Mobility and Pathways to Autonomy of Women: A Study of Informal Workers in Fisheries Sector in Kerala, India

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1 CHAPTER I: INTRODUCTION.................................................................................................................. 15

1.1 Women’s Work and Gendered Mobilities......................................................................................... 15

1.2 Context of the Research ................................................................................................................. 20

1.3 Statement of the Problem ............................................................................................................. 22

1.4 Main Aim and Objectives ............................................................................................................. 24

1.5 Structure of the Thesis .................................................................................................................... 26

1.6 Summary of the Chapter ................................................................................................................ 27

2 CHAPTER II: WORK, MOBILITY OF WOMEN AND HOUSEHOLD AUTONOMY: AN OVERVIEW OF DIVERGENT VIEWS AND MULTIPLE REALITIES.......................................................................................................................... 29

2.1 Autonomy and Women .................................................................................................................. 29

2.1.1 Work, autonomy and women .................................................................................................. 30

2.1.2 Relational autonomy and women .......................................................................................... 31

2.1.3 Women’s autonomy: definitions, measures and related findings ........................................... 34

2.2 Can Household Models Explain Multiple Realities? .................................................................... 38

2.3 Competing Theories of Women and Work: Need for Feminist Interpretation .............................. 41

2.4 Mobility and Work: An Interdisciplinary Perspective ................................................................. 47

2.5 Mobility and Autonomy: A Capability Approach (CA) Framework ............................................ 51

2.6 Significance of Women workers in Informal Sector ...................................................................... 59

2.7 Gender Relations in India and Kerala: An Overview ..................................................................... 64

2.7.1 Critiquing the Kerala Model of social development ............................................................... 66

2.7.2 Studies on women in fisheries in Kerala .................................................................................. 67

2.8 Methodological issues in the measurement of mobility and autonomy ....................................... 70

2.9 Identifying the Gaps in Literature and Linking the Research Questions ...................................... 71

2.10 Summary of the Chapter .............................................................................................................. 73
CHAPTER III: METHODOLOGY

3.1 Rationale for Mixed Methods Approach ................................................................. 74

3.2 Philosophical Assumptions ...................................................................................... 76

3.3 Sampling Design......................................................................................................... 80
  3.3.1 Profile of the study village 80
  3.3.2 Profile of the seafood processing industry 82
  3.3.3 Sampling for survey of informal women workers 84

3.4 Data Collection .......................................................................................................... 86
  3.4.1 Survey questionnaires for data collection on women workers 86
  3.4.2 Qualitative interviews 89

3.5 Profile of Informal Workers in the Sample ............................................................... 92
  3.5.1 Peeling workers 94
  3.5.2 Fish vendors 95

3.6 Research Questions and Methods ........................................................................... 97

3.7 Quantitative Analysis ................................................................................................. 98
  3.7.1 Rasch Rating Scale Model (RSM) to construct the measure of mobility 99
  3.7.2 Multiple regression model 106

3.8 Qualitative Analysis ................................................................................................ 109
  3.8.1 Qualitative Comparative Analysis (QCA) 109
  3.8.2 Crisp-set QCA (csQCA) 111
  3.8.3 Classic Grounded Theory (CGT) 115

3.9 Limitations of the Study .......................................................................................... 122

3.10 Ethical Considerations for the Research ............................................................... 122

3.11 Summary of the Chapter ......................................................................................... 123

CHAPTER IV: MEASUREMENT OF MOBILITY OF WOMEN WORKERS: AN
APPLICATION OF RASCH MODEL ........................................................................... 124

4.1 Transformational Mobility: Constructing a Measurement Scale of mobility .......... 124

4.2 Measurement of Mobility: A Rasch Model Analysis ............................................. 126

4.3 Validation and presentation of the scale of permissibility of mobility of all workers ... 127
  4.3.1 Item fit statistics 128
  4.3.2 Category fit statistics 130
  4.3.3 Reliability indices of the model for informal workers 131
  4.3.4 Unidimensionality test 132
  4.3.5 Differential item functioning (DIF) 133
  4.3.6 Measurement Scale of Permissibility of Mobility of informal women workers 136

4.4 Separate calibration of the measurement scales of two groups of informal workers .... 142
  4.4.1 Validation and presentation of scale of permissibility of mobility of peeling workers 142
  4.4.2 Validation and presentation of the scale of permissibility of mobility of fish vendors 146
4.3 Reliability of the two models
4.4 Test of unidimensionality of the two models

4.5 Women with High mobility and Transformational Mobility – A Discussion .................. 153
4.5.1 Categorisation of women workers based on Rasch person measures of mobility 154
4.5.2 Domains of mobility and levels of permissibility
4.5.3 Scale of permissibility of mobility and the mobility ladder

4.6 Transformational Mobility and Autonomy Ladder: Analysing the Linkages ............ 159
4.7 Concluding Remarks .................................................................................................. 162
4.8 Summary of the Chapter .......................................................................................... 164

5 CHAPTER V: DETERMINANTS OF WORK MOBILITY OF WOMEN IN
FISHERIES: A MULTIPLE REGRESSION ANALYSIS ...................................................... 165
5.1 Model Specification and Correlates of Informal Work ............................................. 165
5.2 Descriptive Statistics and Correlation Matrix of the variables ............................. 168
5.3 Determinants of Work Mobility of Women: Multiple Regression Model I .......... 170
5.3.1 Diagnostic analysis of Model I 172
5.4 Determinants of Overall Mobility of Women - Multiple Regression Model- II ....... 173
5.4.1 Diagnostic analysis of Model II 174
5.5 Discussion on Regression Models of Informal Work ............................................. 176
5.6 Summary of the Chapter .......................................................................................... 178

6 CHAPTER VI: PATHWAYS TO HIGH AND TRANSFORMATIONAL
MOBILITY: A QUALITATIVE COMPARATIVE ANALYSIS (QCA) ................................. 179
6.1 Pathways to High and Transformational Mobility: The Case of Peeling Workers ...... 179
6.1.1 Truth table and solution formula for peeling workers for presence of outcome 181
6.1.2 Pathways to the absence of TM among peeling workers 186
6.2 Pathways to High and Transformational Mobility: The Case of Fish Vendors ....... 189
6.2.1 Truth table and solution formula for fish vendors for presence of outcome 189
6.2.2 Pathways to the absence of TM among fish vendors 194
6.3 A Comparative Analysis of the Pathways to TM: Peeling workers vs Fish Vendors .... 197
6.4 Substantiating the csQCA findings based on evidence from Interviews .................. 199
6.5 Concluding Remarks ............................................................................................... 202
6.6 Summary of the Chapter .......................................................................................... 203

7 CHAPTER VII: DIMENSIONS OF WORK AND LIVED EXPERIENCES OF
INFORMAL WOMEN WORKERS: A GROUNDED THEORY ANALYSIS ....................... 204
7.1 The Classic Grounded Theory (CGT) Analysis of Informal workers .................... 204
7.2 Analysis of Peeling Workers and Fish Vendors: Substantive Coding to Emergent
Categories ....................................................................................................................... 205
7.3 Emergence of core categories of Peeling Workers and Fish Vendors ........................................... 207
   7.3.1 Theoretical codes and sorting of memos for discovery of theory ........................................ 210

7.4 Theory of subordinating self of Peeling Workers ................................................................. 212
   7.4.1 Status reconciliation and subordination in the workplace ................................................. 212
   7.4.2 Awareness context and conformity to patriarchal norms .................................................. 213
   7.4.3 Adaptive to social constraints ......................................................................................... 214
   7.4.4 Aspirations failures ......................................................................................................... 215

7.5 Self-categorisation as the Substantive Theory of fish vendors ............................................. 218
   7.5.1 Gender group identification - sense of competence and confidence .................................... 218
   7.5.2 Adaptive norms and manoeuvring through patriarchal domination .................................. 219
   7.5.3 Solidarity and collective agency of women fish vendors .................................................... 220

7.6 Integrating the Theories of Informal Workers with Related Literature: A Discussion .............. 222

7.7 Concluding Remarks .............................................................................................................. 226

7.8 Summary of the Chapter ........................................................................................................ 227

