non-Muslim women, $\chi^2(25) = 52.47, p = .001$ (Monte Carlo $p = .005$), and for the overall sample, $\chi^2(25) = 72.49, p < .001$ (Monte Carlo $p < .001$). Likelihood-ratio chi-square tests yielded similar results, and Fisher's exact tests for the full contingency tables also indicated statistically significant dependence in all three cases. The linear-by-linear association tests, which focus specifically on monotonic ordinal trends, were likewise significant for Muslims, non-Muslims, and the pooled sample (all $p \leq .001$). In simple terms, these results confirm that daughters' occupational positions are not randomly distributed with respect to their mothers' occupations; instead, there is a systematic, ordered association between origin and destination categories in both religious groups.

Table 6.4

Tests of Association Within 6×6 Occupational Transition Tables by Religious Group

Group	Test	χ^2 (df)	Asymptotic <i>p</i> (2-sided)	Monte Carlo exact <i>p</i> (2-sided)
Muslim (<i>n</i> = 364)	Pearson χ^2	46.759 (25)	.005	.027
	Likelihood-ratio χ^2	39.813 (25)	.030	.008
	Fisher's exact (<i>r</i> × <i>c</i>)	43.183 (—)	—	.001
	Linear-by-Linear χ^2	11.894 (1)	.001	.000
Non-Muslim (<i>n</i> = 281)	Pearson χ^2	52.468 (25)	.001	.005
	Likelihood-ratio χ^2	49.425 (25)	.003	.002
	Fisher's exact (<i>r</i> × <i>c</i>)	47.014 (—)	—	< .001
	Linear-by-Linear χ^2	16.629 (1)	.000	< .001

Group	Test	χ^2 (df)	Asymptotic p (2-sided)	Monte Carlo exact p (2-sided)
Overall ($n = 645$)	Pearson χ^2	72.485 (25)	< .001	< .001
	Likelihood-ratio χ^2	67.626 (25)	< .001	< .001
	Fisher's exact ($r \times c$)	65.192 (—)	—	< .001
	Linear-by-Linear χ^2	28.009 (1)	< .001	< .001

Note. The Pearson χ^2 test assesses the relationship's overall statistical significance (dependence), while the Linear-by-Linear Association χ^2 specifically tests for linear (monotonic) trends. A substantial proportion of cells in each transition matrix had expected frequencies below five. Because sparse tables can bias asymptotic chi-square approximations, Monte Carlo exact p values (based on 100,000 sampled tables) were computed and reported alongside asymptotic values, ensuring more reliable inference.

Source: Primary survey data (2025).

To assess the strength of this ordered association—interpreted here as the degree of intergenerational occupational persistence—Kendall's tau-b and Goodman–Kruskal's gamma were computed for each group (Table 6.5). Both measures are standard tools in the mobility literature, with larger positive values indicating stronger persistence (and therefore lower relative mobility).

The coefficients indicate a moderate positive association between mothers' and daughters' occupational status in the pooled sample ($\tau_b \approx .19$; $\gamma \approx .39$, both $p < .001$). These magnitudes are clearly lower than the corresponding educational persistence reported in the previous chapter, suggesting that occupational ranks are somewhat more fluid across generations than educational attainment, even though they still exhibit substantial continuity. In other words, daughters' occupations are influenced by, but not rigidly determined by, their mothers' occupational positions.

Comparing the two religious groups, the ordinal measures show a broadly similar degree of intergenerational occupational persistence, although the rankings do not match exactly. Kendall's τ_b was slightly higher among non-Muslim women ($\tau_b \approx .21$) than among Muslim women ($\tau_b \approx .18$), whereas Goodman–Kruskal's γ was slightly higher among Muslim women ($\gamma = .421$) than among non-Muslim women ($\gamma = .378$). The associations were statistically significant in each case. This pattern does not support the conclusion that occupational persistence was clearly stronger in one community than in the other. Rather, it shows that mothers' occupational position was related to daughters' occupational position in both groups, although the association was weaker than the intergenerational association observed for education in the previous chapter.

In substantive terms, the results suggest that occupational mobility among daughters was evident but not completely independent of mothers' occupational background. The transition matrices show movement from no paid occupation and lower-status origins into more secure and socially valued forms of work. The positive values of Kendall's τ_b and Goodman–Kruskal's γ indicate that mothers' occupational position still shaped daughters' occupational destinations to some extent. Where mothers were placed in relatively higher occupational categories, daughters were also more likely to be found in higher-status positions. Since the coefficients were modest in size, this association should be understood as limited but meaningful, rather than deterministic. In both Muslim and non-Muslim households, occupational advancement occurred, with some continuing influence from the previous generation's occupational position.

Table 6.5

Ordinal Association Between Mothers' and Daughters' Occupations (Kendall's τ -b and Goodman–Kruskal's Gamma)

Group	Kendall's τ -b	SE	z	p (asymptotic)	p (Monte Carlo)	Goodman–Kruskal Gamma	SE	z	p (asymptotic)	p (Monte Carlo)	n
Muslim	.182	.045	3.652	< .001	< .001	.421	.090	3.652	< .001	.002	364
Non-Muslim	.211	.054	3.743	< .001	< .001	.378	.086	3.743	< .001	.000	281
Overall	.194	.035	5.154	< .001	< .001	.394	.063	5.154	< .001	.000	645

Note. Ordinal measures (Kendall's tau-b and Goodman–Kruskal Gamma) quantify the strength of the ordered association between mothers' and daughters' occupational status, indicating the degree of intergenerational occupational persistence. Larger positive values denote stronger persistence (lower relative mobility). Asymptotic p-values are two-sided. Monte Carlo exact p-values are based on 100,000 sampled tables. All standard errors (SE) are asymptotic.

Source: Primary survey data (2025).

6.3.3 Conclusion

The transition matrices and associated statistics reveal a nuanced regime of intergenerational occupational mobility in Kerala, with important similarities and differences across Muslim and non-Muslim women. On the one hand, there is clear evidence of upward occupational mobility, particularly from non-participation and low-skilled origins into professional and respected service roles. A non-trivial

minority of daughters whose mothers did not participate in paid work now occupy teaching, healthcare, or skilled self-employment positions, reflecting the expansion of white-collar opportunities for women in the state.

On the other hand, the matrices also document substantial persistence of non-participation and non-negligible downward mobility from working mothers—especially those in higher-status occupations—into daughters’ non-participation in the labour market. In both religious groups, a large share of daughters of mothers without paid work remain outside the labour force, and even among daughters of clerical, professional, or entrepreneurial mothers, movement into “No paid occupation” is common. Thus, unlike the largely one-sided upward pattern observed for education, occupational mobility is characterised by a three-way mix of persistence at the bottom, upward flows into professional/service roles, and downward shifts back into non-participation.

The formal tests of association and ordinal measures of persistence corroborate this interpretation. Mothers’ and daughters’ occupations are statistically associated in all groups, but the strength of this association is moderate and slightly weaker than the intergenerational link in education. Differences between Muslim and non-Muslim women in the strength and pattern of this persistence are present but modest: non-Muslim women show a somewhat stronger consolidation at higher-status occupations, whereas Muslim women’s transitions more often combine upward moves from non-participation with downward shifts from professional origins into “No paid occupation”.

Overall, this section shows that Kerala’s occupational regime, like its educational regime, is both inclusive and stratified. Opportunities for upward movement into respected occupations have expanded for women across religious groups, yet the intergenerational reproduction of labour-force non-participation remains strong, and higher-status occupational advantages are more securely held among non-Muslim households. These findings provide an essential descriptive foundation for the subsequent sections of this chapter, which move beyond categorical transitions to summary mobility indices and multivariate models of occupational attainment, thereby allowing a more precise assessment of the extent, patterns, and determinants of intergenerational occupational mobility between Muslim and non-Muslim women in Kerala.

6.4 The Composition of Absolute Intergenerational Occupational Mobility: A Categorical Comparison

This subsection summarises the broad structure of intergenerational occupational movement by collapsing the full transition matrices into three ordered categories of mobility: downward mobility, occupational immobility, and upward mobility. This trichotomous classification enables a concise comparison of absolute mobility patterns between Muslim and non-Muslim women, providing an empirical bridge between the descriptive transition patterns and the subsequent calculation of mobility indices.

Table 6.6 presents the distribution of mobility types by religious group, and Figure 6.1 graphically depicts these differences. The broad pattern shows that immobility is the dominant outcome for women in both religious groups, reflecting the strong intergenerational persistence of labour-force non-participation and the stability of occupational positions for women in Kerala. Upward mobility is the second most common experience, while downward mobility is the least frequent.

Upward occupational movement forms the next-largest category in both groups. A little more than two-fifths of Muslim women and slightly over one-third of non-Muslim women experience upward mobility. The magnitude of upward movement is therefore somewhat higher among Muslims, even though they originate disproportionately from lower occupational categories. This indicates that daughters of Muslim women—especially those whose mothers were outside paid work—are more likely to transition into forms of labour-force participation or skilled occupations compared with their non-Muslim counterparts.

Downward movement is the least common outcome. Only a very small share of Muslim daughters fall below their mothers' occupational position, whereas the proportion among non-Muslims is more than twice that size. Although downward mobility remains infrequent for both communities, its higher incidence among non-Muslims suggests a slightly greater degree of volatility within their occupational path, particularly among those starting from comparatively advantaged origins.

A chi-square test of independence confirmed that the distribution of upward, downward, and immobile outcomes differed significantly by religion, χ^2 (2, N = 645)

= 14.93, $p = .001$, with a small effect size (Cramer's $V = .152$). The results indicate a statistically significant but substantively modest association between religious identity and mobility type. In other words, Muslim and non-Muslim women do not experience identical mobility patterns, but the occupational mobility regime for Muslim women is significantly more "protected" against downward slides but more prone to immobility compared to their non-Muslim counterparts.

Table 6.6

Composition of Intergenerational Occupational Mobility by Religious Group

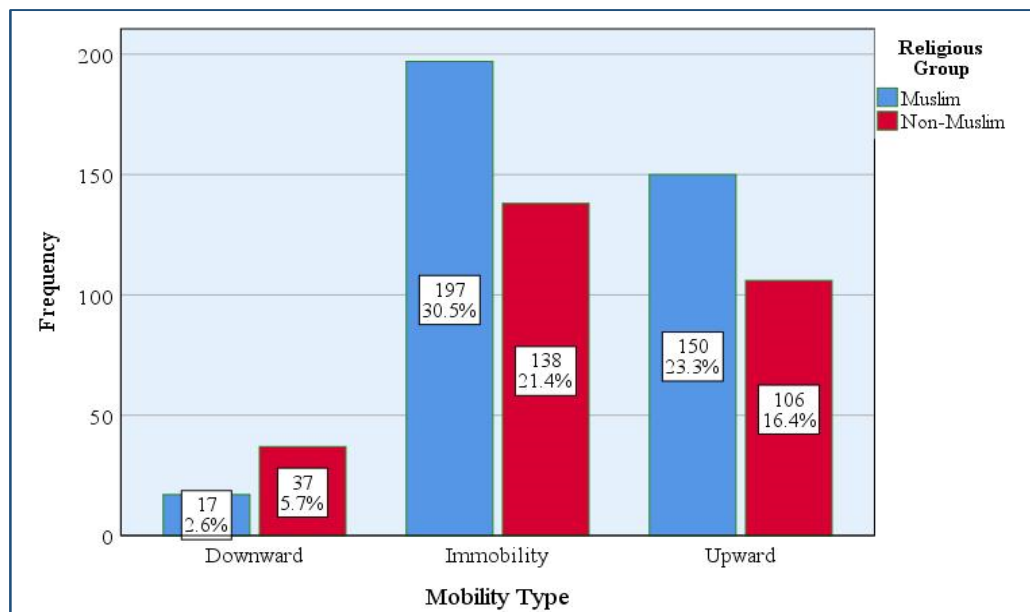
Sl. No.	Mobility type	Muslim n (%)	Non-Muslim n (%)	Total	Chi-square (χ^2) Test Results
1	Downward	17 (4.7%)	37 (13.2%)	54 (8.4%)	$\chi^2 = 14.925$ $df = 2$ $p = .001$ $N = 645$ Cramer's $V = .152$ $p = .001$
2	Immobility	197 (54.1%)	138 (49.1%)	335 (51.9%)	
3	Upward	150 (41.2%)	106 (37.7%)	256 (39.7%)	
	Total	364 (100%)	281 (100%)	645 (100.0%)	

Note. Mobility types are derived from the position of daughters' occupational outcomes relative to their mothers' positions in the 6×6 transition matrix: downward (below diagonal), immobility (on diagonal), upward (above diagonal).

Source: Primary survey data (2025).

Figure 6.1

Distribution of Intergenerational Occupational Mobility by Religious Group



Source: Primary survey data (2025).

Overall, this subsection demonstrates that the intergenerational occupational mobility profile of women in Kerala is characterised by a combination of strong occupational persistence and broadly similar mobility structures across religious groups, with Muslims displaying a marginally more favourable pattern of upward movement and non-Muslims showing somewhat higher downward mobility. The differences, while statistically significant, are not large and largely reflect the distinct starting positions of the two communities rather than sharply divergent mobility regimes. Having established these categorical patterns, the next section employs summary mobility indices to quantify the magnitude and net direction of these intergenerational occupational movements.

6.5 Summary Indices of Intergenerational Occupational Mobility

Building on the categorical composition of absolute intergenerational occupational mobility presented in the previous subsection, this section introduces summary indices that quantify the magnitude and direction of movement along the occupational hierarchy. Whereas the earlier analysis distinguished only between upward, immobile, and downward moves, the indices reported here incorporate the distance travelled across the six ordered occupational categories. The Bartholomew Index provides an overall, distance-based measure of intergenerational occupational movement, and the direction-sensitive indices separately capture upward and downward step-distance and their net balance. Together, these indices offer a compact summary of how far daughters move from their mothers' occupational positions across religious groups.

6.5.1 Bartholomew Index of Intergenerational Occupational Mobility

The Bartholomew Index (B) is used to summarise the overall extent of intergenerational occupational movement, jointly reflecting how often transitions occur and how many steps daughters move along the occupational hierarchy (Bartholomew, 1973). It can be interpreted as the average number of occupational steps moved by daughters, expressed as a proportion of the maximum possible move. The index ranges from 0, indicating complete immobility (all daughters remain in their mothers' occupational category), to 1, indicating maximum mobility (all daughters occupy the category farthest from their mothers).

Occupational status was recorded on a six-point ordinal scale ($k = 6$ categories), coded from 0 to 5 as follows: 0 = No Paid Occupation, 1 = Unskilled or Agricultural Labour, 2 = Skilled Labour or Informal Self-Employment, 3 = Clerical/Administrative Work, 4 = Teaching/Healthcare/Skilled Self-Employment, and 5 = Entrepreneur/Higher Professional Role. For each religious group, the Bartholomew Index was calculated from the 6×6 mother–daughter transition matrix as:

$$B = \frac{1}{N(k-1)} \sum_{i=0}^{k-1} \sum_{j=0}^{k-1} C_{ij} |j - i| \quad \dots(6.1)$$

where C_{ij} is the number of mother–daughter pairs with the mother in origin category i and the daughter in destination category j ; $|j - i|$ is the absolute step-distance in occupational categories; N is the total number of pairs in the group (i.e., $N = \sum_i \sum_j C_{ij}$); and $k-1$ ($6-1=5$) is the maximum possible distance between occupational categories, serving as a normalizing constant. The index therefore represents the average normalised number of occupational “steps” separating daughters from their mothers, ranging from 0 (complete immobility) to 1 (all daughters at the maximum possible distance from their mothers).

Uncertainty was quantified using a row-wise multinomial bootstrap that preserves the observed row totals. Within each mother’s occupational category, cell counts were resampled from a multinomial distribution using the observed row probabilities; the index was then recomputed for each replicate, and percentile-based 95% confidence intervals were obtained from 10,000 resamples.

For contextual interpretation, the directional shares of upward mobility, immobility, and downward mobility are also reported. These are defined as the proportions of pairs above, on, and below the diagonal of the transition matrix, respectively, that is,

$$\text{Upward} = \frac{\sum_{i < j} C_{ij}}{N}, \quad \text{Same} = \frac{\sum_i C_{ii}}{N}, \quad \text{Downward} = \frac{\sum_{i > j} C_{ij}}{N}, \quad \dots(6.2)$$

Table 6.7 reports the Bartholomew Index values, confidence intervals, and directional shares of mobility for each religious group and for the overall sample.

Table 6.7

Bartholomew Index of Intergenerational Occupational Mobility and Directional Shares by Religion

Sl No.	Group	Bartholomew (B) (95 % CI)	Upward Mobility	Immobility	Downward Mobility
1	Muslim (N = 392)	0.281 [0.246, 0.317]	0.412	0.541	0.047
2	Non-Muslim (N = 312)	0.285 [0.248, 0.324]	0.377	0.491	0.132
	Total (N = 704)	0.283 [0.257, 0.310]	0.397	0.519	0.084

Note. Indices computed from 6×6 mother–daughter occupational transition matrices (codes 0–5). “Distance” counts category steps and is normalized by $k-1 = 5$. Confidence intervals are percentile row-wise multinomial bootstrap with fixed row totals (10,000 replications). Directional shares refer to the proportions of upward, same, and downward movements.