8 CHAPTER VIII: CONCLUSION .................................................................................................... 228

8.1 Empirical Findings ................................................................................................................... 231
   8.1.1 Construction of a measurement scale of mobility of women .............................................. 231
   8.1.2 Determinants of work mobility ....................................................................................... 232
   8.1.3 Configurational pathways to TM .................................................................................... 232
   8.1.4 Substantive theories of informal workers ........................................................................ 233

8.2 Theoretical Contribution ......................................................................................................... 234
   8.2.1 Mobility as capability and operationalisation of CA ......................................................... 234
   8.2.2 Substantive theories of informal workers ........................................................................ 235

8.3 Contributions to Methodological Development ..................................................................... 236
   8.3.1 Methodological triangulation .......................................................................................... 236
   8.3.2 An innovative scale to measure mobility of women .......................................................... 237
   8.3.3 Qualitative Comparative Analysis .................................................................................... 238

8.4 Policy Implication of Research Findings ................................................................................. 238
   8.4.1 Work mobility do not always lead to autonomy of women ................................................. 239
   8.4.2 Caste and education as key determinants of informal work ............................................ 239
   8.4.3 Peeling workers as vulnerable workers in post-harvest fisheries ..................................... 240
   8.4.4 Facilitating collective agency of informal women workers .............................................. 241

8.5 Concluding Remarks .............................................................................................................. 242

9 BIBLIOGRAPHY ......................................................................................................................... 245

10 APPENDIX ..................................................................................................................................... 262
   10.1 Appendix A: Location Map of Sakthikulangara village in Kerala, India .................................. 262
   10.2 Appendix B: Questionnaire for Peeling Workers .................................................................... 263
   10.3 Appendix C: Questionnaire for Fish Vendors ....................................................................... 271
10.4 Appendix D: Semi Structured Questionnaire for Interview and Profile of Cases ........ 278
10.5 Appendix E: Histogram of residuals of Model I .......................................................... 279
10.6 Appendix F: Analysis of Necessary Conditions of csQCA Models ............................... 280

Word Count: 85,065
List of Tables

Table 1: Informal Workers in Fisheries (A+B+C) Covered in this Study 20
Table 2: Human Development Index (HDI) and its Components 21
Table 3: Definitions of Autonomy of Women 35
Table 4: Indicators of Women’s Autonomy 37
Table 5: Household Models and Autonomy of Women 40
Table 6: Mobility Indicators of Women’s Autonomy in India 49
Table 7: Mobility as Functioning- A Capability Approach 52
Table 8: Salient Features of Selected Approaches to Individual Well being 55
Table 9: Advantages of Capability Approach to Analyse Mobility 56
Table 10: The Informal Sector- the Old and the New Views 61
Table 11: Gender-wise Participation of Fisherfolk in Marine Fisheries, Kerala (2005) 69
Table 12: Fishing Villages in Kerala 82
Table 13: Criterion for Selection of Cases for Interview 91
Table 14: Profile of Informal Workers in the Sample 93
Table 15: Profile of Peeling Work 95
Table 16: Distribution of Type of Fish Vendors in the Sample 96
Table 17: Research Questions and the Methods Adopted to Explore the Questions 98
Table 18: Likert Rating Scale to Measure Mobility 101
Table 19: Key Differences in CGT and Straussian Theory 117
Table 20: Data Analysis: Glaser and Strauss Compared 118
Table 21: Item Fit Statistics for the Scale of Permissibility of Mobility of Informal Workers 128
Table 22: Category Fit Statistics for the ‘Scale of Permissibility of Mobility’ of All Workers 130
Table 23: Summary of 122 Measured (Non Extreme) Person 132
Table 24: Standardised Residual Variance of the Rasch RSM for all Informal Workers 133
Table 25: Level of Permissibility of Mobility and the Domains of Mobility 140
Table 26: Item Fit Statistics for the ‘Scale of Permissibility of Mobility’ of Peeling Workers 142
Table 27: Category Fit Statistics for the Scale of Permissibility of Peeling Workers 143
Table 28: Item Fit Statistics for the ‘Scale of Permissibility of Mobility’ of Fish Vendors 146
Table 29: Category Fit Statistics for the Scale of Permissibility of Fish Vendors 147
Table 30: Reliability Indices for the Rasch Model for Peeling Workers and Fish Vendors 150
Table 31: Separation Indices of the Rasch Models for Peeling Workers and Fish Vendors 151
Table 32: Standardised Residual Variance of the Peeling Workers and Fish Vendors Models 152
Table 33: Multiple Regression Models 167
Table 34: Descriptive Statistics of the Variables of the Model
Table 35: Correlation Matrix of Variables of Multiple Regression Model
Table 36: Regression Model- I- Dependent Variable Work Mobility
Table 37: Regression Model II: Determinants of Overall Mobility of Women Workers
Table 38: A Comparison of the 2 Multiple Regression Models
Table 39: Data Matrix for Model – Outcome - TM Among Peeling Workers
Table 40: Truth Table for the Outcome –‘High Mobility and TM’ for Peeling Workers
Table 41: Parsimonious Solution for Presence of Outcome for Peeling Workers
Table 42: Truth Table for the Outcome ‘~TM’: ‘TM Negated’ for Peeling Workers
Table 43: Parsimonious Solution for the Outcome TM Negated for Peeling Workers
Table 44: Data Matrix for Fish Vendors
Table 45: Truth Table for the Presence of Outcome ‘High mobility and TM’ for Fish Vendors
Table 46: Parsimonious Solution for the Presence of Outcome for Fish Vendors
Table 47: Truth Table for the Outcome ‘TM Negated’ for Fish Vendors
Table 48: Parsimonious Solution for the Outcome (~TM) ‘TM Negated’ for Fish Vendors
Table 49: Pathways to High Mobility, TM and ~TM: A Comparison of Informal Workers
Table 50: Substantive Codes and the Emergent Themes for Peeling Workers
Table 51: Substantive Codes and the Emergent Themes for Fish Vendors
Table 52: Summary of Research Findings
List of Figures

Figure 1: Transformational Mobility as Capability 17
Figure 2: Sequential Transformative Design in Mixed Methods 76
Figure 3: Critical Realist- Levels of Reality 78
Figure 4: Stages in Seafood Processing Production chain 83
Figure 5: Sample Design for the Survey 86
Figure 6: The Process of Grounded Theory 119
Figure 7: Probability Curves for the Rating Scale for all Workers 131
Figure 8: Person DIF plot (DIF=PERSON-ID) 134
Figure 9: Person DIF plot (DIF=PERSON-ID) 135
Figure 10: Person Item Map of Informal workers: Categorisation of Domains of Mobility 138
Figure 11: Variable Map : Distribution of Peeling Workers (PW) and Fish Vendors (FV) 139
Figure 12: Probability Curves for the Rating Scale of Permissibility of Peeling Workers 144
Figure 13: Person-Item Map of Peeling Workers 145
Figure 14: Probability Curves for the Rating scale of Permissibility of Mobility - FV 147
Figure 15: Person-Item Map of Fish Vendors 149
Figure 16: Scatter Plot of Person scores on the two calibrations for informal workers 153
Figure 17: Distribution of Fish Vendors by the Rasch person measure 155
Figure 18: Distribution of Peeling Workers by the Rasch person measure 156
Figure 19: Mobility Ladder- Pathways to Transformational Mobility 158
Figure 20: Mobility and Autonomy of Informal Women Workers 160
Figure 21: FV and PW with TM and their Autonomy ladder responses 161
Figure 22: Household Autonomy among Peeling Workers and Fish Vendors 162
Figure 23: Plot of Residuals Versus Predicted Proportion of Years in Work 172
Figure 24: Normal Plot of the Residuals (Model I) 173
Figure 25: Plot of Predicted Rasch mobility Score and Residuals (Model II) 175
Figure 26: Normal Probability Plot of Residuals (Model II) 175
Figure 27: Emergence of the Core Category through Substantive Coding 208
Figure 28: Emergence of Categories and the Core Category of Fish Vendors 209
List of Abbreviations