Source: Primary survey data (2025).

As presented in Table 6.7, the Bartholomew Index estimates reveal that the overall magnitude of intergenerational occupational mobility—defined as the total distance moved regardless of direction—is moderate and virtually identical across religious communities. The overlapping confidence intervals confirm that there is no statistically significant difference in the total volume of occupational movement once both upward and downward steps are aggregated. However, the directional shares uncover critical distributional differences masked by this aggregate similarity. For both groups, immobility remains the dominant outcome. Upward mobility constitutes the next largest share and is slightly more prevalent among Muslim women. The most striking divergence, however, lies in downward mobility: while relatively rare overall, it is nearly three times more frequent among non-Muslim women compared to their Muslim counterparts. Consequently, the parity in the Bartholomew Index arises not from identical mobility regimes, but from two contrasting dynamics: the Muslim index value is driven almost exclusively by upward gains, whereas the non-Muslim value is inflated to the same level by a ‘churning’ effect—where a higher volume of downward regression numerically compensates for a lower rate of upward movement.

Taken together, these results indicate that the total occupational distance moved is of a similar order for both groups, but the composition of that distance

differs. Muslim women's movement is relatively more concentrated in upward shifts and less in downward movement, whereas non-Muslim women exhibit somewhat more bidirectional "churning," with a larger minority experiencing downward steps from their mothers' occupational positions.

6.5.2 Direction-Sensitive Intergenerational Occupational Mobility Indices

Although the Bartholomew Index conveniently summarises total movement, it treats upward and downward changes symmetrically. Because upward and downward occupational movements carry different substantive implications, it is useful to distinguish them explicitly. Following an adaptation of the approach proposed by Fields and Ok (1999) for ordered categories, this subsection presents direction-sensitive indices that separately quantify upward and downward step-distance and their net balance, along with the share of all movement that occurs in the upward direction.

Using each group's 6×6 origin–destination count matrix C_{ij} (mother's occupational level i , daughter's level j), the total sample size N , and $k = 6$ ordered occupational categories, the following indices were computed:

Upward step distance (M^+):

$$M^+ = \frac{\sum_j \sum_i C_{ij} \max(j - i, 0)}{N(k - 1)} \quad \dots(6.3)$$

Downward step distance (M^-):

$$M^- = \frac{\sum_j \sum_i C_{ij} \max(i - j, 0)}{N(k - 1)} \quad \dots(6.4)$$

Net step-distance ($M^+ - M^-$):

$$M^+ - M^- = \frac{\sum_j \sum_i C_{ij} (j - i)}{N(k - 1)} \quad \dots(6.5)$$

Upward fraction of step-distance:

$$\frac{M^+}{M^+ + M^-} \quad \dots(6.5)$$

Here, M^+ and M^- decompose the Bartholomew Index into its upward and downward components, such that $M^+ + M^- = B$. The net step-distance summarises the balance between upward and downward movement, taking positive values when upward shifts dominate. The upward fraction expresses the share of total step-distance that is upward; values close to 1 indicate that nearly all movement is upward rather than downward. As before, row-wise multinomial bootstrap with 5,000 replications was used to obtain percentile-based 95% confidence intervals.

The direction-sensitive indices in Table 6.8 clarify the distinct mobility regimes. The Upward Step Index (M^+) is somewhat higher for Muslim women compared to non-Muslim women, although the overlapping confidence intervals suggest this difference in upward magnitude is not statistically distinct. Both groups are experiencing comparable levels of upward advancement in terms of distance.

However, the Downward Step Index (M^-) reveals a statistically significant divergence. The downward distance for non-Muslim women is more than double that of Muslim women, a difference confirmed by non-overlapping confidence intervals. This substantial downward component for non-Muslims acts as a drag on their overall progress, resulting in a Net Step Index that is noticeably lower than that of Muslim women. The confidence intervals for the net index touch at the boundary, indicating a likely significant advantage for Muslims in net occupational progression.

The Upward Fraction succinctly captures this structural difference: for every unit of occupational distance moved by Muslim daughters, over 91% is in the upward direction. For non-Muslim daughters, this efficiency drops to roughly 78%, meaning nearly a quarter of their total intergenerational movement consists of downward steps.

Table 6.8

Directional Intergenerational Occupational Mobility Indices (Point Estimates and 95% Confidence Intervals) by Religious Group

Sl. No.	Measure	Muslim (n = 364)	Non-Muslim (n = 281)	Total (N = 645)
1	Upward distance (M ⁺)	0.257 [0.222, 0.292]	0.221 [0.186, 0.256]	0.242 [0.217, 0.266]
2	Downward distance (M ⁻)	0.024 [0.016, 0.033]	0.064 [0.048, 0.081]	0.042 [0.033, 0.051]
3	Net distance (M ⁺ – M ⁻)	0.233 [0.197, 0.269]	0.157 [0.117, 0.197]	0.200 [0.173, 0.227]
4	Upward fraction (M ⁺ /(M ⁺ +M ⁻))	0.914 [0.882, 0.943]	0.776 [0.720, 0.828]	0.853 [0.821, 0.883]

Note. Indices computed from 6 × 6 mother–daughter occupational transition matrices (codes 0–5). M⁺ and M⁻ denote the normalised average step distance in the upward and downward directions, respectively. Values in square brackets are the 95% confidence intervals based on percentile row-wise multinomial bootstrap with fixed row totals (5,000 resamples).

Source: Primary survey data (2025).

6.5.3 Conclusion

The summary indices reported in this section corroborate and sharpen the patterns observed in the transition matrices. Overall, women in Kerala experience a moderate degree of intergenerational occupational mobility, with movements that are predominantly upward in both Muslim and non-Muslim communities. The total volume of movement, as captured by the Bartholomew Index, is broadly similar across religious groups, reflecting a shared environment in which a substantial proportion of women move away from their mothers' occupational positions.

At the same time, the direction-sensitive indices reveal important differences in the composition of this movement. Muslim women exhibit a larger upward component of step-distance, a smaller downward component, and a higher upward fraction than non-Muslim women. This indicates that, conditional on moving, Muslim daughters are more likely to move into higher occupational categories, whereas non-Muslim daughters experience a somewhat greater incidence of downward occupational steps from more advantaged maternal positions. Non-Muslim mobility involves a "churning" dynamic: while they experience similar

levels of upward distance, this is partly offset by a statistically significant degree of downward occupational slippage.

Taken together, these findings suggest that Kerala's occupational mobility regime combines considerable upward opportunity with persistent intergenerational structuring. Muslim women, despite starting from lower average occupational baselines, display a more upwardly oriented pattern of occupational movement, while non-Muslim women show greater stability at higher origin levels alongside a modestly higher risk of downward adjustment. These quantitative summaries provide a bridge to the subsequent analysis of step-difference distributions, which examines how the magnitude of intergenerational occupational change varies across the full sample and between religious groups.

6.6 Distribution of Intergenerational Occupational Step-Difference (Daughter – Mother) by Religion

The earlier sections established broad patterns of intergenerational occupational mobility using transition matrices and summary indices. While those summaries capture aggregate tendencies, they do not reveal how mobility is distributed across the full range of possible movements. This section, therefore, examines the ordered Occupational Step-Difference (OSD) variable, which quantifies the exact distance—positive, negative, or zero—that each daughter moved relative to her mother on the six-category occupational scale. The OSD variable is defined as the difference between the daughter's and the mother's occupational codes ($OSD = \text{Daughter's Occupational Code} - \text{Mother's Occupational Code}$) based on the six-category occupational hierarchy employed in this study. This ordered OSD score captures both the direction (sign) and magnitude (number of steps) of mobility, with negative values indicating downward mobility, zero indicating immobility, and positive values indicating upward mobility across generations. The OSD yields a score on an 11-point scale ranging from -5 (largest downward mobility) to +5 (maximum upward mobility). While summary indices like the Bartholomew Index provide useful averages, they can mask important heterogeneity in mobility experiences. Analyzing the complete OSD distribution allows us to see whether

observed group differences in average mobility reflect consistent shifts across the entire distribution or are driven by specific segments, such as large upward leaps or concentrated downward slides. By examining the full distribution of these scores, we can visualize the structural asymmetry in mobility outcomes and formally test whether the occupational mobility of Muslim and non-Muslim women follows statistically distinct distributions.

Table 6.9 reports the distribution of Occupational Step-Difference (OSD) categories within each religious group. The overall pattern indicates that immobility (an OSD of zero) is the most common outcome, accounting for approximately half of the observations in both distributions. This reflects the strong intergenerational persistence of occupational positions, particularly the transmission of labour force non-participation, as documented in the transition matrices. For a significant share of women, especially those whose mothers did not engage in paid work, domestic responsibilities and cultural norms continue to constrain labour market entry. However, among those who experience mobility, upward movement is notably more prevalent than downward movement, indicating a general, though not universal, trend of occupational improvement relative to the previous generation.

Despite this broad pattern of immobility, upward moves occur in meaningful proportions in both groups. Among Muslim women, upward movement is more noticeable at the higher step levels, with a larger share making substantial multi-step transitions into skilled, clerical, or professional roles. Non-Muslim women also exhibit upward mobility, although their movements tend to cluster in the lower and middle step categories. Downward mobility, while rare overall, appears slightly more frequently among non-Muslim women. Consequently, while the median step-difference is zero for both groups—reflecting the high prevalence of immobility—the mean OSD is higher for Muslim women. This higher average does not necessarily imply they are reaching higher absolute peaks, but rather that their aggregate mobility score is less eroded by the downward regression that characterizes a segment of the non-Muslim population.

Table 6.9

Distribution of Intergenerational Occupational Step-Difference (Daughter – Mother) by Religion

Sl. No.	OSD (Steps)	Mobility Type & Steps	Muslim <i>n</i> (%)	Non-Muslim <i>n</i> (%)	Total <i>n</i> (%)
1	–5	Downward mobility (5 steps)	2 (0.5)	5 (1.8)	7 (1.1)
2	–4	Downward mobility (4 steps)	3 (0.8)	4 (1.4)	7 (1.1)
3	–3	Downward mobility (3 steps)	4 (1.1)	6 (2.1)	10 (1.6)
4	–2	Downward mobility (2 steps)	2 (0.5)	9 (3.2)	11 (1.7)
5	–1	Downward mobility (1 step)	6 (1.6)	13 (4.6)	19 (2.9)
6	0	No mobility	197 (54.1)	138 (49.1)	335 (51.9)
7	+1	Upward mobility (1 step)	21 (5.8)	13 (4.6)	34 (5.3)
8	+2	Upward mobility (2 steps)	32 (8.8)	34 (12.1)	66 (10.2)
9	+3	Upward mobility (3 steps)	18 (4.9)	12 (4.3)	30 (4.7)
10	+4	Upward mobility (4 steps)	66 (18.1)	41 (14.6)	107 (16.6)
11	+5	Upward mobility (5 steps)	13 (3.6)	6 (2.1)	19 (2.9)
Total			392 (100)	312 (100)	704 (100)
Mean (SD)			1.16 (1.93)	0.79 (2.05)	1.00 (1.99)
Median			0.00	0.00	0.00

Note. OSD = Daughter's occupational code – mother's occupational code on the 0–5 occupational scale (six ordered categories from no paid occupation to higher professional/entrepreneurial roles). Percentages are column-wise within each religious group and for the total sample.

Source: Primary survey data (2025).

A Mann–Whitney U test was performed to test whether the OSD distributions differ systematically by religion. The results, presented in Table 6.10, indicated a statistically significant group difference, $U = 46,219.50$, $Z = -2.27$, $p = .023$, with Muslim women tending to have higher OSD scores than their non-Muslim counterparts. The associated effect sizes are small (*Cliff's* $\delta = 0.096$; non-parametric $r = .089$), suggesting that while the group difference is reliable, its magnitude is modest. In substantive terms, the magnitude of δ implies that a randomly selected Muslim woman is about 10% more likely to have a more favorable mobility outcome (i.e., a more positive step-difference) than a randomly selected non-Muslim woman.

Table 6.10*Mann–Whitney U Test Comparing OSD by Religion (Muslim vs. Non-Muslim)*

Sl. No.	Statistic	Muslim	Non-Muslim	Value
1	n	364	281	645 (total)
2	Mean rank	336.52	305.48	—
3	Mann–Whitney U	—	—	46, 219.50
4	Standardised Z	—	—	–2.27
5	p (two-tailed)	—	—	.023
6	Cliff's δ	—	—	0.096
7	Non-parametric r	—	—	0.089

Note. Effect sizes were computed as follows: $= \frac{|Z|}{\sqrt{n}}$, where Z is the standardized Mann–Whitney statistic and n is the total sample size. Cliff's δ was computed using the Mann–Whitney U statistic as $\delta = \frac{2U}{n_1 n_2} - 1$, where n_1 and n_2 are the group sample sizes.

Source: Primary survey data (2025).

To further test whether the overall shape of the OSD distribution differed between the groups, a chi-square test of independence was performed on the 11-category OSD classification. Because several cells had low expected frequencies, Monte Carlo significance values were used. The association was statistically significant, $\chi^2(10, N = 645) = 20.48$, Monte Carlo $p = .022$, with a small effect (Cramer's $V = .18$). This indicates that the two groups do not share identical mobility patterns: Muslim women are relatively more concentrated in the higher positive categories, whereas non-Muslim women display a more mixed profile, with somewhat greater representation in both small upward moves and small downward moves.

Table 6.11*Chi-Square Test of OSD Distribution (11 Categories) by Religion, with Effect Size*

Test	χ^2	df	N	p (asympt.)	p (Monte Carlo)	Effect Size
Pearson χ^2	20.475	10	645	.025	.022	Cramer's $V = .178$

Note. Monte Carlo based on 100,000 sampled tables. Six cells (27.3%) had expected counts < 5 .

Source: Primary survey data (2025).

In summary, the analysis of the OSD distribution provides a distinctive picture of intergenerational occupational mobility among women in Kerala. For both religious groups, immobility remains the most common outcome, reflecting strong persistence in labour-force non-participation and limited structural opportunities for women to enter higher occupational tiers. Among those who do experience mobility,

upward occupational movement is markedly more common than downward movement, although the magnitude and pattern of upward shifts differ across groups. Muslim women display a modest tendency toward larger upward steps, consistent with the pattern of concentrated upward transitions observed in the transition matrices. Non-Muslim women, meanwhile, show a more dispersed distribution, with slightly more downward steps alongside small-to-moderate upward movements. The differences between groups are statistically significant but substantively small, indicating broadly similar mobility regimes with subtle differences in the distribution of gains. These distributional patterns complement the earlier index-based findings and set the stage for investigating the underlying determinants of these divergent mobility experiences in the following section.

6.7 Determinants of Intergenerational Occupational Mobility of Muslim and non-Muslim Women in Kerala

6.7.1 Introduction

The descriptive and index-based analyses presented in the preceding subsections revealed clear patterns of occupational mobility among Muslim and non-Muslim women in Kerala, yet they did not identify the specific factors that shape these movements. To address this limitation, the present section examines the determinants of intergenerational occupational mobility using two complementary regression frameworks: (a) a multinomial logistic regression for mobility type (downward, immobile, upward) and (b) an ordinary least squares (OLS) regression for the occupational step-difference (OSD) measure. These dual models allow for a comprehensive understanding of both *the direction and magnitude of occupational movement relative to mothers'* occupational positions. The choice of estimation techniques is guided by the specific distributional properties of the mobility variables and the theoretical need to distinguish between the likelihood of movement and the distance traveled.

6.7.2 Determinants of Mobility Direction: A Multinomial Logistic Regression Approach

6.7.2.1 Introduction and Rationale

To model the probability of experiencing different mobility types, we employ a multinomial logistic regression (MLR) model. The dependent variable is a three-

category indicator capturing intergenerational occupational mobility direction: downward mobility ($OSD < 0$), immobility ($OSD = 0$), and upward mobility ($OSD > 0$). The three-category mobility variable possesses a natural ordinal structure (downward < immobile < upward), which might suggest the use of ordered logit or probit models. However, such models impose the proportional odds (or parallel lines) assumption, requiring that the effect of a predictor—such as religion or education—be identical for the transition from "downward to immobile" as it is for "immobile to upward" (Long & Freese, 2014).

Theoretical and empirical evidence suggest this assumption is restrictive in the context of mobility. The determinants of downward mobility often differ from those driving upward mobility (Breen, 2004; Long & Freese, 2014). Descriptive evidence from Section 6.6—which highlighted higher downward volatility among non-Muslims alongside lower upward fluidity—further supports modeling these outcomes as qualitatively distinct rather than as symmetric steps along a single continuum. Empirical tests confirmed this asymmetry. Wald tests comparing the coefficients for downward and upward mobility showed statistically significant differences for mother's occupation ($\chi^2(1) = 66.86, p < .001$) and education ($\chi^2(1) = 14.90, p < .001$). These findings decisively reject the hypothesis that upward and downward movements are governed by the same underlying processes. Moreover, an ordered logit model fitted to the same data yielded substantially weaker explanatory power (McFadden pseudo $R^2 = .147$) compared to the unrestricted multinomial model (pseudo $R^2 = .339$). Collectively, these tests affirm that the multinomial logit specification is theoretically justified and empirically superior for analysing mobility direction. Consequently, to identify the determinants of directional mobility net of covariates, this section employs a multinomial logistic regression model. By treating immobility as the reference category, the MLR estimates separate sets of coefficients for downward versus immobile and upward versus immobile outcomes. This approach allows the determinants of downward and upward mobility to differ in both magnitude and sign, thereby capturing potentially distinct mechanisms of occupational decline and advancement.