BSP  Basic Social Process
CA   Capability Approach
CGT  Classic Grounded Theory
csQCA Crisp Set Qualitative Comparative Analysis
DIF  Differential Item Functioning
GAD  Gender and Development
HDI  Human Development Index
HDR  Human Development Report
ICSF International Collective in Support of Fish Workers
ILO  International Labour Office
KIFWF Kerala Independent Fish Workers Federation
MPEDA Marine Products Export Development Authority
MPEPC Marine Products Export Promotion Council
NCEUS National Commission for Enterprises in the Unorganized Sector
NFHS National Family Health Survey
OBC  Other Backward Class
OPHDI Oxford Poverty and Human Development Initiative
PCA  Principal Components Analysis
QCA  Qualitative Comparative Analysis
RSM  Rating Scale Model
SC   Scheduled Caste
SDT  Self Determination Theory
ST   Scheduled Tribe
SWAF Status of Women and Fertility
TM   Transformational Mobility
UN   United Nations
WDR  World Development Report
WID  Women in Development
WIEGO Women in Informal Employment: Globalizing and Organizing
Abstract

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Mobility and Pathways to Autonomy of Women: A study of informal workers in fisheries sector in Kerala, India

Mobility defined as the freedom and ability to move has intrinsic and instrumental values in promoting human development. Paid work which involves mobility associated with work can be a ‘capability-enhancing’ experience when such mobility improves opportunities and enhances freedoms. However, the existing studies have neither examined nor measured mobility with its multiple domains for women. My thesis fills this gap in research by exploring the multiple domains of gendered mobility by measuring mobility as a single construct and analysing whether mobility is a ‘capability’ for women workers which improves autonomy and agency. It is inter-disciplinary as it is situated at the confluence of development studies, human geography and sociological disciplines.

The following features of the thesis make it unique in the development studies discipline. First, the contextual setting is unique as it is based in Kerala, which is a socially progressive state in India. The thesis unearths the underlying structural constraints in the Kerala model of social development for transformation of women workers under patriarchy. It is a comparative study which examines the household autonomy and agency of two types of informal women workers in the post-harvest fisheries, namely ‘peeling workers’ linked to production chains and ‘fish vendors’ who are self-employed.

Second, the capability approach provides the theoretical framework for the analysis of mobility of women as capability and it introduces a new concept of ‘transformational mobility’. By examining mobility using the Rasch Rating Scale Model (RSM) for the first time in development studies, the thesis operationalises capability measurement by introducing the measurement scale of mobility of women workers which empirically delineates the multiple domains of mobility based on the constraints faced by women.

Third, the mixed methods research design using survey data and qualitative interviews of women workers provide better insight and contextual understanding of women’s work. An innovative method, namely, the Crisp set Qualitative Comparative Analysis (CsQCA), explores the causal mechanisms that bring about ‘transformational mobility’ in women workers. The thesis empirically proves the significance of social and human capital factors like caste, low education of spouse and marital status along with the underlying patriarchal structures that determine pathways to transformational mobility and decision making of women. Lastly, the qualitative analysis using classic grounded theory contributes to the emergence of substantive theories for women workers which reflect contrasting agentic behaviour of peeling workers and fish vendors in the context of Kerala. The lack of collective agency among peeling workers questions the claims of Kerala model of development in improving the agency of women. The findings confirm that work mobility associated with informal low paid work is not necessarily a capability for women in fisheries.
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1 CHAPTER I: INTRODUCTION

In this introductory chapter of my thesis, I first examine women’s work and gendered mobility and state the purpose of, and justification for my study of mobility of women. In the next section I provide an overview of the context and setting of my research on mobility. Later, I discuss the main aim and objectives and the research questions of my study followed by the structure of the thesis. The concluding section summarises the chapter.

1.1 Women’s Work and Gendered Mobilities

Women, work and wellbeing are closely related and equally debated issues in the contemporary development discourse. Economists and sociologists have argued that paid work outside the household improves women’s earning capacity thereby their sense of self-worth and decision making ability. However at several instances mobility, defined as the freedom and the ability to move, is curbed, especially for women, due to societal norms and practices as in the case of cultures that practise the seclusion of women or purdah1 (Kabeer, 1999). The improvement in autonomy and well-being is not always a necessary outcome for women who have freedom to be mobile and engage in paid work outside the household, especially for those in informal modes of work. Though it is stated that ‘the expansion of employment that ensures adequate livelihood security and decent conditions of work ought to be the bottom line in the pursuit of economic development in a country like India dominated by what is called the informal2 economy’ (NCEUS, 2007), there are a large number of sectors in India which employ workers, especially women at exploitative terms and conditions which perpetuate inequalities in pay and work. The ‘feminisation’ and ‘informalisation’ under the neo-liberal framework3 have largely contributed to the growth of a large segment of women workers who are trapped in the lowest paid informal modes of work.

In this thesis, I intend to examine, in the light of informal women workers in the micro level fisheries sector, whether paid work and the mobility associated with informal work can be transformational and improve the autonomy of women in the socially progressive state of

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1 Kabeer points out to the use of ‘purdah’ or hijab which is compulsory for Muslim women in Bangladesh if moving outside the household
2 NCEUS defined informal workers as ‘unorganised workers’ who are those working in the unorganised sector or households, excluding regular workers with social security benefits, and the workers in the formal sector without any employment and social security benefits provided by the employers’ (Government of India, 2007)
3 Neo-liberal framework aimed at large scale privatisation, liberalisation and globalisation in developing countries which led to integration of economies across the world.
Kerala in India. Even though mobility is perceived as directly contributing to autonomy, in this thesis I argue that there are different types of mobility (with constraints and without constraints) as experienced by women in different domains. Transformational mobility (TM) is a new concept which I introduce in this thesis and define as follows:

*Transformational Mobility is the freedom and ability to move outside the household without constraints from others. It is autonomy in mobility which implies freedom of movement in the real sense.*

It is a state of non-domination. TM improves the sense of self-esteem and self-worth and can thereby contribute to household autonomy of women. The gender differences in mobility have been examined by geographers and sociologists; however, the linkages or associations between gendered mobilities and its impact on various aspects of household autonomy of women have not been researched upon. This study aims to fill this gap in knowledge by analysing mobility as capability to examine work mobility and its impact on autonomy in mobility which is a key aspect of household autonomy. As conceptualised, TM is a capability which is a state of non-domination (see Figure 1). The work mobility which is movement outside the household for work is deemed to result in household autonomy in general. My argument is that it is only TM that can lead to autonomy of women workers.

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4 I use domains to refer to spaces for physical movement and interactions, like personal spaces (visiting neighbours, friends, family) social and community spaces (religious places) which I have explained in detail in section 3.7.1.
In this study, by introducing the concept of TM, I re-conceptualise mobility and its domain of TM is construed as ‘capability’ by adopting the Capability Approach (CA) framework of Amartya Sen (Sen, 1985; 1993; 1999). Under this framework, mobility becomes an enabling capability through exposure to outside world and improves the sense of self-worth and hence become ‘transformational’. It is a capability in terms of being a positive freedom which can improve ‘autonomy in mobility’ which is an aspect of the decision making capacity of individuals. Using CA as the main conceptual framework, this thesis in development studies is situated at the confluence of sociology, economics and geography wherein, it will have as its scope the mobility, its various domains and autonomy (defined in this study as the ‘ability to take decisions for oneself and the immediate family’) aspects of informal women workers in fisheries in the socio-cultural and economic context of the South Indian state of Kerala. The thesis establishes the linkages between gendered mobility of women and autonomy by re-conceptualising mobility using CA of Sen.

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5 Capabilities as notions of freedom, what real opportunities you may have regarding the life you may lead (Sen, 1987).
The philosophical underpinning of my thesis is oriented towards critical depth realism. The multiple dimensions of reality perceived by the critical realist approach at the real, actual and empirical levels, which I explain later in section 3.2, aids in unravelling the deep structures and mechanisms that interact with individual actors in a given context.Capabilities refer to the set of alternative beings and doings that enhance the opportunities of persons in the given context of his or her economic, social and personal characteristics (Dreze and Sen, 1989). The critical realist approach emphasizes that to understand person’s individualities, it is necessary to analyse the historical and social factors which condition their capacities, powers and liabilities (Bhaskar, 1989). It also recognizes the plurality of social structures which determine various social phenomena. Social phenomena and the capacities of individuals can be defined to a great extent by the structures and the social factors.