6.7.2.2 Model Specification and Variable Description

Let Y_i denote the occupational mobility outcome for the i -th daughter. The variable takes the value $Y_i = 0$ for immobility (the daughter is in the same occupational class as her mother), $Y_i = 1$ for downward mobility (the daughter is in a lower occupational class than her mother), and $Y_i = 2$ for upward mobility (the daughter is in a higher occupational class than her mother). Immobility ($Y_i = 0$) is treated as the reference category.

In a multinomial logit framework, the log-relative risk (log-odds) of outcome j relative to the reference outcome 0 is given by

$$\ln \left[\frac{\Pr(Y_i = j \mid \mathbf{x}_i)}{\Pr(Y_i = 0 \mid \mathbf{x}_i)} \right] = \eta_{ij}, \quad j \in \{1, 2\}, \quad \dots(6.6)$$

where η_{ij} is a linear predictor for individual i and outcome j . Exponentiating the coefficients yields the relative risk ratios (RRRs):

$$\text{RRR}_{jk} = \exp(\beta_{kj}), \quad \dots(6.7)$$

which measures how a one-unit change in covariate x_{ik} multiplies the relative risk of outcome j versus immobility, holding all other variables constant.

At the level of probabilities, the multinomial logit model specifies, for each non-reference outcome $j \in \{1, 2\}$:

$$\begin{aligned} \Pr(Y_i = j \mid \mathbf{x}_i) &= \frac{\exp(\eta_{ij})}{1 + \exp(\eta_{i1}) + \exp(\eta_{i2})}, \\ \Pr(Y_i = 0 \mid \mathbf{x}_i) &= \frac{1}{1 + \exp(\eta_{i1}) + \exp(\eta_{i2})}, \end{aligned} \quad \dots(6.8)$$

with separate linear predictors for downward and upward mobility:

$$\begin{aligned} \eta_{i1} &= \ln \left[\frac{\Pr(Y_i = 1 \mid \mathbf{x}_i)}{\Pr(Y_i = 0 \mid \mathbf{x}_i)} \right] \\ &= \beta_{01} + \beta_{11} \text{Muslim}_i + \beta_{21} \text{OccMother}_i + \beta_{31} \text{Edu}_i \\ &\quad + \beta_{41} \text{Age}_i + \beta_{51} \text{Children}_i + \beta_{61} \text{Dependents}_i \\ &\quad + \beta_{71} \text{HHsize}_i + \beta_{81} \text{Rural}_i \end{aligned} \quad \dots(6.9)$$

$$\begin{aligned} \eta_{i2} &= \ln \left[\frac{\Pr(Y_i = 2 \mid \mathbf{x}_i)}{\Pr(Y_i = 0 \mid \mathbf{x}_i)} \right] \\ &= \beta_{02} + \beta_{12} \text{Muslim}_i + \beta_{22} \text{OccMother}_i + \beta_{32} \text{Edu}_i \\ &\quad + \beta_{42} \text{Age}_i + \beta_{52} \text{Children}_i + \beta_{62} \text{Dependents}_i \\ &\quad + \beta_{72} \text{HHsize}_i + \beta_{82} \text{Rural}_i \end{aligned} \quad \dots(6.10)$$

Here, β_0j is the intercept for outcome j , and β_{kj} denotes the coefficient on the k -th covariate in the equation for outcome j relative to immobility. Under this parameterisation, $\exp(\beta_{kj})$ is the relative risk ratio associated with a one-unit increase in the k -th covariate for the comparison between outcome j and immobility.

The covariate vector $\mathbf{x}_i$ includes the following variables. The religious group indicator (Muslimi) takes the value 1 if the daughter belongs to the Muslim community and 0 if she belongs to a non-Muslim community. Mother's occupational status (OccMotheri) is a continuous status score that captures the mother's position in the occupational hierarchy used in the construction of the occupational status difference (OSD). Daughter's education (Edui) is measured as the years of schooling completed. Age (Agei) is measured in completed years. Number of children (Childreni) captures the total number of children ever born to the daughter. Number of dependents (Dependentsi) counts the number of economically dependent persons in the household. Household size (HHsizei) is the total number of members residing in the daughter's household. Rural location (Rurali) is a dummy variable equal to 1 if the daughter resides in a rural area and 0 otherwise.

Coefficients are estimated separately for downward and upward mobility relative to immobility. In reporting, the coefficients are presented as RRRs to facilitate interpretation.

6.7.2.3 Estimation Method and Model Fit Diagnostics

The multinomial logit model was estimated using Maximum Likelihood Estimation (MLE) in Stata 17. Robust (Huber–White sandwich) standard errors were employed to ensure valid inference in the presence of potential heteroscedasticity and to provide protection against minor specification errors in the variance structure. The reference category was set to Immobile (OSD = 0). The analytic sample includes 645 women with non-missing values on all variables. To ensure the adequacy of the final model, a comprehensive set of diagnostic tests was conducted (Table 6.12).

The multinomial logistic regression model exhibited a strong overall fit. Using robust standard errors, the joint Wald test indicated that the predictors were highly

informative for explaining occupational mobility, Wald $\chi^2(16) = 280.11, p < .001$. The conventional likelihood-ratio test from the maximum likelihood estimates without robust variance estimation led to the same conclusion, LR $\chi^2(16) = 400.48, p < .001$, indicating a large and statistically significant improvement over the intercept-only model.

McFadden's pseudo- R^2 for the multinomial specification was 0.339, which is considered substantial for a three-outcome discrete choice model. The Akaike and Bayesian information criteria (AIC = 815.44; BIC = 895.89) are consistent with a reasonably parsimonious specification given the number of regressors and outcome categories. In terms of predictive performance, the model correctly classified 69.15% of respondents when each case was assigned to the category with the highest predicted probability. Classification accuracy was highest for immobility (74.93%), followed by downward mobility (68.52%) and upward mobility (61.72%), suggesting that immobile and downward outcomes are somewhat easier to predict than upward moves, but all three categories are captured reasonably well.

To further evaluate discrimination for specific contrasts, separate binary logistic regressions were estimated. For downward versus immobile mobility, the model fit was excellent, Wald $\chi^2(8) = 130.27, p < .001$, with McFadden's pseudo- $R^2 = 0.612$ and an area under the ROC curve (AUC) of 0.974, showing very strong discrimination between downwardly mobile and immobile daughters. For upward versus immobile mobility, the predictors were again jointly significant, Wald $\chi^2(8) = 110.55, p < .001$, although explanatory power was more modest (pseudo- $R^2 = 0.209$) but still meaningful, and the AUC of 0.795 indicated acceptable to good discrimination.

Multicollinearity was assessed using an auxiliary OLS regression of the continuous OSD outcome on the same set of covariates. The variance inflation factors (VIFs) are all comfortably below conventional thresholds: the mean VIF is 1.64, and the maximum VIF of 2.18 for the number of dependents falls well below the conventional threshold of 5 (or the stricter threshold of 3). This pattern rules out serious multicollinearity as a source of instability in the estimated coefficients.

A set of Wald tests was used to assess whether the coefficients for key variables are equal across the downward and upward equations. The results showed that mother's occupational status and daughter's education operate very differently for downward and upward mobility ($\chi^2(1) = 66.86, p < .001$, and $\chi^2(1) = 14.90, p < .001$, respectively), whereas the age effect is statistically indistinguishable across the two equations ($\chi^2(1) = 0.92, p = .338$). These tests confirm that downward and upward mobility are not mirror-image processes and support the use of a three-category multinomial model rather than collapsing mobility into a simple mobile/immobile dichotomy.

Consistent with this, an ordered logit model that imposed a proportional-odds structure on the three categories fitted the data much less well (pseudo- $R^2 = 0.147$) than the multinomial logit (pseudo- $R^2 = 0.339$). This large drop in pseudo- R^2 signals that the proportional-odds (parallel-slopes) restriction imposed by the ordered logit is too restrictive. The unordered multinomial specification is therefore retained as the preferred model. A Hausman-type comparison between a restricted multinomial logit (excluding the downward category) and the full model produced a negative test statistic ($\chi^2(9) \approx -0.78$). The negative value arises because the estimated covariance-difference matrix is not positive definite, implying that the test is formally inconclusive. Substantively, however, the absence of a positive and significant statistic indicates no evidence of systematic coefficient differences between the restricted and full models and no strong indication of violations of the independence-of-irrelevant-alternatives (IIA) assumption.

Finally, additional specification tests support the robustness of the main findings. A joint test of squared terms in mother's occupational status, age, and education detected some nonlinearity, $\chi^2(6) = 26.30, p < .001$, but sensitivity analyses using augmented models with these quadratic terms did not materially alter the substantive conclusions regarding the key predictors, particularly religious group membership. For the upward versus immobile binary logit, a link test produced a non-significant squared-hat term (hatsq, $p = .090$), indicating no strong evidence of functional-form misspecification. Taken together, these diagnostics suggest that the multinomial logit model provides a well-behaved and substantively informative representation of intergenerational occupational mobility in the sample.

Table 6.12*Model Fit and Diagnostic Tests for the Multinomial Logit Model of Occupational Mobility (N = 645)*

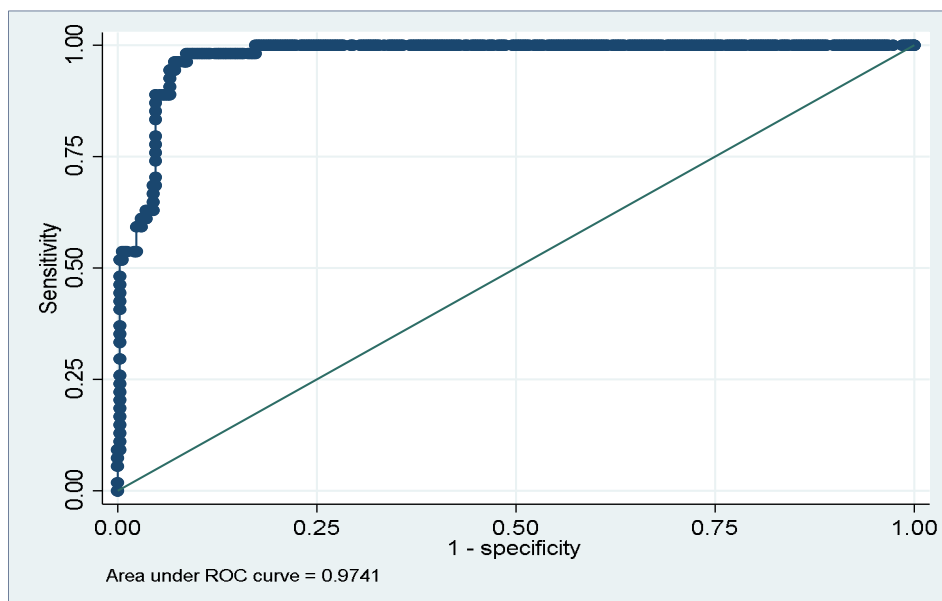
Test / diagnostic	Statistic/Value	Interpretation
Overall model fit (multinomial logit with robust SEs)		
Model significance (Wald test)	Wald $\chi^2(16) = 280.11, p < .001$	The set of predictors is jointly statistically significant.
Likelihood-ratio test (null vs full MNL, conventional MLE)	LR $\chi^2(16) = 400.48, p < .001$	The full multinomial logit model provides a large and highly significant improvement in fit over the intercept-only model.
Pseudo-R ² (McFadden, multinomial logit)	0.339	The model has substantial explanatory power for a three-outcome discrete choice.
Information criteria	AIC = 815.44; BIC = 895.89	Reasonable trade-off between fit and parsimony given the number of predictors and categories.
Predictive performance (three outcomes)		
Overall correct classification	69.15%	Good in-sample predictive accuracy for the three-category mobility outcome.
Correct classification by category	Immobile = 74.93%; Downward = 68.52%; Upward = 61.72%	Model distinguishes immobile, downward, and upward outcomes reasonably well
Binary logit: downward vs immobile (N = 389)		
Overall model significance	Wald $\chi^2(8) = 130.27, p < .001$	Covariates are highly informative for distinguishing downward mobility from immobility.
Pseudo-R ² (McFadden)	0.612	Very high explanatory power for this binary contrast.
Discrimination (ROC)	AUC = 0.974	Excellent discrimination between downwardly mobile and immobile daughters.
Binary logit: upward vs immobile (N = 591)		
Overall model significance	Wald $\chi^2(8) = 110.55, p < .001$	Covariates are jointly important for predicting upward versus immobile outcomes.
Pseudo-R ² (McFadden)	0.209	Moderate explanatory power for the upward vs immobile contrast.
Discrimination (ROC)	AUC = 0.795	Acceptable to good discrimination between upwardly mobile and immobile daughters.

Test / diagnostic	Statistic/Value	Interpretation
Multicollinearity (auxiliary OLS on occupational step difference)		
Variance inflation factors	Mean VIF = 1.64 (all VIFs $\approx$ 1.0–2.2)	No evidence of problematic multicollinearity among regressors.
Equality of coefficients: downward vs upward logits		
Wald test: $\beta(\text{Mother's Occ})_1 = \beta(\text{Mother's Occ})_2$	$\chi^2(1) = 66.86, p < .001$	The effect of mother's occupational status differs sharply between downward and upward mobility equations; categories cannot be treated as behaviourally equivalent.
Wald test: $\beta(\text{Education})_1 = \beta(\text{Education})_2$	$\chi^2(1) = 14.90, p < .001$	Educational attainment also operates differently for downward and upward mobility.
Wald test: $\beta(\text{Age})_1 = \beta(\text{Age})_2$	$\chi^2(1) = 0.92, p = .338$	No statistically significant difference in the age effect across the downward and upward logits.
Ordered vs unordered specification		
Ordered logit vs multinomial logit	Ordered logit pseudo- $R^2 = 0.147$; multinomial logit pseudo- $R^2 = 0.339$	Treating mobility as ordinal (ordered logit) yields much poorer fit; the proportional-odds restriction is not supported, so the unordered multinomial logit is preferred.
IIA assessment (Hausman-type comparison)		
Restricted (immobile vs upward only) vs full MNL	Hausman $\chi^2(9) \approx -0.78$	Negative statistic due to a non-positive-definite covariance difference; formally inconclusive, but there is no indication of systematic coefficient differences and no strong evidence of IIA violation.
Specification and nonlinearity checks		
Nonlinearity check (squared terms for mother's status, age, education)	Joint $\chi^2(6) = 26.30, p < .001$	Higher-order terms detect some curvature, but supplementary models with squares do not alter the substantive conclusions; the main specification reports the more parsimonious linear effects.
Link test (upward vs immobile logit)	hatsq: $p = .090$	No strong evidence of functional-form misspecification in the upward vs immobile binary logit submodel ($p > .05$).

Note. Multinomial logit models are estimated with robust standard errors for inference. The LR χ^2 , AIC and BIC are from the conventional maximum likelihood fit (non-robust VCE). McFadden's pseudo- R^2 is defined as $1 - (LL_1/LL_0)$. AUC denotes the area under the ROC curve from the corresponding binary logit. The Hausman statistic is negative because the covariance-difference matrix is not positive definite; this implies no evidence of systematic coefficient differences between restricted and full models and no strong indication of IIA violations, but the test is formally inconclusive.

Figure 6.2

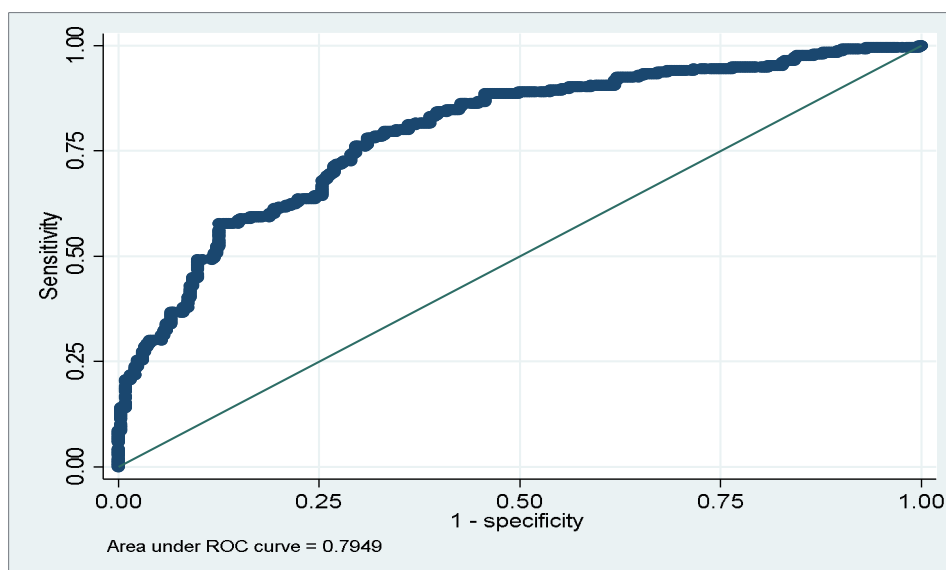
Receiver Operating Characteristic (ROC) Curve for Downward Versus Immobile Occupational Mobility



Note. ROC curve based on the binary logistic regression model comparing downward mobility (1) with immobility (0), using the same covariates as the multinomial model. The area under the curve (AUC = 0.9741) indicates excellent discrimination.