The depth realist orientation of my research is ontologically compatible with the open social system approach of Sen. Therefore, the CA framework facilitates the analysis at the individual level and the depth realist epistemological underpinning benefits my thesis in contextual understanding of mobility of women.

Methodologically, the comparative mixed method transformative research design (see section 3.1) is adopted in my thesis for stronger inference and it dovetails well in the CA framework with the depth realist orientation. By combining quantitative and qualitative methods of analysis using integrated mixed methods research design, the quantitative findings from survey data are substantiated by in-depth qualitative analysis of interviews for elaboration, completeness and for the sampling of cases in my thesis.

For analysing the mobility of women in informal paid work at the micro level, I have adopted a feminist theoretical lens which I intend to underpin the study (see details in Section 2.3.), to understand the connections between the local and global, ‘between the micro-politics of subjectivity and everyday life and the macro-politics of global political economy’ (Mama, 2007:152). Hence the gender aspect is a crucial component of my analysis, while exploring the domains of mobility and its multiple realities as experienced by women since there are wide divergences between men and women in given cultural and work contexts.

The role of informal work in improving women’s autonomy is suspect even though at the macro level the key role of women’s participation in labour markets to promote economic development has been widely accepted and recognised (World Bank, 2012). When women’s labour is underused or misallocated because they face discrimination in markets or societal
institutions that prevent them from completing their education, entering certain occupations and earning the same incomes as men, economic losses are the result as ‘women represent more than 40 percent of the global labour force and 43 percent of the agricultural workforce’ (World Bank, 2012:3). However, for women who are engaged in low quality employment, at the individual level, the question of whether low skilled, low paid work will improve their autonomy and well-being freedoms is a question that necessitates further research to analyse the currently disconnected macro policies and the micro realities.

Moreover, in the Indian context, “labour is controlled not only through the manipulation of various non-class social identities but also through the segmentation and fragmentation of labour markets and the blurred boundary between the organised and unorganised sectors” (Harriss-White, 2003:21). With “the predominance of the unorganized sector (informal sector) an important feature of employment in India, almost 96 per cent of female employment is in the unorganized sector as against 91 per cent for males. Job security and decent earnings are characteristics of employment only in the formal sector which constituted only 6 per cent of total employment in 2004–05” (India-HDR, 2011:103). As more women are engaged in informal work in India, it becomes questionable as to how the movement outside the household to participate in low quality work can improve the level of autonomy and well-being of women workers. Hence this study is justified in analysing mobility associated with informal work as capability and its effects on improving the autonomy of women workers, which helps in filling the gap in literature.

Before stating the main aim and objectives of the thesis in section 1.4, I will explain the concept of informal workers as adopted in my study. I have included informal workers in both the formal and informal seafood pre-processing units who are casually employed, and the fish vendors who are own account workers6 (as per ILO definition of informal employment) who buy and sell fish without any hired labour and capital. They are self-employed in the sense of not having any employer-employee relations with anyone while the seafood pre-processing workers are wage labourers.

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6 Own-account workers are those workers who, working on their own account or with one or more partners, hold the type of job defined as "a self-employment job", and have not engaged on a continuous basis any "employees", to work for them during the reference period. It should be noted that during the reference period the members of this group may have engaged "employees", provided that this is on a non-continuous basis. (The partners may or may not be members of the same family or household.) (http://laborsta.ilo.org/applv8/data/icsee.html)
The informal workers in this study are characterised by the features of informal wage employment as per ILO, that is, all employees whose employment relationship is, in law or in practice, not subject to any national labour legislation, income taxation, social protection or entitlement to certain employment benefits (advance notice of dismissal, severance pay, paid annual or sick leave, etc.). Accordingly the informal work dealt with in this study (A+B+C in Table 1) conforms to the ILO definition whereby there is no clear employer-employee relationship in the form of work pursued by women workers in fisheries.

<table>
<thead>
<tr>
<th>Production Units</th>
<th>Type of informal work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Informal (unregistered) Seafood pre-processing Units</td>
<td>A (Unit based Peeling)</td>
</tr>
<tr>
<td>Formal (registered) Seafood pre-processing units</td>
<td>B (Company Based Peeling )</td>
</tr>
<tr>
<td>Households</td>
<td>C Fish Vending (Own Account Workers)</td>
</tr>
</tbody>
</table>

Source: Author’s own tabulation.

In this thesis, I intend to unravel transformational mobility which can improve autonomy in mobility by performing a comparative study of the fish vendors and the seafood pre-processing women workers (locally known as peeling workers), linked to the domestic and global production chains in the socio-cultural context of the south Indian state of Kerala. Therefore, in the following section, I give an overview of the context of the research study, which is Kerala in India.

1.2 Context of the Research

Kerala is a unique State in India which presents a paradox of social advancement on one hand and economic stagnation on the other. Women in Kerala have traditionally enjoyed higher status and are better educated in comparison to their counterparts in other states of India. The human development indicators of Kerala reflect the progress made by the State in multiple dimensions of human development (see Table 2).
Kerala is way ahead of the other states in India in terms of human development and was placed third in the HDI (Human Development Index) ranking of states in India. Despite the positive development indicators for the State of Kerala and for the women in Kerala, it is intriguing to find that there are pockets of economic and social backwardness in the post globalisation and liberalisation phase. As noted in the HDR (Human Development Report) 2011, inequalities across social groups can still be observed in Kerala, from the high incidence of poverty for rural Scheduled Tribes (STs, 44 per cent) and Scheduled Castes (SCs, 22 per cent), as compared to the state average of 15 percent indicating further room for convergence within the social groups (India-HDR, 2011).

Historically, the matrilineal system followed by certain communities in Kerala gave pre-eminence to daughters rather than sons with respect to inheritance rights. The matrilineal system conferred some autonomy to women owing to property rights and residence in natal homes (Saradamoni, 1999). The access to, as well as control over resources elevated the status and position of women in the society, though it was confined to Nair communities. With changes in legislations brought about after independence, there has been gradual breakdown of the matrilineal system and the emergence of patriarchy. Ownership of land by Nair women in the post 1990s has not resulted in control over land or the income generated from it and has neither improved the negotiating power within the households for women (Arun, 1999:22). Hence the achievements in social indicators have not translated into better living and working conditions for women in Kerala, which I have examined further in section 2.7.1. of Chapter 2.

The fisheries sector is an important segment of Kerala economy. Being a coastal state, traditionally communities have depended on fisheries for their livelihood. It has been noted by scholars that the traditional coastal fishing communities form one of the most deprived sections of Kerala (Ramachandran, 1997). The fishing community in Kerala belongs to the

<table>
<thead>
<tr>
<th>Table 2: Human Development Index (HDI) and its Components</th>
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<tbody>
<tr>
<td>Components of HDI and HDI</td>
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<tr>
<td></td>
</tr>
<tr>
<td>Health index</td>
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<td>Income index</td>
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<td>Education index</td>
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<td>HDI</td>
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<td>GDI</td>
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</table>

social categories of Mukkuva and Anjootty (Latin Catholic), Dheevara (Hindu) and Pooislan (Muslim) (as per KIFWF).\textsuperscript{7} Women play multiple and significant roles in the fisheries sector as informal wage labourers and fish vendors. The women fish vendors, mostly found in southern part of Kerala, follow the occupation traditionally while the modern pre-processing women workers generally belong to the households where the men are engaged in fisheries.

Caste has a dominant role in the choice of occupation in many sectors in India. Caste continues to play a major ‘continuity’ role as a social allocator of occupations, even as the economy diversifies and it is still possible to observe a caste-clustering in the distribution of contemporary occupations and caste links in the practice of new and old technologies, commodities and services (Harriss-White, 2003:177). Therefore, the caste orientation of fish vending and peeling work will be an important parameter of analysis of mobility of women to unearth any existing social pattern.

The fisheries sector has contributed to the livelihood of fishing communities for more than four decades and is purported to be an important sector in the development of Kerala’s economy. Women play key roles in the fisheries sector at household level and in the fisheries market outside the household. Globalisation in fisheries meant integration of domestic fisheries sector with global economy through trade, infusion of modern technologies and new activities like seafood processing on a large scale in fisheries. As in other sectors, globalisation has had both positive and negative impacts on the fishing communities. The increase in availability of fish throughout the year and new forms of work like seafood processing on a large scale can be considered as positive effects of globalisation. However, the quality of work generated for women, especially in seafood pre-processing (peeling) and related work have not resulted in the improvement of the living and working conditions of women in fishing communities.

1.3 Statement of the Problem

The growth in the marine (seafood) export industry has not translated into better working conditions for the workers engaged in the industry at the lowest rung of the production chain, namely peeling/ pre-processing work dominated by women workers (see 3.5.1. in Chapter III for more details on peeling workers). The advantages that accrue to the large factories/companies in terms of higher exports do not necessarily trickle down to the workers.

\textsuperscript{7} Kerala Independent Fishworkers Federation (Kerala Swathanthra Malsya Thozhilali Federation) formed in 1980 is a non-party trade union by social activists and voluntary organisations to help the fishing community whose activities are mainly in the unorganised sector of fisheries.
in the lowest rung of the production ladder. Traditionally the pre-processing and peeling work have been undertaken by women. This has resulted in complete segregation of work with regard to seafood pre-processing. The occupational segregation in the fisheries sector is such that the lowest paid work in the marine export linked production chains are dominated by women workers. In order to minimise the costs of production at the pre-processing level which is labour intensive, the wages are kept much lower than the minimum wages and are mainly paid out at piece rates. The workers are not registered with the units though some of the feeder seafood pre-processing units are registered.

Another group of informal workers in fisheries are the fish vendors who also form an important segment of the fisheries work force. Women constitute majority of fish vendors in Kollam district. They are self-employed headload vendors who either do market or harbour based vending or door-to-door vending. Despite being a major group, women fish vendors and their work experiences have not been the focus of research in the context of informal work in Kerala.

Kerala has been an active State for unionisation and collective bargaining. However, the significance of women’s work in fisheries sector in Kerala has not received enough attention in the development discourse. The impact of work on autonomy of women is a key aspect as work defines and moulds an individual. In a given cultural context, it is significant to examine whether work helps in improving the autonomy of women as eudemonistically meaningless work not only subverts autonomous agency at the work place but also affects household autonomy (Veltman, 2014). It will be worthwhile to examine the situation of women workers in the pre-processing units in comparison to traditional fish vendors. The fishing community is one of the marginalised communities where poverty levels are much higher than the average poverty level of the State (Ramachandran, 1997).

Women’s role as fish vendors and pre-processing workers in fisheries (see sections 3.5.1 and 3.5.2 for the profile of peeling workers and fish vendors in my study sample) have not caught the attention of the various trade unions reflecting the unequal power relations and gender relations experienced by women in the State. Hence my focus in this study is on the mobility of women associated with informal work and autonomy linkages among informal women workers in the context of fisheries in Kerala, which can bridge the gap in knowledge as far as the knowledge about women in fisheries is concerned.
Recognizing the importance of the role of women’s work in fisheries, my intention is to analyse the mobility associated with work of women in fisheries and the factors that lead to transformational mobility to improve women’s autonomy. The next section states the main aim and objectives of the study.

1.4 Main Aim and Objectives

The main aim of the study is to examine whether mobility associated with two different types/modes of informal work can be transformational and improve the autonomy (decision making power) of women within the household in the fisheries sector in the Southern state of Kerala in India. The study aims to compare the pathways to autonomy of two groups of informal women workers-the seafood pre-processing (peeling) workers who are wage labourers and the women fish vendors who are self-employed. It examines whether the women workers engaged in seafood pre-processing unit based work as part of the global production chain and the group of women engaged in the traditional fish vending activity have transformational mobility which leads to higher levels of autonomy.

Based on the above stated aim, the following are the key objectives of the study:

1. To analyse the different domains of mobility associated with work between the two groups of women workers namely women engaged in seafood pre-processing work and women engaged in fish vending

2. To analyse the impact of transformational mobility on the perception of intra-household autonomy among the two groups of informal women workers, namely peeling workers vis-à-vis women fish vendors

3. To compare and contrast the causal mechanisms or pathways to autonomy among the two groups of informal women workers, namely peeling workers vis-à-vis women fish vendors

4. To examine the work and life experiences of women workers from their perspectives and women’s autonomy in the context of informal work

On the basis of the key research objectives the central research question for the study is stated below.

Central Research Question
How does ‘mobility’ (associated with informal work in fisheries sector) which has different domains (transformational and otherwise) contribute to improving women’s autonomy within the household in the socially progressive State of Kerala in India?

From the above stated central research question follows the four sub-questions which will be dealt with by adopting a transformative mixed method research design using both quantitative and qualitative methods. The supplementary questions which emerge from the overarching question are:

i. Can mobility be measured as a single construct for women workers? Are there multiple domains of mobility as experienced by fish vendors and peeling workers in fisheries?

The first research question of my thesis tries to explore a method of constructing a measurement scale of mobility of women workers for the first time in development studies discipline. To analyse the mobility of women with its various domains, this question examines whether mobility associated with fish vending work and pre-processing work entail high and transformational mobility or not. It enables a comparison of transformational mobility between the two types of informal workers in fisheries in Kerala based on quantitative analysis of survey data.

ii. What are the factors that determine ‘work mobility’ of informal women workers? Is the overall mobility level of women a significant factor that determines work mobility of informal workers?

The second research question tries to find out the various economic, personal and social factors which determine the informal work taken up by women in fisheries. To answer this question I use multiple regression analysis to model the key factors that determine women’s work mobility and overall mobility of peeling workers and fish vendors in fisheries in Kerala.

iii. What are the causal mechanisms or configurational pathways to ‘high mobility and transformational mobility’ in the context of fish vendors and peeling workers in fisheries?

The third research question compares and contrasts the pathways to high mobility and TM of women workers in fish vending vis-à-vis peeling work. Based on the survey data, the Crisp Set Qualitative Comparative Analysis (csQCA) is used to analyse the causal mechanisms which lead to transformational mobility or autonomy in mobility among women workers. It
also throws light on the differences in conjectural conditions that can lead to high mobility and TM among fish vendors and peeling workers.

**iv. What substantive theories emerge from the work and life experiences of women as fish vendors and peeling workers in the cultural context of Kerala?**

The fourth and the last research question of this thesis expounds the underlying social structures which define the work and life experiences of women workers using in-depth analysis of qualitative interviews. Substantive theories emerge using grounded theory analysis of interviews of informal workers which further illuminates the informal work experiences which impact on mobility, autonomy and ‘agentic’ behaviour of women workers in the cultural context of Kerala.

On the basis of the four research questions stated above, the following section outlines the structure of the thesis.

1.5 **Structure of the Thesis**

The thesis is organised as follows. In the next Chapter (Chapter II), a comprehensive review of literature related to the thesis is undertaken. As the topic of the study is related to mobility and autonomy which are essentially inter-disciplinary in nature, the relevant themes from geography, sociology and economics are reviewed in this chapter. The chapter also examines the important tenets of the Capability Approach, the epistemological underpinnings of depth realism and the feminist framework which will form the theoretical foundation of this study. The relevant literature pertaining to informal work, role of women in informal work in India, with specific focus on Kerala will also form themes for the literature review.

Chapter III will elaborate on the methodology used in conducting the research. The suitability of the mixed method approach in conducting the study and how the methodology fits into the research framework and how the study benefits from using the mixed method approach are some important aspects to be dealt with in this chapter. The detailed explanation of the quantitative and qualitative methods and the philosophical underpinnings in conducting the mixed method research is given in this chapter.