Figure 6.3

Receiver Operating Characteristic (ROC) Curve for Upward Versus Immobile Occupational Mobility



Note. ROC curve based on the binary logistic regression model comparing upward mobility (1) with immobility (0), using the same covariates as the multinomial model. The area under the curve (AUC = 0.7949) indicates acceptable to good discrimination.

6.7.2.4 Multinomial Logistic Regression Results and Discussion

Table 6.13 presents the estimated relative risk ratios (RRR) from the multinomial logit model, comparing both downward and upward mobility with immobility as the base category. Table 6.14 reports the corresponding average marginal effects (AMEs) on the probabilities of downward and upward mobility. These complementary metrics elucidate different aspects of the mobility process: RRRs describe the change in the odds of a specific outcome relative to the base category (immobility). At the same time, AMEs quantify the absolute change in the probability of each outcome associated with a unit change in the explanatory variables.

Table 6.13

Multinomial Logistic Regression Results (Relative Risk Ratios) for Directional Intergenerational Occupational Mobility (Reference Category: Immobile)

Predictor	Downward Mobility (vs. Immobile)				Upward Mobility (vs. Immobile)			
	RRR	Robust SE	<i>z</i>	<i>p</i>	RRR	Robust SE	<i>z</i>	<i>p</i>
Religious Group (Muslim)	0.506	0.315	−1.09	.274	1.158	0.258	0.66	.510
Mother's Occupation	4.750***	1.099	6.73	<.001	0.677***	0.092	−2.87	.004
Education (years)	0.879	0.078	−1.45	.147	1.253***	0.039	7.19	<.001
Age (years)	0.989	0.055	−0.20	.841	1.030**	0.015	1.96	.050
Number of Children	0.952	0.533	−0.09	.930	0.684***	0.095	−2.73	.006
Number of Dependents	1.012	0.348	0.04	.972	0.509***	0.060	−5.69	<.001
Household Size	1.185	0.298	0.68	.499	1.404***	0.138	3.44	.001
Location (Rural)	2.775*	1.605	1.77	.078	1.145	0.225	0.69	.491
Constant	0.036	0.087	−1.37	.171	0.021	0.019	−4.18	<.001

Note. Relative risk ratios (RRR) are estimated from a multinomial logit with immobile as the base outcome. Robust (Huber–White) standard errors reported. *** $p < .01$, ** $p < .05$, * $p < .1$

Source: Computed from primary survey data (2025).

Table 6.14

Average Marginal Effects (AME) of Covariates on Probabilities of Downward and Upward Mobility

Predictor	Downward Mobility (Pr = 1)				Upward Mobility (Pr = 2)			
	AME	Robus t SE	z	p	AME	Robus t SE	z	p
Religious Group (Muslim)	−0.023	0.020	−1.17	.242	0.032	0.038	0.86	.392
Mother's Occupation	0.051***	0.005	10.15	< .001	−0.083***	0.019	−4.42	< .001
Education (years)	−0.006***	0.002	−2.79	.005	0.040***	0.004	8.92	< .001
Age (years)	−0.001	0.002	−0.40	.691	0.005**	0.003	2.04	.041
Number of Children	0.003	0.017	0.15	.879	−0.065***	0.023	−2.75	.006
Number of Dependents	0.008	0.010	0.77	.444	−0.116***	0.018	−6.59	< .001
Household Size	0.002	0.007	0.21	.834	0.056***	0.016	3.53	< .001
Location (Rural)	0.029*	0.017	1.73	.084	0.012	0.033	0.37	.710

Note. Average marginal effects (dy/dx) represent the absolute change in the probability of the outcome for a one-unit change in the predictor. They are based on the multinomial logit model with robust standard errors. AMEs for continuous variables represent the marginal change in probability for a one-unit increase in the covariate, holding other variables at their observed values. For the binary predictor (Muslim; Rural), AMEs represent the discrete change in predicted probability when the variable shifts from 0 to 1. *** $p < .01$, ** $p < .05$, * $p < .10$.

Source: Computed from primary survey data (2025).

The analysis reveals no statistically significant independent effect of religious group membership, the central variable of interest, on either directional mobility outcome, once socioeconomic and demographic factors are controlled. In the RRR specification, being Muslim (vs. non-Muslim) is associated with a lower relative risk of downward mobility (RRR = 0.51, $p = .274$) and a slightly higher relative risk of upward mobility (RRR = 1.16, $p = .510$) relative to immobility, but neither effect is statistically significant. Likewise, the AMEs are small and imprecisely estimated: the predicted probability of downward mobility is about 2.3 percentage points lower for Muslim women (AME = −0.023, $p = .242$), and the probability of upward mobility is about 3.2 points higher (AME = 0.032, $p = .392$), but neither difference is statistically distinguishable from zero. Taken together, these results indicate that the religious group membership does not exert an independent influence on directional mobility net of the included controls. This pattern indicates that the large

bivariate differences in mobility observed in the earlier cross-tabulations are largely explained by differences in background characteristics (such as mothers' occupational positions and daughters' own educational attainment), rather than by religious affiliation per se. Conditional on these covariates, Muslim and non-Muslim women exhibit broadly similar probabilities of being downwardly mobile, upwardly mobile, or immobile.

In contrast, occupational status exerts powerful and statistically significant effects in opposite directions for the two mobility outcomes. For downward mobility, the relative risk ratio is very large and highly significant ($RRR = 4.75, p < .001$). This implies that, holding other factors constant, each one-step increase in the mother's occupational status (on the underlying scale used in the study) is associated with a nearly fivefold increase in the relative risk of the daughter being downwardly mobile rather than immobile. The AME corroborates this: increasing mother's status by one step raises the predicted probability of downward mobility by about 5.1 percentage points on average ($AME = 0.051, p < .001$), holding everything else constant. For upward mobility, the effect works in the opposite direction. Each step increase in maternal occupational status is associated with a reduction in the relative risk of upward rather than immobile outcomes by about one-third ($RRR = 0.677, p = .004$), indicating that daughters of more advantaged mothers are *less* likely to experience upward mobility relative to immobility. The AME confirms that each additional step in mother's occupational status reduces the probability of upward mobility by about 8.3 percentage points ($AME = -0.083, p < .001$). These patterns are consistent with an opportunity-constraint structure: daughters of low-status mothers have a low risk of further downward moves but considerable scope for upward shifts, whereas daughters of high-status mothers have limited room for additional upward movement and are more exposed to downward movement. The large magnitude and high precision of these coefficients underline the central role of maternal occupational position in shaping both upward and downward mobility risks.

Daughters' educational attainment emerges as a key protective factor against downward mobility and a strong driver of upward mobility. The RRR for downward mobility is slightly below one ($RRR = 0.879$, $p = .147$), suggesting that additional schooling might modestly reduce the relative risk of downward movement relative to immobility, but the effect is not statistically significant. However, when translated into changes in predicted probabilities, education shows a small but statistically detectable association: each additional year of schooling reduces the probability of downward mobility by around 0.6 percentage points on average ($AME = -0.006$, $p = .005$). By contrast, the effect on upward mobility is both statistically and substantively large. Each additional year of schooling increases the relative risk of upward versus immobile outcomes by about 25% ($RRR = 1.25$, $p < .001$). In terms of marginal effects, an additional year of education raises the probability of upward mobility by approximately 4 percentage points ($AME = 0.04$, $p < .001$), holding other variables constant. These results confirm that education is a key channel of intergenerational advancement: it substantially increases the likelihood that daughters move into higher-status occupations than their mothers, even after controlling for mothers' occupational status and other household and demographic characteristics, while offering only limited protection against downward movement from higher origins.

Age has no significant effect on downward mobility in either relative ($RRR = 0.989$, $p = .841$) or absolute terms ($AME = -0.001$, $p = .691$). For upward mobility, the effect of age is small but marginally statistically significant. Each additional year of age increases the relative risk of upward mobility by 3.0% ($RRR = 1.030$, $p = .050$) and raises the absolute probability by 0.5 percentage points ($AME = 0.005$, $p = .041$). This pattern is consistent with the interpretation that occupational advancement accumulates over time: older respondents are slightly more likely to experience upward mobility, possibly reflecting longer exposure to labor market opportunities, career progression over the life course, or accumulated work experience. However, age per se does not substantially drive downward mobility once other factors are controlled.

The three variables capturing family structure and economic responsibilities exert clear and differentiated effects on upward mobility, while playing a minor role in downward mobility. The number of children has no significant effect on downward mobility (RRR = 0.952, $p = .930$; AME = 0.003, $p = .879$), but it is a substantial barrier to upward mobility. Each additional child reduces the relative risk of upward mobility by 31.6% (RRR = 0.684, $p = .006$), and lowers the predicted probability of upward mobility by around 6.5 percentage points (AME = -0.065, $p = .006$). This suggests that childbearing constraints are more relevant for limiting upward moves than for precipitating downward falls, perhaps because additional children constrain the time and flexibility needed for occupational advancement. Similarly, the number of economically dependent household members does not significantly affect downward mobility (RRR = 1.012, $p = .972$; AME = 0.008, $p = .444$). However, it has a strong negative association with upward mobility: each additional dependent approximately halves the relative risk of upward versus immobile outcomes (RRR = 0.509, $p < .001$) and reduces the probability of upward mobility by 11.6 percentage points (AME = -0.116, $p < .001$). This pattern indicates that heavier dependency burdens make it more difficult for women to climb the occupational ladder, even if they do not significantly increase the likelihood of falling below their mothers' occupational positions.

Household size is not significantly associated with downward mobility (RRR = 1.185, $p = .499$; AME = 0.002, $p = .83$), but it strongly favours upward mobility. Each additional household member raises the relative risk of upward versus immobile outcomes by about 40% (RRR = 1.40, $p = .001$), and the AME implies that each additional household member is associated with a 5.6 percentage-point higher probability of upward mobility (AME = 0.056, $p < .001$). This may reflect the benefits of larger households in terms of providing more potential labour-sharing and support for childcare and domestic work, thereby enabling women to pursue and sustain upward occupational moves.

Geographic location operates primarily as a risk factor for status decline. Residing in a rural area significantly increases the relative risk of downward mobility

(RRR = 2.775, $p = .078$) compared to urban or semi-urban locations. The marginal effect indicates that rural residence raises the probability of downward movement by 2.9 percentage points (AME = 0.029, $p = .084$). While, for upward mobility, rural residence is not statistically significant (RRR = 1.145, $p = .491$; AME = 0.012, $p = .710$). This suggests that, conditional on education, maternal occupation, and household characteristics, rural residence does not systematically hinder upward mobility, although there is some evidence of slightly higher downward risk among rural women.

6.7.2.5 Conclusion

The multinomial logistic regression analysis refines the understanding of intergenerational mobility by isolating the determinants of directional movement. The results demonstrate that the direction of intergenerational occupational mobility among women in the sample is shaped less by religion itself and more by a combination of parental background, individual educational attainment, and family responsibilities. Religious identity does not exert an independent effect on mobility direction once maternal occupation, education, and household factors are taken into account. The probabilities of upward, downward, and immobile trajectories are statistically similar for Muslim and non-Muslim women after adjusting for these covariates, indicating that observed religious differences in raw distributions are largely compositional rather than intrinsic.

Maternal occupation and daughter's education jointly organise the opportunity structure of intergenerational mobility. Daughters of low-status mothers face a low risk of further downward moves but enjoy substantial prospects of upward advancement, especially when they have more schooling. Daughters from high-status origins, in contrast, have limited scope for additional upward movement and face a greater risk of downward trajectories. Daughters' own education substantially reduces the risk of downward mobility and is a powerful driver of upward movement. Family responsibilities, especially larger numbers of children and dependents, are strongly associated with lower probabilities of upward mobility, whereas their role in generating downward moves is limited. Rural residence is associated with a

modestly higher risk of downward mobility but no systematic difference in upward mobility once other factors are controlled.

Overall, these results portray an intergenerational process in which occupational outcomes are jointly determined by inherited position and individual achievements, with education offering a meaningful pathway to upward movement but operating within structural constraints imposed by family obligations and the mother's initial occupational location.

6.7.3 Determinants of the Magnitude of Intergenerational Occupational Mobility: Evidence from OLS Regression Analysis

6.7.3.1 Introduction and Rationale

While the multinomial logit model in Section 6.7.2 identified the determinants of the *direction* of occupational mobility (downward, immobile, upward), it does not quantify the *distance* of occupational movement. To examine the determinants of the *magnitude* of intergenerational occupational mobility, this subsection models the occupational step-difference (OSD) as a continuous outcome. The OSD captures the net occupational distance between daughters and mothers and is therefore directly suited to estimating average increments in mobility magnitude associated with human capital and household constraints.

Although the occupational classes underlying the OSD are formally ordinal, standard practice in social stratification research supports treating mobility scales with sufficient range as "quasi-interval" outcomes for regression analysis (Breen, 2004; Hout, 1983; Winship & Mare, 1984). The 11-point range of the OSD variable—spanning from -5 to $+5$ —offers substantial variation, approximating a continuous distribution that allows for the interpretation of mean shifts in mobility distance. Methodological authorities in categorical data analysis similarly note that once an ordinal variable attains seven or more levels, linear regression behaves very similarly to models designed for continuous variables, with negligible loss of information or distortion of estimates (Agresti, 2013; Long, 1997). The OSD variable comfortably exceeds this threshold, providing sufficient granularity for quasi-

interval treatment. This approach is particularly appropriate when the objective is to estimate the *average magnitude* of intergenerational change rather than the precise distance between adjacent occupational categories (Treiman, 1977; Xie, 1992). Following the conventions established by Fields and Ok (1999) and widely applied in mobility studies (e.g., Hout, 2018; Torche, 2015), we utilise OLS regression. This approach offers the advantage of direct interpretability, allowing us to quantify the net "occupational distance" gained or lost associated with each additional year of schooling or change in religious affiliation, essentially treating the step difference as a linear metric of social distance. As OLS inference can be affected by heteroskedasticity and non-normal errors in cross-sectional settings, the model is estimated with heteroskedasticity-consistent robust standard errors (HC3) for all substantive inference.

6.7.3.2 Model Specification and Variable Description

The econometric model used to analyse the determinants of the OSD is specified as follows:

$$\text{OSD}_i = \beta_0 + \beta_1 (\text{Religion}_i) + \beta_2 (\text{Mother Occupation}_i) + \beta_3 (\text{Education}_i) + \beta_4 (\text{Age}_i) + \beta_5 (\text{Num. Children}_i) + \beta_6 (\text{Household Size}_i) + \beta_7 (\text{Num. Dependents}_i) + \beta_8 (\text{Location}_i) + \varepsilon_i$$

Where:

OSD_i = occupational step-difference for respondent i (dependent variable)

β_0 = the intercept

Religion_i = Binary indicator for religion (1 = Muslim, 0 = otherwise).

$\text{Mother Occupation}_i$ = Daughter i 's mother's occupation code(0-5).

Education_i = Daughter i 's years of completed schooling.

Age_i = Respondent's age (years).

Location_i = Dummy variable for residential location (1 = Rural, 0 = otherwise).

ε_i = Random error term.

Descriptive statistics for all variables included in the regression model are summarised in Table 6.15.

Table 6.15

Descriptive Statistics of Variables Used in the Intergenerational Occupational Mobility Regression

Sl. No.	Variable	Obs.	Mean	SD	Min.	Max.
1	Occupational Step-Difference (OSD)	645	1.00	1.99	−5	5
2	Mother's Occupational Status (0–5)	645	0.52	1.30	0	5
3	Education (schooling years)	645	14.15	3.92	0	25
4	Age (years)	645	37.73	9.33	25	54
5	Household size	645	4.53	1.52	1	13
6	Number of dependent members	645	2.52	1.40	0	9
7	Number of children	645	1.67	1.09	0	5
8	Religion (Muslim = 1)	645	0.57	0.50	0	1
9	Residential location (Rural = 1)	645	0.61	0.49	0	1

Source: Computed from the primary survey data (2025).

6.7.3.3 Regression Model Adequacy and Diagnostics

A comprehensive set of diagnostic tests was conducted to assess the adequacy of the OLS specification, with results detailed in Table 6.16. The Ramsey RESET test ($F(3, 633) = 0.67, p = .571$) and the link test (hatsq: $t = 0.56, p = .574$) indicated no evidence of functional form misspecification or omitted nonlinearities.