Chapter IV will analyse the concept of TM by measuring mobility using the Rating Scale Model (RSM), in the case of informal workers, including fish vendors and peeling workers. It will examine the degree of mobility permissible for the peeling workers and the self-
employed fish vendors in fisheries by constructing a measurement scale of mobility. The linkage between transformational mobility and high levels of autonomy within the household will also be a topic of discussion in this chapter.

Based on the results of the Rasch RSM and the survey data, Chapter V will examine the key factors that determine work mobility of women who take up informal work as fish vendors and peeling workers in fisheries. The factors are to be identified based on the survey data of 75 seafood pre-processing women workers and 75 women fish vendors. The multiple regression models will be used to analyse the socio-economic factors that determine work mobility and overall mobility of women in informal work in fisheries.

Chapter VI of this thesis explores the causal pathways to high mobility and transformational mobility of peeling workers and fish vendors. Based on the data collected through survey, the case oriented csQCA (crisp set Qualitative Comparative Analysis) method will be used to analyse the causal mechanisms which will lead to high levels of mobility and autonomy among women workers.

Chapter VII of this thesis provides the qualitative analysis of the interviews of informal women workers, which explores the problems of peeling workers and fish vendors in the cultural context of Kerala as workers and household members. The analysis in this chapter is based on grounded theory and I discuss the substantive theories that have emerged from the data on peeling workers and fish vendors. In this mixed method thesis, this chapter illuminates the understanding of women and work in informal settings in a specific cultural context.

Chapter VIII is the concluding chapter of my thesis which summarises the empirical findings of the quantitative and qualitative analysis in the light of the main research questions. The synthesis of the results, the main contributions of the thesis and the scope for further research in the themes are also discussed in this chapter.

1.6 Summary of the Chapter

In this introductory chapter I have given an overview of the role of women’s work in improving the mobilities and well-being of women as argued by the scholars in various disciplines. I have explained how I intend to re-conceptualise mobility as capability by introducing the new concept of transformational mobility (TM) using CA framework of Sen
to analyse whether mobility of women necessarily improves women’s autonomy in the context of informal work which is the main theme of my thesis.

Further, I presented the compatibility of depth realism with the CA framework as the most suitable philosophical foundation for my study to analyse mobility as experienced by women workers with its various domains. The mixed method research design of my thesis has provided the basis for combining the quantitative and qualitative methods for elaboration, stronger inference and completeness which fits well with the depth realist orientation. I have also defined the concept of informal work which I have adopted in this study and its conformity to the ILO definition. I have provided a brief explanation of the context and setting of my study in Kerala, which is unique in many ways from the development studies perspective.

Later, I have stated the central research question of the study and the four main research questions that I intend to explore by using integrated mixed method research design. The overarching central research question of my thesis is: How does ‘mobility’ (associated with informal work in fisheries sector) which has different domains (transformational and otherwise) contribute to improving women’s autonomy within the household in the socially progressive State of Kerala in India? I have also stated the four sub-questions based on the central research question in the chapter.

The last section of this introductory chapter provided the structure of the thesis and the way the chapters are organised to deal with the four research questions of my thesis. As stated in the structure of the thesis, the following Chapter II provides a comprehensive review of literature and provides myriad perspectives on women’s work, mobility and household autonomy.
2 CHAPTER II: WORK, MOBILITY OF WOMEN AND HOUSEHOLD AUTONOMY: AN OVERVIEW OF DIVERGENT VIEWS AND MULTIPLE REALITIES

The focus of this study on mobility and autonomy of women engaged in informal work in fisheries in Kerala, India is situated at the confluence of development studies, human geography and sociological disciplines. In this chapter, first I critically review the literature on women and work examining autonomy and mobility aspects and the household models in economics. Further, it demonstrates that CA (Capability Approach) offers a useful framework in investigating mobility as capability and how mobility, work and autonomy are interrelated in human flourishing.

The outline of the chapter is as follows. First, I have attempted to synthesise the multiple strands of scholarly work which contributed to the understanding of the multidimensional concepts of women’s mobility, autonomy and agency. I have examined the household models in economics and the multiple realities which throw light on the place of women within the households and the competing theories of women and work and analyses the factors that determine the labour supply decisions of women. Further, I give an overview of the interdisciplinary perspectives on mobility to show how the mobility concept has been treated in various disciplines and the lack of discourse on the linkages between mobility and autonomy. Later, I elaborate the capability approach framework and explain the compatibility of capability approach and the feminist theory to analyse exploitative work settings which impinge on women’s mobility and autonomy. This chapter also looks into the evolution and growth of informal sector at the global level and its significance for women’s work. The chapter also examines the gender relations in India and Kerala by citing some of the studies on women in general. It also highlights some of the micro level studies done in Kerala. Lastly, I have identified the gaps in the study of women’s mobility and autonomy in the context of informal work and links them to the research questions. It concludes with a summary of the chapter.

2.1 Autonomy and Women

Autonomy has intrinsic value to human life. The central idea that underlies the concept of autonomy is indicated ‘by the etymology of the term: *autos* (self) and *nomos* (rule or law) as it was applied to the Greek city states’ (Dworkin, 1988:12). Scholars have defined autonomy in multiple forms namely personal autonomy, political autonomy and moral autonomy. The
moral autonomy of individuals conceived by Kant for the first time reflected the capacity for self-determination of individuals wherein individual has authority over one’s own actions so that no external forces can influence the decisions or actions of individuals. Autonomy is intrinsically valuable as it expands human potentials and people’s opportunities to participate in social life and more autonomous people are in better position to expand the potentials (Castillo, 2009:11). Therefore, autonomy reflects human wellbeing and is important as a means to promote human development. Dworkin conceives ‘autonomy as a second-order capacity of persons to reflect critically upon their first-order preferences, desires, wishes and so forth and the capacity to accept or attempt to change these in light of higher-order preferences and values. By exercising such a capacity, persons define their nature, give meaning and coherence to their lives and take responsibility for the kind of person they are’ (Dworkin, 1988:20). The various definitions of autonomy show that autonomy is valuable for human life for guiding one’s actions, for the wellbeing of individuals in society and for overcoming the barriers or constraints imposed on individuals by external factors.

Scholars have noted that autonomy and agency are closely related which makes them dependent on the socio-cultural contexts. At a practical level, autonomy as a capability (feasible to be exercised) can be analysed in terms of three determinants: entitlements, agency and multilevel structural contexts, which are to be studied individually and in interaction (Castillo, 2009). Entitlements are “the set of alternative commodity bundles that a person can command in a society using the totality of rights and opportunities that he or she faces” (Sen, 1984:497). Access to physical, material and other intangible resources determine the extent to which people can exercise their autonomy. However the personal characteristics and circumstances define conditions of negotiation and constraints which are defined as ‘entitlement relations’ (Sen, 1982). Hence, the cultural and social contexts become key influential factors which enable a person to exercise or not to exercise autonomy.

2.1.1 Work, autonomy and women

Work is a social context where autonomy of persons can develop or can get destroyed. Work also has an impact on self-esteem and social status. For instance, Rawls (1996) contends that meaningful work has an important role in improving self-respect and maintains that the lack of ....opportunity for meaningful work and occupation is destructive…of citizen’s self-
respect. Further, in his Theory of Justice, Rawls contends that opportunity for meaningful work is a social basis of self-respect and that “monotonous and routine occupations are deadening to human thought and sensibility (Rawls, 1971:529)”. Therefore, the lack of self-respect owing to the distorting influence of work on autonomy is an important standpoint which can substantially contribute to the understanding of women’s autonomy.

As noted by Roessler (2012: 84), “work is special, in the sense that it is not only instrumental but also formative and the formative character of work means that the work we do, and its organizational form, has an influence on how we live, on who we are, and how we see ourselves—and not only because of the different forms of the organization of work, but also simply because of the work we do……..if the formative influence of work distorts one’s autonomy, then she will be less able to (autonomously) develop and maintain a healthy identity.” Analysing the social context of work and its impact on autonomy in different cultural context can throw light on the interconnectedness of work and women’s autonomy.

Autonomy of women is a much debated topic and where patriarchal social structures impose impediments to the self-determination of women, autonomy of women is anathema in many cultures. In such cultural contexts, women themselves consider autonomy as something undesired for and beyond them, given their status as individuals in the society. Hence a feminist’s interpretation of autonomy which is relational for women and which takes cognizance of the cultural and work contexts of women is important to analyse autonomy of women. In the next section I examine the relational account of autonomy as proposed by feminists and its suitability to this study of mobility and autonomy of women workers.

2.1.2 Relational autonomy and women

Feminists have argued that the atomistic approach to autonomy ignores the social relationships and equates the male stereotyped traits of independence, self-sufficiency and detachment from relationships as autonomy (Mackenzie and Stoljar, 2000:39) and that autonomy in practice was mostly applied to men. They have suggested that women find autonomy to be a notion inhospitable to women, one that represents a masculine-style preoccupation with self-sufficiency and self-realization at the expense of human connection.

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8 Self-respect has two elements; one is “sense of one’s value or worth and second is a confidence in one’s ability, so far as it is within one’s power to fulfil one’s intentions” (Rawls, 1971). Self-respect is in fact dependent on affirmation by others in a given social context.
(Friedman, 2000) Therefore, a relational account of autonomy is necessary to understand autonomy of women in reality.

The relational approaches to autonomy analyse the specific ways in which oppressive socialization and oppressive social relationships can impede autonomous agency at various levels, that is, ‘how the social norms and institutions, cultural practices and social relationships play in shaping beliefs, desires and attitudes of agents in oppressive social contexts and how the oppressive environments impair the development of competencies and capacities necessary for autonomy including capacities for self-reflection, self-direction and self-knowledge’ (Mackenzie and Stoljar, 2000:22). ‘Relational autonomy’ is the label that has been given to an alternative conception of what it means to be a free, self-governing agent who is also socially constituted and who possibly defines her basic value commitments in terms of inter-personal relations and mutual dependencies (Christman, 2004:143). So, essentially, the relational approach will take a non-individualized view of autonomy and also focus on the social dynamics and social structures that influence the functioning of autonomous individuals.

It is the relational autonomy which is practical and applicable to women since women are socially embedded and are not atomistic individuals who pursue individual interests to attain self-determination. The role of women as daughter, wife, mother and grandmother through her life stages to a great extent influence the decisions and actions taken by her which reflect relational autonomy. The relational nature of women’s autonomy is evident in various pieces of scholarly work in the areas of demography, development studies and sociology, discussed in the following paragraphs, which tried to unravel the dynamics of women’s autonomy.

Several studies have analysed and measured autonomy of women which clearly bring out the significance of influential social factors and household structure in given cultural and social contexts. In one of the earliest studies in demography in India, Dyson and Moore (1983) held that marriage and kinship patterns permit women to have more freedom and decision-making authority in South India in comparison to their counterparts in North India. It was noted that the women had greater say on family decisions in the south which reflected in the fertility decline in the same area. In demographic studies on autonomy, Vlassoff (1994) reports that among the indicators, mobility had larger impact on autonomy than the education of women in a study of rural women in Maharashtra.
Jejeebhoy and Sathar (2001) argue that traditional factors conferring status on women have greater influence on enhancing women’s autonomy than education and employment. Their finding was based on a comparative study of women in India and Pakistan. The study used the dimensions of autonomy at various levels, namely (1) economic decision making; (2) mobility;\(^9\) (3) freedom from threat from husband; and (4) access to and control over economic resources to construct a composite index to measure autonomy. Scholars have also found that earned income had a greater role in determining the autonomy of women. Just being employed in the family farm and having unearned income did not increase the autonomy of women at all (Anderson and Eswaran, 2009). Studies have thus shown that ownership of assets and access to labour markets can facilitate female autonomy in countries like Bangladesh and it was one of the dimensions of autonomy found to be a key correlate which influenced wife-beating (domestic violence) in a comparative study of rural Tamil Nadu and Uttar Pradesh in India (Jejeebhoy, 1998). The author notes that in Tamil Nadu, access to and, especially, control over resources appeared to reduce chances of violence considerably while in Uttar Pradesh, where seclusion of women was more strictly enforced, it was mobility which had similar influence in reducing wife-beating. This reflects the context dependency of each dimension of autonomy of women.

The existing literature on autonomy reveals that direct measures or indicators of autonomy like work participation, control over resources, freedom from domestic violence, mobility and political participation are adopted by scholars to measure autonomy in different cultural contexts (Mencher, 1988; Blumberg and Coleman, 1989; Desai and Jain, 1994; Riley, 1997; Jejeebhoy, 2001; 2000). However, there are studies which have shown intriguing findings about autonomy of women and its relationships with the direct measures of autonomy such that the indicators may not be universally applicable and may vary depending on the cultural contexts. For instance, in the southern state of Tamil Nadu where women are comparatively better off in terms of literacy outcomes and work participation rates, scholars have found that though women manage household finances, they do not have the freedom to spend money on themselves and women rarely have the freedom to move around without their husbands’ knowledge and consent, even if it is in the company of other women (Ravindran, 1999). Recent studies in India have found that the determining factor seems to be gender rather than either class, community or region which influence the decision making power and status of

\(^9\) The study used a mobility index to capture the score, based on 5 places where the woman could go unescorted. It was clear from the study that women had limited mobility.
women (Hasan and Menon, 2004). All these studies point to the fact that the analysis of the multidimensional concept of autonomy of women needs to juxtaposition the concept in a relational way by analysing the social structure and cultural factors. The next section examines how autonomy has been defined and measured in various studies and what evidence exist for the study of autonomy of women.

2.1.3 Women’s autonomy: definitions, measures and related findings

Scholars have defined autonomy of women in diverse ways. With the study of Dyson and Moore (1983) on the relationship between women’s autonomy and fertility in India, the concept of women’s autonomy gained greater attention and focus in demography, sociology and development studies, especially in India. As one of the earliest definitions, Dyson and Moore defined autonomy of women as:

“the ability - technical, social, and psychological - to obtain information and to use it as the basis for making decisions about one's private concerns and those of one's intimates. Thus, equality of autonomy between the sexes in the present sense implies equal decision-making ability with regard to personal affair” (Dyson and Moore, 1983:45)

In simple terms, autonomy is the decision making power of individuals. Whether as a woman, she is able to take decisions on her own based on her technical, social and psychological abilities, is a pertinent question. Other definitions of female autonomy adopted by scholars are given in Table 3.

The definition by Dyson and Moore (1983) comprehensively captures the various dimensions explained by other scholars in their definitions of autonomy as shown in Table 3. The key focus is whether women are able to take decisions for themselves within the households and outside relating to their own concerns and the concerns of other household members.
Table 3: Definitions of Autonomy of Women

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<tr>
<th>Author</th>
<th>Definition</th>
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<tr>
<td>Dixon, Ruth.B. (1978)</td>
<td>“the degree of women’s access to (and control over) material resources (including food, income, land, and other forms of wealth) and to social resources (including knowledge, power, and prestige) within the family, in the community, and in the society at large” (p.6)</td>
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<tr>
<td>Dixon-Mueller, Ruth (1998)</td>
<td>“Female autonomy refers to an individual’s capacity to act independently of the authority of others. Like female status it is multidimensional, for a woman may have considerable autonomy in some spheres of activity but very little in others.” (p.3)</td>
</tr>
<tr>
<td>Jejeebhoy (2000)</td>
<td>Defined autonomy and empowerment as more or less equal terms, and defines both in terms of women “gaining control of their own lives vis-a-vis family, community, society, markets.” (p.205)</td>
</tr>
<tr>
<td>Jejeebhoy and Sathar (2001)</td>
<td>“The control women have over their own lives- the extent to which they have an equal voice with their husbands in matters affecting themselves and their families, control over material and other resources, access to knowledge and information, the authority to make independent decisions, freedom from constraints on physical mobility and the ability to forge equitable power relationships within families.” (p.688)</td>
</tr>
</tbody>
</table>

Source: Author’s compilation based on studies cited.

This study will be based on the definition by Dyson and Moore (1983) and will focus on the extent of decision making or autonomy of women within the household. It will not look at the empowerment aspects, which are broader concepts, and have been used interchangeably by some authors (e.g. Jejeebhoy, 2000).