Tests for heteroskedasticity produced mixed results. While the Breusch-Pagan test under standard assumptions did not indicate heteroskedasticity ($\chi^2(1) = 0.37, p = .543$), the more general White test was significant ($\chi^2(42) = 78.36, p = .001$), suggesting the presence of heteroskedastic errors. Consequently, all reported inferences are based on heteroscedasticity-consistent (HC3) robust standard errors, which yield valid hypothesis tests even under non-constant error variance.

Multicollinearity was assessed using variance inflation factors (VIFs). The mean VIF was 1.64, with a maximum of 2.18, well below the conventional threshold of concern, indicating no problematic multicollinearity. The Shapiro-Wilk test ($W = 0.961, p < .001$) indicated that the residuals deviated from a normal distribution. However, visual inspection of the residual histogram (Figure 6.5) and the normal P-P

plot (Figure 6.6) showed that the deviation was not severe, with the distribution approximating normality, albeit with slightly heavier tails. Given the large sample size ($N = 645$), the central limit theorem ensures the asymptotic normality of the OLS estimators, implying that OLS inference remains valid despite minor residual non-normality (Wooldridge, 2013). Furthermore, the use of robust standard errors protects against distortions in inference due to non-normality and heteroscedasticity. The maximum Cook's distance was 0.024, confirming the absence of influential outliers. Collectively, these diagnostics support the OLS model as a robust and appropriate framework for analysing the determinants of occupational mobility magnitude.

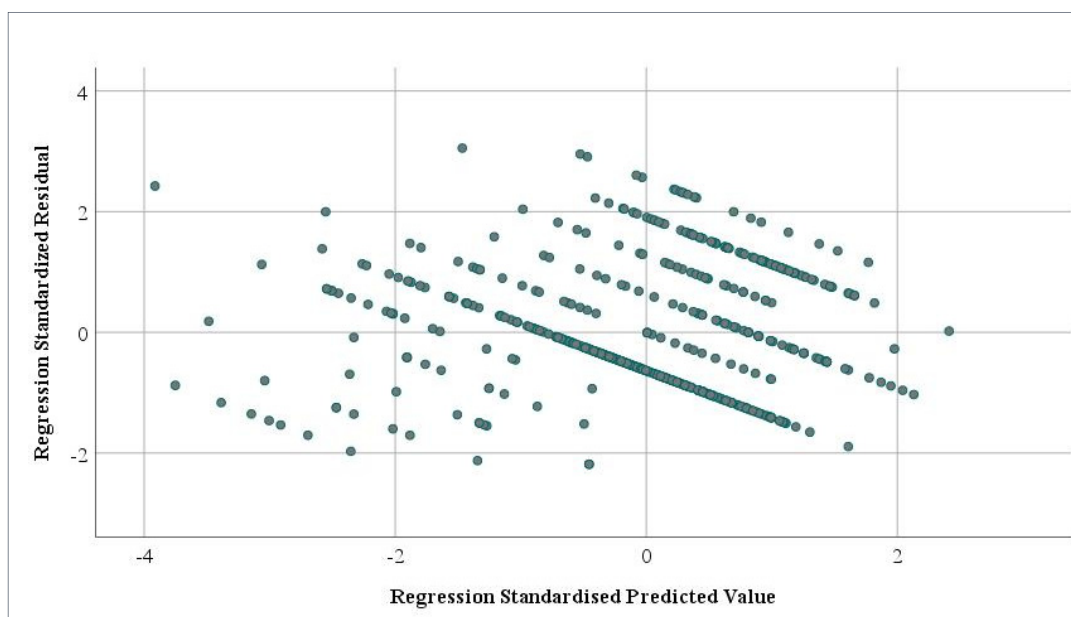
Table 6.16

Regression Model Adequacy and Diagnostic Test Results (Occupational Mobility OLS Model)

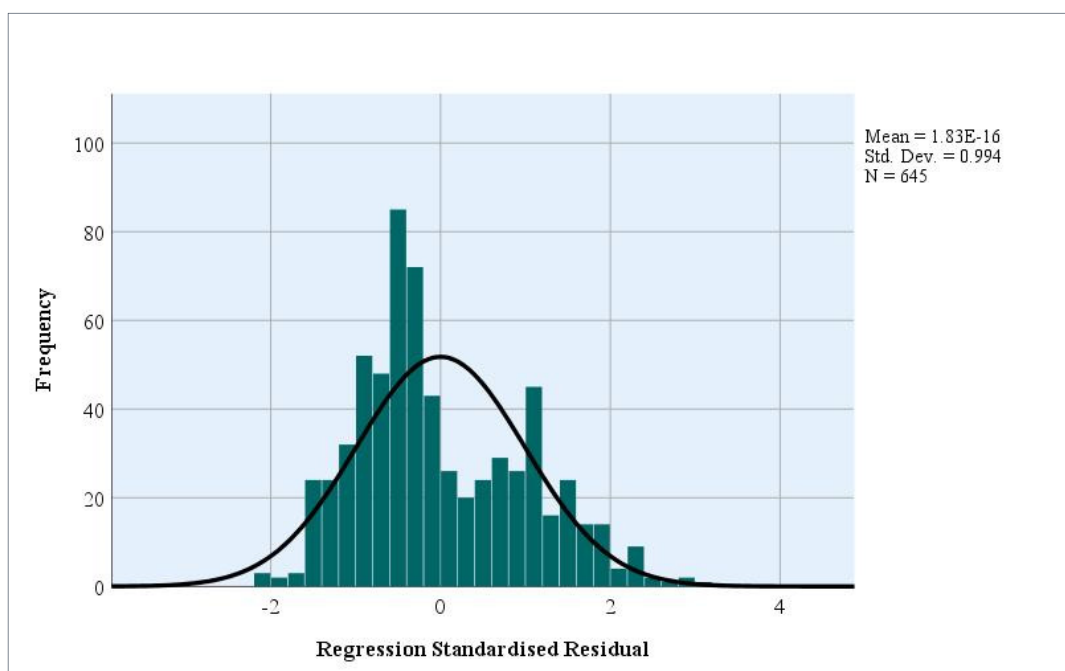
Sl. No.	Test (purpose)	Test statistic	<i>p</i> -value	Inference
1	Ramsey RESET test (functional form/ omitted variables)	$F(3, 633) = 0.67$	.571	No evidence of model misspecification. The selected functional form is appropriate.
2	Breusch–Pagan / Cook–Weisberg test (heteroscedasticity, i.i.d. assumption)	$\chi^2(1) = 0.37$	.543	No evidence of heteroscedasticity under the i.i.d. assumption.
3	Breusch–Pagan / Cook–Weisberg test (heteroscedasticity, normal-errors assumption)	$\chi^2(1) = 0.30$	.586	No evidence of heteroscedasticity under the normality assumption.
4	White test (general heteroskedasticity)	$\chi^2(42) = 78.36$	.001	Evidence of heteroskedasticity detected. Robust standard errors are recommended.
5	Link test (model specification check)	<i>Hatsq</i> : $t = 0.56$	.574	No evidence of omitted non-linear terms (corroborates RESET).
6	VIF (multicollinearity)	Mean VIF = 1.64; Max VIF = 2.18	—	No multicollinearity concerns; all VIF < 5 (well below threshold).
7	Shapiro–Wilk test (normality of residuals)	$W = 0.961$ ($z = 6.81$)	< .001	Residuals deviate from normality, but with $n = 645$ and robust SEs, OLS inference remains valid.
8	Cook's distance (influential observations)	Max Cook's $D = 0.024$	—	No influential outliers present (all $D < 1$).

Note. Serial correlation tests do not apply to this cross-sectional model. Given the evidence of general heteroskedasticity from the White test and minor deviations from normality, all substantive inference in the thesis uses robust (HC-type) standard errors.

Source: Author's estimation based on primary survey data (2025).

Figure 6.4*Residuals Plotted Against Predicted Values from the OLS Model*

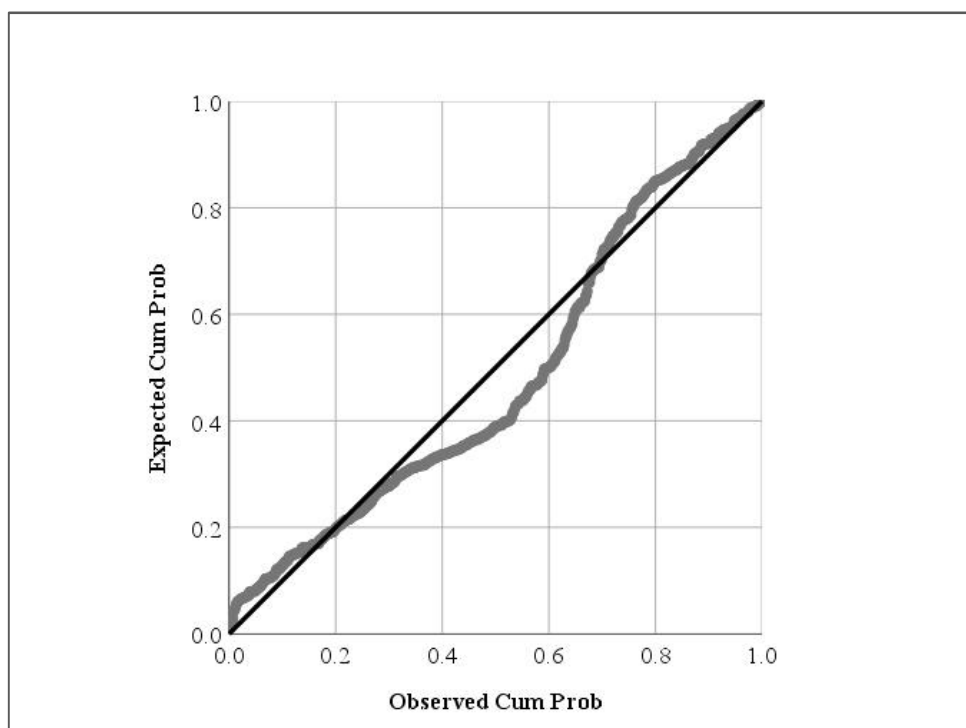
Source: Constructed from the primary survey data (2025).

Figure 6.5*Histogram of OLS Residuals with Normal Curve Overlay*

Source: Constructed from the primary survey data (2025).

Figure 6.6

Normal P-P Plot of Regression Standardised Residual



Source: Constructed from the primary survey data (2025).

6.7.3.4 Results and Discussion

Table 6.17 reports the OLS estimates for the determinants of occupational mobility magnitude, with robust (HC3) standard errors. The model as a whole is statistically significant ($F(8, 636) = 43.39, p < .001$) and demonstrates strong explanatory power, accounting for approximately 38% of the variation in the occupational step-difference ($R^2 = .382$).

Crucially, after controlling for these factors, Religion does not significantly predict the magnitude of mobility. The coefficient for Muslim identity is positive but statistically non-significant, indicating that, after controlling for maternal occupation, education, age, and household structure, Muslim women do not experience a significantly different magnitude of net occupational mobility compared to non-Muslim women ($B = 0.173, \beta = .043, p = .263$). This finding parallels the multinomial results for mobility direction and suggests that the gross

group differences documented in the descriptive sections are largely attributable to compositional differences in origins and resources rather than a net religious-group penalty or premium in occupational mobility distance.

Table 6.17

Multiple Linear Regression OLS Estimation Results for Occupational Step-Difference (OSD)

Predictor	Unstandardised Coefficients (<i>B</i>)	Robust Std. Error (HC3)	Standardised Coefficients (β)	<i>t</i>	<i>p</i>	VIF
(Constant)	-1.461**	.589	—	-2.48	.013	—
Religion (Muslim = 1)	.173	.155	.043	1.12	.263	1.29
Mother's Occupational Status	-.896***	.058	-.587	-15.37	< .001	1.16
Education (Years)	.167**	.019	.329	8.65	< .001	1.53
Age	.021**	.010	.100	2.21	.027	2.00
Number of Children	-.161*	.060	-.088	-1.87	.062	2.10
Number of Dependent Household Members	-.380***	.076	-.267	-5.01	< .001	2.18
Household Size	.211***	.086	.161	3.53	< .001	1.86
Location (Rural = 1)	-.115	.129	-.028	-0.89	.373	1.04
R^2	0.382		Number of obs.			645
$F(8,636)$	43.39		Prob > F			< .001
Adjusted R^2	0.375		Root MSE			1.574

Note. *** $p < .01$, ** $p < .05$, * $p < .1$

By contrast, mother's occupational status exerted the strongest and most significant negative effect on the daughter's net mobility ($B = -0.896$, $\beta = -.587$, $p < .001$). For every one-step increase in the mother's occupational status, the daughter's expected net mobility advantage decreases by nearly 0.9 steps. Interpreted substantively, this indicates that daughters originating from higher-status maternal occupations have less "room" for net upward distance (a ceiling effect), while those from low-status origins have greater scope to register positive mobility distance, holding education and other covariates constant. This result is consistent with

standard mobility logic: as origin status rises, mobility distance is increasingly constrained by the upper bound of the occupational hierarchy.

Consistent with the directional analysis, Education is a powerful driver of mobility magnitude ($B = 0.167$, $\beta = .329$, $p < .001$), implying that education systematically shifts women toward larger positive occupational distance relative to their mothers. Each additional year of schooling is associated with an expected increase of approximately one-sixth of an occupational step in net mobility. In the magnitude framework, this coefficient provides direct evidence that schooling increases the average net occupational gains, above and beyond the maternal occupational starting point. This confirms that the mobility process is strongly meritocratic; human capital accumulation translates directly into greater occupational distance from the point of origin.

Among demographic controls, age has a positive association with mobility magnitude ($B = 0.021$, $\beta = .100$, $p = .027$), suggesting modest occupational gains accumulate over the life course. In contrast, family responsibilities significantly constrained mobility. Both the number of children ($B = -0.161$, $\beta = -.088$, $p = .062$) and, more strongly, the number of dependents ($B = -0.380$, $\beta = -.267$, $p < .001$) were associated with reduced net occupational gains. These findings suggest that caregiving and economic support burdens limit women's capacity to achieve occupational advancement.

In contrast, household size shows a positive association with mobility magnitude ($B = 0.211$, $\beta = .161$, $p < .001$), potentially indicating that larger households provide a support network that facilitates labor market engagement and occupational progression. Finally, rural residence was not a statistically significant predictor of mobility magnitude ($B = -0.115$, $\beta = -.028$, $p = .373$), indicating that the magnitude of movement does not differ systematically by geography once other factors are controlled.

6.7.3.5 Conclusion

The OLS regression analysis provides a precise quantification of the factors driving the magnitude of intergenerational occupational change. Consistent with the directional analysis in the preceding section, the results confirm that, once these covariates are controlled, religious identity is not a statistically significant determinant of the occupational mobility magnitude. Instead, the magnitude of mobility is governed primarily by the interplay of origin status, education, and household responsibility constraints. Maternal occupational position exerts a strong limiting influence on net mobility distance, while daughters' education consistently expands occupational distance upward. Household responsibilities—especially dependency burden and, to a lesser extent, childbearing—reduce the net distance achieved, whereas larger household size appears to operate as a facilitating resource, potentially reflecting support mechanisms that enable women's occupational advancement. This result underscores the importance of structural and human capital factors in determining not just the direction, but also the extent, of intergenerational occupational change.

6.8 Perceived Intergenerational Occupational Mobility of Muslim and Non-Muslim Women in Kerala

6.8.1 Introduction

Up to this point, the analysis of intergenerational occupational mobility has relied entirely on objective indicators—transition matrices, mobility indices, the occupational step-difference (OSD), and regression models. These measures reveal how far daughters actually move in the occupational hierarchy relative to their mothers. However, intergenerational mobility is also a lived experience. A complete analysis of intergenerational mobility necessitates an examination of both its objective and subjective components (Houle, 2011).

Perceptions of mobility capture dimensions that are not fully reflected in formal occupational codes: perceived access to jobs, the prestige attached to work, financial autonomy, exposure to social and cultural barriers, the safety and quality of working conditions, and the material standard of living that an occupation affords.

A woman may, for example, occupy a higher-status job on an objective scale but still feel that her work is precarious, underpaid, or socially devalued when compared with her mother's experience. Conversely, modest upward steps in the occupational hierarchy may be experienced as large improvements if they bring greater freedom, security, or dignity (Kraus & Tan, 2015).

To incorporate this subjective dimension, this section develops and validates a Perceived Intergenerational Occupational Mobility (PIOM) scale and uses it to facilitate group comparisons in perceived occupational mobility. Accordingly, the present analysis (a) documents the item development and construct validation of the PIOM scale, (b) compares perceived occupational mobility scores across religious groups using appropriate statistical methods, and (c) addresses a salient paradox: the finding that Muslim women, despite evidencing higher levels of objective intergenerational mobility, report significantly lower perceived mobility compared to their non-Muslim peers. This analysis adds a vital layer of subjective interpretation, thereby enriching the understanding of occupational change in Kerala.

6.8.2 Scale Development and Psychometric Validation

To operationalise the subjective dimension of occupational mobility, a structured scale development process was implemented. An initial pool of items was generated to represent key comparative domains such as access to employment opportunities, occupational prestige, financial independence, barriers to workforce participation, working conditions, job security, and standard of living outcomes. This pool was subsequently refined through expert evaluation and pilot testing, resulting in a seven-item Perceived Intergenerational Occupational Mobility (PIOM) scale. Each item is phrased comparatively, asking the respondent to evaluate her current occupational situation against that of her mother on a 5-point Likert scale ranging from 0 (Strongly Disagree) to 4 (Strongly Agree). The final PIOM items and their conceptual domains are reported in Table 6.18.

Table 6.18*Perceived Intergenerational Occupational Mobility (PIOM) Scale Items*

Item Code	Statement	Comparative Domain
PIOM1	I had greater access to employment opportunities than my mother.	Access / Opportunity
PIOM2	The occupation I hold has higher social prestige than my mother's occupation.	Occupational Status
PIOM3	My employment provides me with greater financial independence than my mother achieved.	Financial Independence
PIOM4	I faced fewer social or cultural barriers to entering the workforce than my mother faced.	Socio-cultural Barriers
PIOM5	My working conditions (e.g., safety, hours, environment) are better than those my mother experienced.	Working Conditions
PIOM6	I enjoy greater job security in my career than my mother did.	Job Security
PIOM7	My occupation enables a better standard of living than my mother's occupation did.	Standard of Living

Note. Items are rated on a 5-point scale: 0 = Strongly Disagree to 4 = Strongly Agree.

6.8.2.1 Exploratory Factor Analysis

An exploratory factor analysis (EFA) was conducted on the full sample ($N = 704$) to assess the underlying factor structure of the seven PIOM items and to assess whether they form a coherent unidimensional scale. Maximum-likelihood extraction was chosen to maintain consistency with the subsequent confirmatory factor analysis. The data were deemed highly suitable for factor analysis, as reflected by a high Kaiser–Meyer–Olkin measure of sampling adequacy ($KMO = .953$) and a statistically significant Bartlett's test of sphericity, $\chi^2 (21) = 10,865.11$, $p < .001$, confirming that the item correlations differed significantly from the identity matrix. Together, these diagnostics indicated that the data contained sufficient common variance for factor extraction.

The EFA results yielded a clear unidimensional solution. Examination of the eigenvalues and the scree plot (Figure 6.7) identified a single dominant factor with an eigenvalue of 6.50. This single factor explained a remarkably high

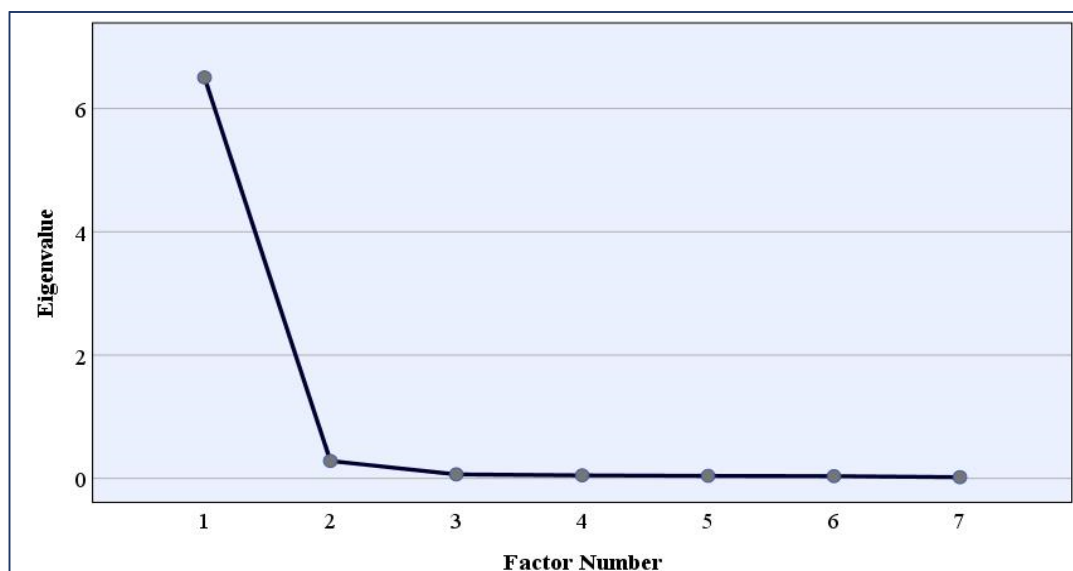
proportion of the variance (91.93%), indicating that the PIOM items largely represent a single underlying construct of perceived intergenerational occupational mobility. As reported in Table 6.19, all seven items exhibited very strong factor loadings, ranging from .837 to .988, and communalities were uniformly high, suggesting that each item contributed meaningfully to the common latent dimension.

Table 6.19

EFA Results for the Perceived Intergenerational Occupational Mobility Scale (N = 704)

Sl. No.	Item Statement	Item Code	Loading	Communality
1	I had greater access to employment opportunities than my mother.	PIOM1	.988	.951
2	The occupation I hold has higher social prestige than my mother's occupation.	PIOM2	.987	.938
3	My employment provides me with greater financial independence than my mother achieved.	PIOM3	.978	.956
4	I faced fewer social or cultural barriers to entering the workforce than my mother faced.	PIOM4	.975	.940
5	My working conditions (e.g., safety, hours, environment) are better than those my mother experienced.	PIOM5	.969	.701
6	I enjoy greater job security in my career than my mother did.	PIOM6	.968	.973
7	My occupation enables a better standard of living than my mother's occupation did.	PIOM7	.837	.976
Eigenvalue: 6.50				
% Variance explained: 91.93				
Cronbach's α : .984				

Note. Extraction Method: Maximum Likelihood.

Figure 6.7*Scree Plot for Determining the Number of Factors to be Retained*

Source: Primary survey data, 2025.

Internal consistency was outstanding. The PIOM scale yielded a Cronbach's alpha of .984, which indicates extremely high inter-item reliability and suggests that the items form a tight, internally coherent scale. In psychometric terms, the EFA results therefore support treating the seven items as indicators of a single, highly reliable perceived occupational mobility factor.

6.8.2.2 Confirmatory Factor Analysis

To validate the factor structure suggested by the EFA, a single-factor confirmatory factor analysis (CFA) was estimated in AMOS using maximum-likelihood estimation. The measurement model specified one latent construct—perceived intergenerational occupational mobility—reflected by the seven observed PIOM indicators (PIOM1–PIOM7).

Model fit was evaluated using multiple indices recommended in the SEM literature, including CMIN/DF, CFI, SRMR, RMSEA, and PClose (Hu & Bentler, 1999). The model fit indices, presented in Table 6.20, demonstrate an excellent fit to the observed data. These results support the adequacy of the hypothesised one-factor structure.

Table 6.20

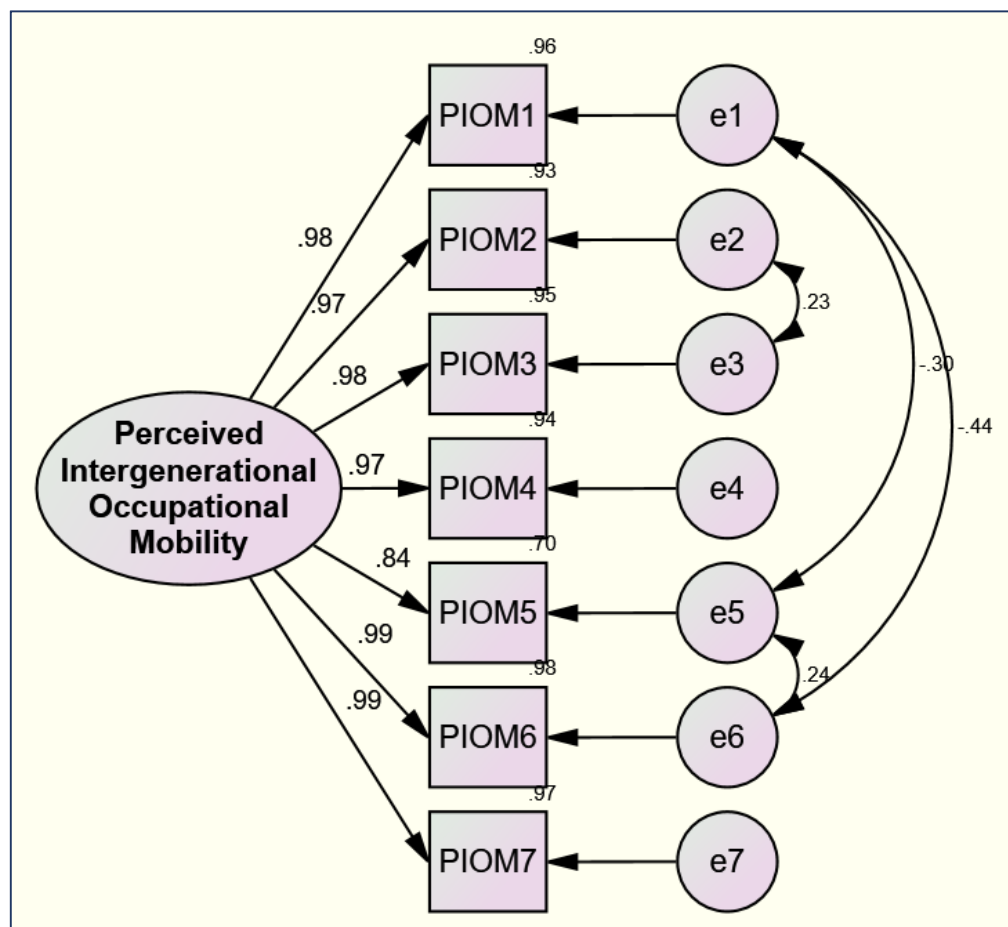
Model Fit Indices for the Single-Factor PIOM Measurement Model

Sl. No.	Measure	Estimate	Threshold	Interpretation
1	CMIN	27.355	--	--
2	DF	10	--	--
3	CMIN/DF	2.736	Between 1 and 3	Excellent
4	CFI	0.998	> 0.95	Excellent
5	SRMR	0.003	< 0.08	Excellent
6	RMSEA	0.050	< 0.06	Excellent
7	PClose	0.470	> 0.05	Excellent

Note. CMIN/DF = chi-square/degrees of freedom ratio; CFI = comparative fit index; SRMR = standardised root mean residual; RMSEA = root mean square error of approximation. Thresholds follow Hu and Bentler (1999).

Figure 6.8

The Estimated Measurement (CFA) Model of the Single-Factor PIOM Scale



Source: Constructed from the primary survey data (2025)

Table 6.21 reports the factor loadings and validity metrics. All standardised factor loadings were statistically significant ($p < .001$) and were uniformly high, ranging from .837 to .989, indicating strong convergence of the observed items on the latent construct. Evidence for convergent validity and reliability was further demonstrated by a high average variance extracted (AVE = 0.919) and composite reliability (CR = 0.988), both far exceeding recommended benchmarks (Fornell & Larcker, 1981). In combination with the EFA evidence, these results confirm that the PIOM instrument functions as a coherent, internally consistent, and unidimensional measure of perceived intergenerational occupational mobility.

Table 6.21

CFA Results for the Perceived Occupational Mobility Factor (N = 704)

Indicator	Unstandardised Factor Loadings	Standardised Factor Loadings	<i>S.E.</i>	<i>C.R.</i>	<i>p</i>
PIOM1	1.000	.980	—	—	< .001
PIOM2	.967	.966	.012	78.262	< .001
PIOM3	.978	.975	.011	86.359	< .001
PIOM4	.959	.969	.012	80.642	< .001
PIOM5	.443	.837	.012	35.536	< .001
PIOM6	.994	.989	.011	86.976	< .001
PIOM7	.996	.987	.010	100.661	< .001

Composite reliability (CR): 0.988

Average variance extracted (AVE): 0.919

Note. Estimation method = maximum likelihood.

6.8.2.3 Measurement Invariance across Religious Groups

Before any meaningful group comparison, it is essential to establish that the PIOM scale operates in a conceptually and psychometrically equivalent manner for both Muslim and non-Muslim women. Without this assurance, observed group differences could be confounded by measurement bias rather than reflecting genuine disparities in the underlying construct. To evaluate this, a sequence of multi-group confirmatory factor analyses (MG-CFAs) was conducted to test for measurement invariance, following the established hierarchical procedure of configural, metric,

and scalar invariance (Chen, 2007; Putnick & Bornstein, 2016). The results of this analysis are summarized in Table 6.22.

Table 6.22

Measurement Invariance Testing Across Religious Groups for the PIOM Scale (N = 704)

Model	Description	χ^2	df	p	CFI	RMSEA [90% CI]	Δ CFI	Δ RMSEA
A	Configural	223.29	28	< .001	.982	.100 [.088, .112]	–	–
B	Metric	232.26	34	< .001	.982	.091 [.080, .102]	.000	–.009
C	Scalar	237.44	40	< .001	.982	.084 [.074, .094]	.000	–.007

Note. Models estimated using multi-group CFA with maximum likelihood. Changes in fit are computed relative to the less constrained model. Invariance is typically supported when Δ CFI $\geq$.010 and Δ RMSEA $\leq$.015 (Chen, 2007; Cheung & Rensvold, 2002).

The configural invariance model, which specified the same single-factor structure in both groups while allowing parameters to be freely estimated, demonstrated acceptable fit, CFI = .982, RMSEA = .100, supporting the conclusion that the PIOM items reflect a comparable one-factor configuration across Muslim and non-Muslim women.

Next, metric invariance was tested by constraining factor loadings to equality across groups. This tests whether the origin point (zero-point) of the latent variable scale is equivalent, which is a prerequisite for comparing latent mean scores. Model fit remained essentially unchanged, CFI = .982, RMSEA = .091, with Δ CFI = .000 and Δ RMSEA = –.009, which satisfies conventional criteria for invariance. This result indicates that the PIOM indicators relate to the underlying construct of occupational mobility with the same strength for both religious groups, establishing a common measurement unit.

Finally, scalar invariance was assessed by additionally constraining all item intercepts to be equal across groups. This tests whether the origin point (zero-point) of the latent variable scale is equivalent, which is a prerequisite for comparing latent mean scores. The scalar model also showed a stable fit, CFI = .982, RMSEA = .084, and changes in fit were trivial (Δ CFI = .000, Δ RMSEA = –.007). Therefore, scalar invariance is established for the PIOM scale across religious groups. Consequently, any observed differences in PIOM scores between Muslim and non-Muslim women

can be interpreted as reflecting true differences in the perceived intergenerational occupational mobility, rather than artefacts of measurement bias.

The establishment of configural, metric, and scalar invariance provides robust evidence that the PIOM scale measures the same underlying construct in the same way across religious groups. The scale is therefore psychometrically sound for conducting meaningful and unbiased group comparisons of the subjective occupational mobility of women across religious groups.

6.8.3 Comparison of Perceived Intergenerational Occupational Mobility Across Religious Groups

Following the psychometric validation, a composite PIOM score was calculated for each respondent by averaging the seven scale item responses, with higher values indicating a stronger perceived occupational advancement relative to their mother. This subsection compares these scores to determine if the subjective experience of intergenerational occupational mobility differs systematically between Muslim and non-Muslim women.

Table 6.23 presents the descriptive statistics for the PIOM score and the results of the independent samples t-test comparing the two groups. Figure 6.9 provides a visual comparison of the group-level differences. An examination of the group means reveals a notable disparity in perceived mobility. Non-Muslim women reported considerably higher levels of perceived occupational advancement compared to their Muslim counterparts. Specifically, the average PIOM score for non-Muslims was approximately 0.60 points higher than that for Muslims on the 5-point scale.

An independent-samples t-test was conducted to examine whether perceived occupational mobility differs systematically between Muslim and non-Muslim women. Levene's test indicated homogeneity of variances, $F(1, 702) = 2.05, p = .153$, and therefore, pooled variance estimates were used for inference. The t-test revealed a statistically significant difference in perceived occupational mobility between the two groups, $t(702) = -5.33, p < .001$. The estimated effect size (Cohen's $d = 0.41$) indicates a moderate group difference. This result signifies that, on average,

non-Muslim women reported higher levels of perceived intergenerational occupational mobility than their Muslim counterparts. This finding highlights a distinct "perception gap." Despite evidence from earlier sections indicating substantial objective occupational mobility among Muslim women, their subjective assessments of occupational advancement remain significantly lower than those of non-Muslim women. This stands in contrast to non-Muslim women, whose higher subjective scores align more closely with their generally higher absolute occupational attainment.

Table 6.23

Comparison of Perceived Occupational Mobility Across Religious Groups

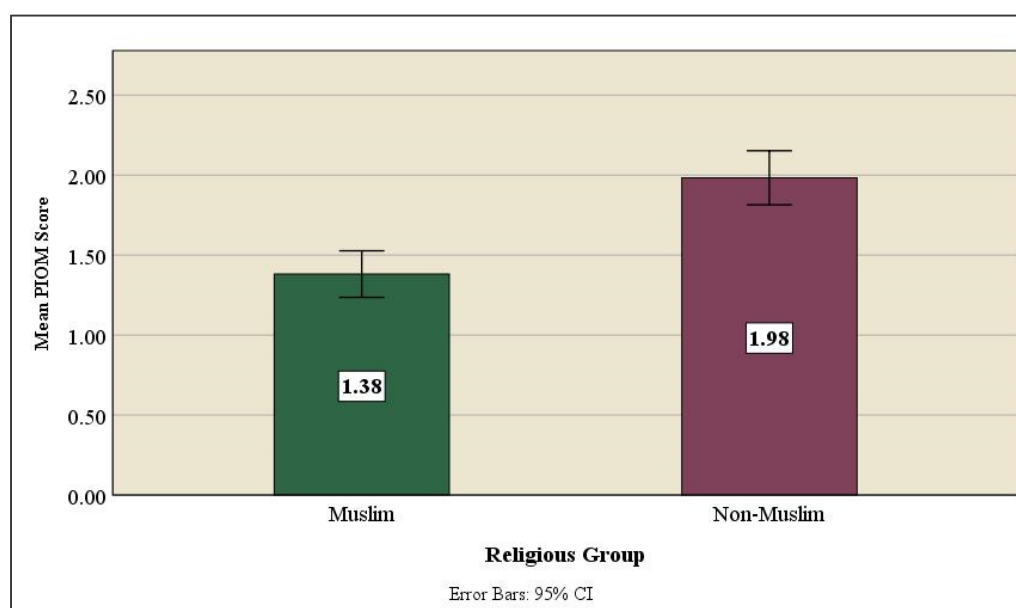
Sl. No.	Religious Group	Mean	SD	Skewness	Kurtosis	N	Independent Samples t-Test Results
1	Muslim	1.38	1.46	0.75	-1.20	392	$t = -5.333$ $df = 702$ $p < .001$ Cohen's $d \approx 0.41$
2	Non-Muslim	1.98	1.52	0.01	-1.70	312	
	Total	1.65	1.52	0.40	-1.59	704	

Note. Levene's test confirmed the equality of variances ($F(1, 702) = 2.050, p = 0.135$). Cohen's d measures the effect size.

Source: Computed from the primary survey data (2025).

Figure 6.9

Comparison of Perceived Occupational Mobility across Religious Groups



Source: Constructed from primary survey data (2025).

In summary, the comparative analysis reveals a significant paradox: Muslim women perceive their intergenerational occupational progress less favorably than non-Muslim women, despite objective evidence of mobility. These findings point to a critical objective–subjective disconnect in occupational mobility outcomes. While structural movement across occupational categories has occurred, perceptions of opportunity, security, prestige, and economic independence have not improved commensurately for Muslim women. This disconnect between objective movement and subjective valuation suggests that perceived mobility is likely influenced by factors beyond simple occupational shifts, such as relative deprivation, higher reference group standards, or persistent structural barriers that dampen the felt experience of success. The following section will interrogate this paradox further by exploring the determinants of these perceptions.

6.8.4 Reconciling Objective and Subjective Occupational Mobility Patterns

A comparison of the objective occupational mobility results presented earlier in this chapter with the perceived occupational mobility findings reveals a striking "mobility paradox." Objectively, Muslim women, on average, exhibited greater intergenerational occupational mobility than non-Muslim women, as indicated by higher rates of upward movement in transition matrices and more pronounced occupational step differences. In contrast, the subjective assessment captured by the PIOM scale indicates that Muslim women report significantly lower perceived occupational mobility than their non-Muslim counterparts. This divergence does not represent a contradiction; rather, it highlights the distinct social, psychological, and structural processes through which occupational progress is evaluated and experienced.

A primary explanatory mechanism is reference group theory (Festinger, 1954). Objective mobility measures are inherently intergenerational, benchmarking daughters' occupational positions against those of their mothers. From this perspective, the occupational advancement of many Muslim women—often involving a transition from maternal non-participation or informal work into paid employment—constitutes a substantial vertical shift. Subjectively, however,

occupational status is rarely evaluated solely in relation to the parental generation. Entry into the labour market reorients reference points toward contemporaneous peers. Within this horizontal comparison frame, Muslim women are more likely to assess their occupational positions relative to non-Muslim women, who continue, on average, to occupy more stable, prestigious, and better-remunerated occupations (e.g., government or formal corporate roles). When progress is judged against current peers rather than past origins, the psychological sense of mobility may be attenuated, even when the intergenerational distance travelled is large.

A second mechanism concerns the quality of occupational transitions. Unlike educational credentials, which have relatively standardised meanings, employment outcomes vary widely in terms of security, autonomy, prestige, and remuneration. For many Muslim women, objective upward mobility often reflects labour-market entry rather than movement into high-quality or secure occupations. Transitions into informal, low-paid, or precarious jobs register as upward mobility in statistical terms but may not translate into a strong subjective sense of advancement. When employment is experienced as unstable, mismatched to qualifications, or physically and emotionally demanding, the subjective sense of "moving up" is diminished. Thus, a Muslim woman may have objectively surpassed an unemployed mother, yet may not perceive this as a transformative triumph if the work conditions remain arduous or unstable.

A third explanatory lens is the aspiration–realisation gap (Appadurai, 2004). Educational expansion in Kerala has not only enabled entry into work but has also raised expectations regarding job quality, autonomy, and social recognition. For many Muslim women, entry into employment represents a significant generational change, yet often falls short of the professional advancement or leadership roles they aspired to during their education. When occupational outcomes fall short of these aspirations, subjective evaluations may emphasise unrealised potential rather than achieved progress.

Finally, the "double burden" of employment may color perceptions of mobility. For women from communities transitioning from a norm of labor market exclusion

to one of inclusion, entering the workforce often comes with high social and domestic costs. If occupational ascent is accompanied by unchanged domestic responsibilities or social friction, the net improvement in quality of life—captured by PIOM items regarding "standard of living" and "financial independence"—may feel marginal. Consequently, the objective status gain is psychologically offset by the strain of maintaining it, leading to a perception of mobility as a strenuous negotiation rather than a seamless ascent.

In synthesis, these mechanisms explain why lower perceived occupational mobility among Muslim women coexists with substantial objective progress. Subjective mobility is filtered through lateral comparisons, rising occupational aspirations, job quality considerations, and perceptions of fairness in labour-market returns. Muslim women have moved considerably farther from their mothers' occupational positions, but when evaluated within a contemporary occupational context marked by persistent inequalities, this progress may feel incomplete or constrained. The lower PIOM scores among Muslim women reflect a reality where occupational mobility is experienced less as "moving up" and more as "struggling to hold ground" against structural headwinds.

6.8.5 Conclusion

This section has complemented the objective analysis of occupational mobility by quantifying the subjective dimension of intergenerational change. The development and validation of the PIOM scale confirmed a unidimensional, robust construct that functions equivalently across religious groups. The application of this scale demonstrated that subjective assessments of intergenerational occupational mobility diverge systematically from objective mobility patterns across religious groups. Although Muslim women exhibit substantial upward occupational movement relative to their mothers, they report lower perceived occupational mobility than non-Muslim women. The reconciliation analysis shows that this divergence arises not from a lack of objective advancement, but from the social context in which occupational outcomes are interpreted and lived.

By integrating subjective perceptions with objective mobility measures, the analysis underscores that occupational mobility is not merely a change in position but a multidimensional experience shaped by job quality, relative comparisons, aspirations, and structural constraints. These findings reinforce the broader argument of the thesis: while intergenerational occupational mobility among women in Kerala is real and significant, its meaning and lived experience are unevenly distributed across social groups. Understanding this distinction is essential for interpreting mobility patterns accurately and for designing policies that address not only access to employment but also the quality, security, and dignity of occupational advancement.

6.9 Concluding Observations

This chapter examined intergenerational occupational mobility among Muslim and non-Muslim women in Kerala, employing a framework that integrates objective measures with subjective perceptions. Objective mobility was assessed through transition matrices, summary indices, and occupational step-distances, while multivariate models identified the determinants of both mobility direction and magnitude. In parallel, the validated PIOM scale captured how women experience and interpret their occupational progress relative to their mothers.

The descriptive evidence reveals that women in Kerala experience a moderate degree of intergenerational occupational mobility, characterised predominantly by upward movement. Muslim women, despite originating from lower average occupational positions, display a distinctively upward movement, exhibiting more frequent positive occupational step differences and significantly lower rates of downward mobility compared to their non-Muslim counterparts. Conversely, non-Muslim women exhibit greater stability at higher origin levels but also a comparatively higher incidence of downward slippage from advantaged maternal positions.

Multivariate regression analyses, however, provide crucial context for these bivariate patterns. They indicate that the observed differences in raw mobility rates are largely attributable to compositional factors—most importantly, the lower

starting point (mother's occupation) of Muslim women—rather than to a direct, independent effect of religious identity. Once maternal starting positions, individual educational attainment, and household constraints are controlled for, Muslim and non-Muslim women exhibit statistically indistinguishable patterns of both directional movement and mobility magnitude. The analysis consistently identifies education as the primary engine of upward mobility, acting as a meritocratic lever that enables women to surpass their mothers' occupational status. Yet, this upward potential is constrained by significant "floor" and "ceiling" effects derived from the mother's status, as well as a distinct "care penalty," where the presence of dependent household members and children acts as a structural brake on occupational advancement.

The inclusion of the PIOM scale adds a critical subjective dimension, revealing a striking "mobility paradox": Muslim women, despite demonstrating substantial objective upward movement from low baselines, report significantly lower perceived occupational mobility than non-Muslim women. The reconciliation analysis suggests differences in reference groups drive this divergence, the uneven quality and security of occupational transitions, aspiration–realisation gaps, and the psychosocial "double burden" of balancing employment with domestic responsibilities.

In summary, these findings indicate that while intergenerational occupational mobility in Kerala is substantial, it is neither uniform nor unambiguously experienced as progress. Occupational trajectories are jointly determined by inherited position and individual achievements, particularly maternal occupation and daughters' education, while family structure and location impose meaningful constraints. Apparent differences between Muslim and non-Muslim women arise primarily through unequal initial positions and differential exposure to family burdens rather than through direct religious effects in the mobility process. The persistent gap between objective advancement and subjective perception among Muslim women underscores that meaningful mobility entails more than a change in occupational code; it requires jobs that deliver tangible improvements in economic security, autonomy, and dignity.

From a policy perspective, the findings imply that improving mobility requires more than expanding access to employment. Effective interventions should prioritise creating pathways into secure, higher-quality work through targeted skill development and career support systems. Crucially, policies must also address the structural "care penalty" by investing in affordable childcare and supporting mechanisms that reduce the domestic burden disproportionately borne by women. Ultimately, the divergence between objective and perceived mobility further suggests that "inclusive mobility" should be evaluated not only by movements across occupational categories, but also by whether employment delivers meaningful improvements in autonomy, security, and recognition.

Chapter 7

SUMMARY AND FINDINGS

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Chapter 7

SUMMARY AND FINDINGS

7.1 Introduction

The current thesis examined Muslim women's educational and career mobility over generations, focusing on evaluating the extent of upward mobility, stagnation, and inequality when compared to women from other religious communities. The study tried to analyse the current educational, and occupational status of Muslim women in Kerala and it also tried to explore the intergenerational educational and occupational mobility of Muslim women in Kerala compared to non-Muslim women.

The sampling consists of 704 respondents of Muslim and non-Muslim women, aged 25-54 age group from three districts of Kerala. The selected districts are Malappuram from northern region, Ernamkulam from central region and Kollam from southern region of Kerala.

7.2 Socio-Demographic Details of the respondent

This section has provided detailed socio-demographic characteristics of the respondents for the comparative analysis of educational and occupational mobility of Muslim and non-Muslim women in Kerala. The study tried to analyse the influence of variables such as age, religious affiliation, social group, marital status, household size, geographic region and residential location on the educational and occupational mobility of the respondents. The study found that most of the respondents among Muslim and non-Muslim women come under the age group of 30 years or below and there was no significant difference between Muslim and non-Muslim women based on their age. While the sampling design of the study included slightly higher proportion of Muslim women to ensure the analytical depth on the focal group, the representation of non-Muslim women -comprising both Hindus and Christians -is considerable enough to allow for meaningful comparative analysis. The study indicated a small and practically negligible deviation from equal

proportion between Muslim and non-Muslim women. The data revealed that majority of the respondents in the sample belongs to the OBC category, since the study focuses on Muslim women in Kerala, and most Muslims in the state are officially classified under the OBC category. In addition, OBC segment also includes some Hindu women also represent its highest share. Marital status wise, the majority of women in both groups were currently married with slightly higher proportion of Muslim women. The proportion of widowed and divorced /separated women was relatively low in both groups with slightly higher proportion of Muslim, and the proportion of never -married women was considerably higher among non-Muslim respondents.

Based on the size of the household, the data showed that medium sized households are the most common across both religious groups. However, small households are the most common among non-Muslim women and large, very large households are more prevalent among Muslim women. There can be seen significant difference between geographic zone and religious affiliation. The largest proportion of Muslim respondents came from northern Kerala, while non-Muslim respondents were more evenly distributed across three zones, with slightly higher shares in central and southern Kerala. Based on the residential location it was found that majority of the respondents in both religious groups reside in rural areas, though the proportion is higher among Muslim women. Non-Muslim women are more likely to reside in urban and semi-urban areas.

7.3 Summary of Major Findings

The first objective of the study was to assess and compare the current level of educational attainment of Muslim and non-Muslim women in Kerala. Based on the categorical data the study found that, while both groups showed representation across all levels of education, Muslim women are relatively more concentrated in the lower and middle levels, such as secondary and higher secondary education and at the same time non-Muslim women represented at the higher education levels, particularly in post-graduation and professional qualifications. To supplement categorical data, the study also collected continuous data on the exact number of years of formal schooling completed by each respondent. Based on these data the study found that

on average Muslim women reported fewer years of formal schooling than their non-Muslim peers. The average difference is approximately one and half years, so there exists persistent educational gap between Muslim and non-Muslim women in Kerala. Both, the analyses of highest qualification and years of formal schooling reveal a stable educational disadvantage among Muslim women in Kerala. While both groups have gained considerable achievements, Muslim women remain under represented in higher education and reflect shorter durations of formal schooling on average. The issue of incidence of incomplete education is more prevalent among Muslim women than non-Muslim women, with nearly half reporting educational discontinuity. This is approximately twice the proportion observed among non-Muslim women. Early marriage or family responsibilities is the main reason for the Muslim respondents and financial constraints are the main reason for the non-Muslim respondents in terms of incomplete education. There were several other reasons such as attitudinal biases, religious -cultural factors and school accessibility issues which are less frequent across both groups.

Family responsibilities, financial issues, lack of motivation and societal restrictions were the major challenges reported by Muslim respondents regarding educational attainment, in contrast non-Muslim respondents reported only fewer challenges such as financial issues and family care are the important challenges for the attainment of education. In case of challenge-specific differences, four out of seven barriers showed statistically significant differences, where Muslim women reported family responsibilities, societal and cultural norms, lack of motivation and misalignment between religious and formal education. Financial difficulties, school distance and dependent care did not show significant difference between Muslim and non-Muslim women. As per the intensity of educational challenges Muslim women reported nearly twice the average number of challenges compared to non-Muslim women.

The second objective was to evaluate and compare Current Employment and Occupational Status of Muslim and non-Muslim women in Kerala. Based on the employment status, considerable share of respondents across both religious groups

were homemakers, while nearly one-third were engaged in full-time employment. The proportion of women engaged in self-employment is relatively smaller. Among the employed women, largest proportion of respondents in both groups engaged in professional or respected roles such as teaching, health care or skilled self-employment. Relatively smaller share of women was found in unskilled labour, while a considerable segment was engaged in moderately skilled or informal self-employment roles. Representation in high-prestige entrepreneurial or professional roles was limited and showed roughly equal representation between the groups.

Majority of the respondents across both religious groups cited job suitability to educational background was the motivation for employment. However, a substantially higher share of non-Muslim reported economic necessity out of poverty was the main motivation for employment. At the same time, motivation from family members and the desire to maintain social status were more prominent among Muslim women. Family or household responsibilities were the primary reason for unemployed women from both religious groups. Muslim women reported that lack of interest and childcare responsibilities and non-Muslim women reported that lack of opportunities or dependent care responsibilities were the primary reason for unemployment.

Third objective was to assess and compare the extent, patterns and determinants of intergenerational educational mobility among Muslim women in Kerala compared to non-Muslim women. Intergenerational educational mobility is represented through the transition matrices. These are derived separately for Muslim women, non-Muslim women and the pooled sample. Transition matrix for Muslim women showed that upward mobility is the dominant case for Muslim women, downward mobility is rare and immobility is limited. As far as non-Muslim women are concerned overall pattern is similar corresponding to Muslim respondents. Daughters of low -schooled mothers showed considerable upward movement, downward mobility is rare. Like Muslim sample, daughters of mothers who had attained secondary or higher secondary education showed same level of education. In the pooled sample, non-Muslim daughters showed at the top level of education-

particularly in the higher secondary and graduate level. However, basic picture is similar across communities. Starting from low maternal schooling, large majority of daughters experienced upward movement and for better educated mothers, daughters reached at the same education level. Statistical tests of association and ordinal educational persistence showed that higher maternal education is systematically associated with higher daughter education in both Muslim and non-Muslim households. Overall, this descriptive analysis showed that educational attainment is simultaneously inclusive and stratified; broad-based upward mobility coexists with persistent intergenerational dependence and a modest, but meaningful advantage for non-Muslim women for the highest level of schooling.

Based on the summary mobility table Muslim women demonstrated a marginally more favourable absolute mobility profile despite starting from a lower average maternal education. Bartholomew index showed that Muslim women - starting from lower maternal baselines-exhibit greater absolute mobility in terms of educational distance travelled, whereas non-Muslim women showed immobility and slightly more downward movement within the distribution. The -direction sensitive indices support the above findings that Muslim women on an average have achieved upward mobility. At the same time, non-Muslim women showed immobility at higher level of education of their mother and slightly greater risk of downward steps even though there was the magnitude of downward movement remains minimal.

Based on the Educational Step Difference (ESD) score found that the typical Muslim women achieved two steps of educational advancement compared to one step for the typical non-Muslim women. This score is consistent with the earlier mobility indices confirming that Muslim women reflect a right-shifted step - difference distribution rather than mobility concentrated in a few extreme cases. The study based on Intergenerational Educational Schooling Gap (IESG) found that Muslim women recorded an average gain exceeding 6 years of schooling, while non-Muslim women recorded an average gain of nearly 5 years. This difference in intergenerational gain showed that although the Muslim women started from a lower baseline, achieved significantly steeper upward movement in terms of years of

education acquired by their non-Muslim counterparts. Based on OLS Regression Maternal education plays a particularly strong equalising role for Muslim women, mitigating baseline disadvantages and generating relatively larger gains across much of the maternal schooling distribution. It showed that although Muslim daughters begin from a lower average baseline, the responsiveness (elasticity) of daughters' schooling to maternal education is higher among Muslims, pointing to a distinct and more dynamic transmission mechanism.

Blinder-Oaxaca model observed that 1.49-year difference in daughter's mean schooling between non-Muslim and Muslim women into components attributable to group differences in observable characteristics such as parental education and educational barriers(endowments effect),differences in the returns to those characteristics(Coefficients),and simultaneous differences in both(interaction effect, in the threefold form).In the present study 75.5% of total difference was due to endowments components .Within endowments largest contribution arises from mother's schooling followed by father's schooling and the higher prevalence of reported schooling barriers among Muslims. In addition, a meaningful portion of the gap reflects differences in coefficients, indicating that Muslims receive lower returns, at their observed socio-economic profile, to the same educational endowments. Together, these patterns describe the cross-sectional inequality among the daughters' generation. Perceived mobility analysis demonstrated that respondents have achieved absolute mobility in terms of educational achievement, but Muslim women reported lower perceived intergenerational educational mobility than non-Muslim respondents, despite having achieved larger objective gains from a lower starting point.

Fourth objective is to assess and compare the extent, patterns and determinants of intergenerational Occupational mobility among Muslim women in Kerala compared to non-Muslim women. For occupational mobility, three types of movements are reported based on the transition matrix- strong persistence of labour-force non-participation across generations, visible upward mobility from non-participation and low-skilled work into professional/service occupations, and non-trivial downward movement from mothers in paid work—especially at higher levels—into daughters'

non-participation. Categorical comparison of absolute intergenerational occupational mobility showed that upward mobility is slightly higher for Muslim women, whereas downward mobility is highest among non-Muslims, it is twice that of Muslim women.

Bartholomew Index revealed that, in case of Muslim women upward mobility was the dominant case, whereas downward movements compensate lower rate of upward movements in case of non-Muslim women. Direction -sensitive index also confirmed that Both Muslim and Non-Muslim women are experiencing comparable levels of upward advancement in terms of distance. The downward distance for non-Muslim women is more than double that of Muslim women. So, the Net Step Index that is noticeably lower than that of Muslim women. Occupational Step Difference scores analysed that Muslim women tending to have higher mobility than their non-Muslim counterparts

Multinomial logistic regression demonstrated that the direction of intergenerational occupational mobility among women in the sample is shaped less by religion itself and more by a combination of parental background, individual educational attainment, and family responsibilities. Religious identity does not exert an independent effect on mobility direction once maternal occupation, education, and household factors are taken into account. The probabilities of upward, downward, and immobile trajectories are statistically similar for Muslim and non-Muslim women after adjusting for these covariates, indicating that observed religious differences in raw distributions are largely compositional rather than intrinsic.

Maternal occupation and daughter's education jointly organise the opportunity structure of intergenerational mobility. Daughters of low-status mothers face a low risk of further downward moves but enjoy substantial prospects of upward advancement, especially when they have more schooling. Daughters from high-status origins, in contrast, have limited scope for additional upward movement and face a greater risk of downward trajectories. Daughters' own education substantially reduces the risk of downward mobility and is a powerful driver of upward movement. Family responsibilities, especially larger numbers of children and dependents, are

strongly associated with lower probabilities of upward mobility, whereas their role in generating downward moves is limited. Rural residence is associated with a modestly higher risk of downward mobility but no systematic difference in upward mobility once other factors are controlled. Estimates confirmed that, once these covariates are controlled, religious identity is not a statistically significant determinant of the occupational mobility magnitude. Instead, the magnitude of mobility is governed primarily by the interplay of origin status, education, and household responsibility constraints. Maternal occupational position exerts a strong limiting influence on net mobility distance, while daughters' education consistently expands occupational distance upward. Household responsibilities—especially dependency burden and, to a lesser extent, childbearing—reduce the net distance achieved, whereas larger household size appears to operate as a facilitating resource, potentially reflecting support mechanisms that enable women's occupational advancement. This result underscores the importance of structural and human capital factors in determining not just the direction, but also the extent, of intergenerational occupational change. Perceived occupational mobility found that although Muslim women exhibit substantial upward occupational movement relative to their mothers, they report lower perceived occupational mobility than non-Muslim women. The reconciliation analysis shows that this divergence arises not from a lack of objective advancement, but from the social context in which occupational outcomes are interpreted and lived.

7.4 Conclusion

The study concluded that while women in Kerala have generally achieved high levels of educational success, Muslim women are still underrepresented in higher education, frequently fall short of their desired educational level, and face various obstacles in comparison to non-Muslim women. Regarding employment status, a significant portion of respondents from both communities stated that they were not in the labour force, with Muslim women exhibiting the highest rate of non-participation. Nevertheless, there is a growing trend among women from both communities to enter the labour force, with non-Muslim women most likely to do so. Nearly half of the

women from both communities reported having a professional or socially respected job, such as teaching or healthcare. This percentage is marginally higher among Muslim women than non-Muslim women. While intergenerational educational mobility was attained by both groups, it was comparatively higher among Muslim women, primarily due to Muslim mothers' lower educational attainment than non-Muslim mothers, while downward mobility and immobility were higher among non-Muslim women. These differences in mobility outcomes are primarily related to Muslim mothers' initial educational starting point, and non-Muslim mothers attained comparatively higher educational attainment. Significant labour force non-participation is evident in both religions when it comes to occupational mobility; however, Muslim women report higher levels of upward mobility and immobility, while non-Muslim women report higher levels of downward mobility. These mobility patterns are influenced by family background characteristics and other structural and social constraints.

7.5 Policy Implications

The following are the policy implications derived from the present study.

7.5.1 Educational Policy

- Raise the minimum legal marriage age to at least 21 years. This will enable women to complete at least a graduate degree.
- Promote community-based awareness programmes through religious and local leaders to emphasize the long-term social and economic benefits of girls' education

7.5.2 Employment and Economic Participation

- Provide mentorship networks with women professionals
- Provide skill training programs through Kudumbashree to help women start businesses.
- Provide childcare facilities like creche, day care centres near the workplaces

7.5.3 Intergenerational Mobility Enhancement

- Increase continuous investment in girls' and women's education.
- Create pathways for secure and high-quality employment through a targeted skill development program.
- Strengthen the resource base of the disadvantaged households.

7.5.4 Community-Specific Intervention

- Set up community-level coaching centres, job-oriented skill training programmes in Muslim-majority areas to improve higher education completion and employment opportunities for Muslim women.

7.6 Contributions

The following contributions are provided by the present study.

7.6.1 Empirical Contributions

The empirical data used in the study and their corresponding results constitute the study's empirical contributions.

7.6.2 Methodological Contributions

Methodologically, Direction-sensitive indices and Blinder-Oaxaca decomposition are the methodological contributions used for the study

7.6.3 Policy Contributions

The study contributed to the policy decision to implement targeted interventions to enhance educational and occupational attainment and intergenerational mobility of Muslim women.

7.7 Limitations

The study is based on cross-sectional data. So, the study is not free from the common limitations of cross-sectional data. Cross-sectional data are collected at a single point in time, limiting causal inference. Data on intergenerational aspects are self-reported, which may introduce recall bias. Occupational classification is a

complex reality. Simplification of complex reality is another limitation of this topic. The study concentrated on three regions of Kerala, so nationwide generalisation is not possible. Due to the study's scope limitations, it couldn't measure the economic status or economic mobility of Muslim and non-Muslim women.

7.8 Scope for Further Research

The present study included only the current educational and occupational status and corresponding mobility of Muslim women, compared with those of their mothers. The study may also have included the economic status and economic mobility of Muslim and non-Muslim women. Further studies can also examine the education–employment mismatch and skill gaps affecting labour force participation between Muslim and non-Muslim women.

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APPENDIX

APPENDIX

INTERVIEW SCHEDULE

Dear Participant,

I am Jameela K, a Ph.D. research scholar in Economics at MD College, Pazhanji, Thrissur. I am conducting a study titled “Educational and Occupational Status and Intergenerational Mobility among Muslim and Non-Muslim Women in Kerala: A Comparative Analysis.” as part of my doctoral research.

Purpose of the Study:

The study focuses on the socio-economic and educational progress of Muslim women across generations and to identify factors influencing mobility in education, and employment conditions. Your insights will contribute to a better understanding of these issues and help shape policies for enhancing opportunities for women in the region.

Confidentiality:

All information provided during this interview will be kept strictly confidential and will be used solely for research purposes. Your name or any identifying details will not appear in any reports or publications arising from this study.

Thank you for your valuable time and support.

Section 1

a) Basic Demographic

Phone Number:

1. What is your current age? _____ (In Years):
2. To Which one of the following religions do you follow? : ☐ Islamism
☐ Christianity ☐ Hinduism ☐ Others
3. To which one of the following social groups do you belong?
☐ SC/ST ☐ OBC ☐ Others
4. What is your current marital status: ☐ Never married ☐ Currently married
☐ Divorced/Separated ☐ Widowed
5. What was your age at the time of first marriage? _____ (In years)

b) Household Composition

1. What is the monthly income of your household:
2. How many children do you have?
3. How many members are there in your household, including yourself?
4. Number of members economically dependent on others:

c) Geographic and Community Context

1. Which district in the Kerala do you currently live in?
☐ Malappuram ☐ Ernakulam ☐ Kollam
2. Do you live in:
☐ Panchayath ☐ Municipality ☐ Municipal Corporation

Section 2

Current Educational Status

1. What is your highest level of formal education:

☐ 1. No Formal Schooling	☐ 2. Lower Primary (Class 1-4)
☐ 3. Upper Primary (Class 5-7)	☐ 4. Secondary School (Class 8-10)
☐ 5. Higher Secondary (Class 11-12)	☐ 6. Graduate (Specify____)
☐ 7. Professional Graduation	☐ 8. Post graduate & Above
2. How many total years of formal Schooling have you completed? _____ (years)
3. If you didn't complete your education, what was the primary reason?

☐ 1. Financial constraints	☐ 2. Marriage or family responsibilities
☐ 3. Lack of Access to Schools	☐ 4. Cultural or religious Norms
☐ 5. Negative attitude towards girls' Education	
☐ 6. Disconnect between religious and formal education.	
4. Did you face any Specific Challenges in completing your education (Select all that apply)

☐ 1. Financial Issues	☐ 2. Distance to School
☐ 3. Family responsibilities	☐ 4. Dependent parents / Children
☐ 5. Societal or cultural restrictions	☐ 6. Lack of Motivation or Encouragement
☐ 7. Disconnect between religious and formal education	
☐ 8. None of these challenges reported	

Section 3

Current Employment and Occupational Status:

1. What is your current activity status (Select the best option):
 - ☐ 1. Unemployed ☐ 2. Homemaker ☐ 3. Student
 - ☐ 4. Part-time Employed ☐ 5. Full-time Employed ☐ 6. Self-Employed
2. If currently employed, specify your primary occupation:
 - ☐ 1. No paid Occupation.
 - ☐ 2. Unskilled or Agricultural Labour (low-skilled, manual employment)
 - ☐ 3. Skilled Labour or Informal Self-Employment (moderate skill, low autonomy)
 - ☐ 4. Clerical / Administrative Work (formal, mid-level employment)
 - ☐ 5. Teaching, Health care, or Skilled Self-Employment (professional/respected roles)
 - ☐ 6. Entrepreneur or Higher Professional Role (high autonomy or occupational prestige)
3. Motivations for Employment Engagement
 - ☐ 1. Educational Suitability ☐ 2. Economic Necessity
 - ☐ 3. Family Encouragement ☐ 4. Financial Support for Household
 - ☐ 5. Maintain Social Status
4. If unemployed, state the primary reason:
 - ☐ 1. Family/Household Responsibilities ☐ 2. Lack of job opportunities
 - ☐ 3. Childcare Responsibilities ☐ 4. Caring for Dependent Parents
 - ☐ 5. Lack of Skill/Education ☐ 6. Lack of Interest
 - ☐ 7. Cultural/Religious Restrictions ☐ 8. Other Reasons

Section 4

Intergenerational Educational Mobility

A. Factual Questions

1. Father's Educational Status:
 - ☐ No Schooling ☐ Lower Primary (Class 1-4)
 - ☐ Upper Primary (Class 5-7) ☐ Secondary School (Class 8-10)
 - ☐ Higher secondary School (Class 11-12)
 - ☐ Graduate (Specify):
 - ☐ Post graduate and Above (Specify):
2. Years of formal Education of father: ----- (Years)

3. Mother's Educational status when she was around your current age:

- ☐ No Schooling ☐ Lower Primary (Class 1-4)
☐ Upper Primary (Class 5-7) ☐ Secondary School (Class 8-10)
☐ Higher secondary School (Class 11-12) ☐ Graduate (Specify): ----
☐ Post graduate and Above (Specify): -----

4 Years of formal Education of mother: -----(Years)

5. Did you face any major barriers in completing your education? ☐ Yes ☐ No

If Yes, Specify the barriers faced:

B. Perception on Educational mobility

1. Compared to your mother, how would you rate your highest level of education?

Much lower/Lower/About the same/Higher/Much higher

2. Indicate your level of agreement for each statements using following scale- (Strongly Disagree (SDA)/Disagree (DA)/Neutral (N)/Agree (A)/ Strongly Agree (SA)

SL	Statements	SDA	DA	N	A	SA
1	I had more access to educational opportunities compared to my mother.	SDA	DA	N	A	SA
2	The quality of education I received was better than what my mother received.	SDA	DA	N	A	SA
3	I faced fewer barriers to accessing education compared to my mother	SDA	DA	N	A	SA
4	My family supported my education more than my mother's family supported her education.	SDA	DA	N	A	SA
5	My education has provided me with better opportunities than my mother's education did for her.	SDA	DA	N	A	SA

Section 5

Intergenerational Occupational Mobility

A. Factual Questions.

1. What was your Mother's Activity Status when she was around your current age?

- ☐ Unemployed ☐ Homemaker
☐ Student ☐ Part-time Employed
☐ Full-time Employed ☐ Self-Employed

2. What type of work did your mother (if employed) primarily do when she was around your current age?
- ☐ No paid Occupation
- ☐ Unskilled /Agricultural Labour (low-skilled, manual employment)
- ☐ Skilled Labour/Informal Self Employment (Moderate Skill, low autonomy)
- ☐ Clerical/Administrative Work(formal, mid-level employment)
- ☐ Teaching/Healthcare/Skilled Self-Employment. (Professional/respected roles)
- ☐ Entrepreneur/Higher Professional Role (high autonomy or occupational prestige).
3. Have you faced any barriers to gaining or continuing employment? Yes/No
- If yes, specify: _____

B. Perception on Occupational mobility Mobility

1. how would you rate your current employment status Compared to your mother?
- Much worse/worse/about the same/better/much better
2. Indicate your level of agreement for each statements using following scale- (Strongly Disagree (SDA)/Disagree (DA)/Neutral (N)/Agree (A)/ Strongly Agree (SA)

SL	Statements	SDA	DA	N	A	SA
1	I had more opportunities to join the workforce compared to my mother.	SDA	DA	N	A	SA
2	The type of work I do is more prestigious than the type of work my mother did.	SDA	DA	N	A	SA
3	I have experienced greater financial independence through my work compared to my mother	SDA	DA	N	A	SA
4	I have faced fewer societal or cultural barriers to employment as compared to my mother.	SDA	DA	N	A	SA
5	The working conditions I experience are better than those my mother faced.	SDA	DA	N	A	SA
6	I feel that I have greater job security compared to my mother.	SDA	DA	N	A	SA
7	My employment status has provided me better opportunities to lead a decent standard of living	SDA	DA	N	A	SA