The concept of empowerment is a broader, more dynamic concept, which functions as an attribute at both the group and individual level; it is both a process (that of gaining power) and a condition (that of being empowered) (Dixon-Mueller, 1998: 2). As Dixon (1998) further notes, female empowerment is the capacity of individual women or of women groups to resist the arbitrary imposition of controls on their behaviour or the denial of their rights, to challenge the power of others if it is deemed illegitimate, and to resolve a situation in their favour. Autonomy, in contrast, is a narrower concept: a woman who is autonomous in choosing work may not be empowered to struggle against exploitative wages and working conditions. Therefore, this study has its focus on household autonomy of women workers which is the first step towards empowerment and agency in a broader context. By linking mobility associated with work and autonomy of women, my study will further add value and understanding into the multidimensional concept of autonomy.
To measure autonomy or decision making power of individuals is complex since the decision making pertains to multiple levels both within and outside the household. In the earliest studies on autonomy, scholars have used indirect proxy measures like educational levels, labour force participation and the like to capture decision making power of individuals while recently direct measures have gained currency. However, combinations of indirect proxy measures of autonomy (like kinship variables) have been criticized by many scholars. The single one dimensional measures of education level and labour force participation will not capture the decision making power of individuals. For instance, an educated married woman in India, who also has paid employment in a patriarchal rural household setting, may not enjoy the freedom to purchase assets or move to natal village in an autonomous way. Some of the indicators commonly used in surveys as well as by scholars in their studies to measure autonomy of women are given in Table 4. The measures like ‘who decides what to cook’ in NFHS II are ambiguous and will not necessarily reflect the decision making power or autonomy of women within the household. Hence in this thesis I will use self-reflective questions along with selected direct indicators of autonomy. In addition, the indicators have been further modified and additional variables included to measure autonomy.
As noted by Agarwala and Lynch (2006) the autonomy items do indeed cluster into distinct and meaningful dimensions and studies on autonomy should, continue to measure autonomy in its multidimensional form. At the same time, the various dimensions of autonomy can indeed be considered part of a single underlying construct, but also that they have distinct contributions to autonomy: each dimension can variously affect and be affected by different factors, interpretations on the causes and effects of autonomy as a whole would be facilitated by analyses that do not examine each dimension separately, but rather combine all dimensions into a single model. But as evidenced from studies mentioned earlier (Jejeebhoy, 1998) it is not necessary that the indicators of autonomy will have similar effect in two cultural contexts even within the same country. Therefore the selection of indicators to capture the dimension of autonomy in a given socio-cultural context which can aptly reflect the reality is crucial. Hence in my study, a combination of indicators based on earlier studies and supplemented by additional variables to suit the context have been developed to measure autonomy of women, the details of which are given in the methodology section 3.4.1. in Chapter III.
In the context of developing countries like India, the single one dimensional measure like educational levels, access to property etc. may not be sufficient to capture the autonomy of women especially in the context of constraints on women’s freedoms and opportunities and the choices available. Therefore, along with one dimensional measure the use of survey responses to specific self-reflective questions pertaining to household decision making vis-à-vis asset ownership, mobility and work need to be supplemented to analyse the choice and control that women have over their own lives and their own perception of autonomy which, to a certain extent, reflects their own awareness about their decision making power. Autonomy being a multi-dimensional concept, self-reflective survey questions can be supplemented with additional data based on interviews and can be framed to measure autonomy in specific domains of life, further details are dealt with in Chapter 3 (see section 3.5.1).

So far the research on autonomy of women has concentrated on access to assets, paid work, and educational levels with both direct and indirect measures of autonomy. Therefore, in this study women’s autonomy will be analysed using a combination of indicators based on survey questions to capture the autonomy of women or their decision making power within the household with respect to economic dimensions, family/interpersonal decisions, mobility or the freedom to move and socio-cultural dimensions of autonomy which are all relational rather than stand-alone processes of individual actors.

As this study is on household autonomy, it is worthwhile to critically examine how the neoclassical household models attempted to analyse the dynamics within the household. The next section examines this aspect and the fallibility of household models in explaining the intra household differences in resource allocation.

2.2 Can Household Models Explain Multiple Realities?

The household models gained significance with ‘Becker’s Treatise on family’ (Becker, 1981) which was built on neoclassical assumptions of maximising preferences and a household utility function. The neo-classical household models attempted to analyse the intra household allocation of resources which were categorised into unitary and collective bargaining models as shown in Table 5. The unitary model of the household presumes the aggregation of preferences for all members to maximise the welfare of the household while the collective non cooperative model argues that the intra-household allocations reflect differences in preferences and bargaining power of individuals within the household. The presence or
absence of resource pooling within married couple households provides a crucial test of alternative models of family or household collective choice, and that the evidence is against Becker’s altruist model (Pollack, 2003). It was noted by scholars that the decision making outcomes of households do not invariably represent the equitably-weighted aggregation of individual preferences rather they represent the preferences of the dominant members (Kabeer, 2000:30). Chiappori et al. (1993) have maintained that the theoretical foundations of the unitary model are weak and its underlying assumptions are of questionable validity and that it has not stood up well to empirical testing.

Some of the household models examined the two-way relationship in which a household’s balance of power between husband and wife influences its choices, the choices can in turn affect the household’s balance of power and in turn the female labour supply and child labour supply decisions (Basu, 2006). Others, however, rejected the unitary model of household behaviour on the basis of country case studies and argued for the significance of human capital and control over assets by women as factors influencing household behaviour (Quisumbing and Maluccio, 1999). The role of women in decision making within the household is critical whether it is a household model headed by a benevolent male household head or it is governed by the rules of cooperation and the pooling of resources. It is noteworthy that the women’s role in decision making and the extent of freedom and choices available to each member of the household, especially women members, is dependent to a great extent on the socio-cultural factors. The socio-cultural factors which prevent women from being educated, mobile, or employed are major impediments to improving the household’s balance of power and thereby decision making by women which point to the significance of gender relations within the society.

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10 The unitary model fails as in the case of analysis of gender specific expenditure by Hoddinott and Haddad (1995) and the prevalence of domestic violence as evidenced in the study by Tauchen, Witte and Long (1991). These studies violate the assumptions of the unitary model of maximising behaviour and stable preferences.
Table 5: Household Models and Autonomy of Women

<table>
<thead>
<tr>
<th>Types of Households</th>
<th>Pooled Resources</th>
<th>Household Decision Making on Allocation</th>
<th>Place of women in decision making</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unitary Household Models</strong> (common preferences model, benevolent dictator model or altruism model)**</td>
<td>Yes</td>
<td>Benevolent head mostly men; aggregation of preferences</td>
<td>No role for women; woman loses out</td>
</tr>
<tr>
<td><strong>Collective Models</strong> (Cooperative or non-cooperative)</td>
<td>Yes/No</td>
<td>Collective decision making</td>
<td>Women can play a role in decision making if they have access to resources, but not a sufficient condition; woman loses out</td>
</tr>
<tr>
<td><strong>Bargaining Models</strong></td>
<td>No</td>
<td>Each according to one’s ability to bargain;</td>
<td>Women can bargain better if they have access to resources, but not a sufficient condition</td>
</tr>
</tbody>
</table>

Source: Author’s compilation.

All these studies point to the significance of gender relations in a given society which influence the decision making power of individuals within households. Gender relations defined as the social construction of roles and relationships between men and women (Baden and Goetz, 1997) result in subjugation of women, unequal divisions of resources and power which are reinforced by the social and cultural factors. The household models are unable to capture the renegotiation and adaptation of gender roles that occur in practice when households are caught up in changing circumstances that threaten the viability of their existing livelihoods (Hart, 1995).

In a similar vein, the livelihoods framework of Ellis (2000) clearly points out that irrespective of the headship of the household, the inequality in the distribution of consumption within the household makes women poorer than men and disadvantaged with respect to either assets or activities or some combination of both, linked to inequalities of access to resources and income generating opportunities (Ellis, 2000:141). Autonomy of women is multidimensional and is complex and cannot be modelled and fit inside the framework of neoclassical households which aimed at joint maximisation of preferences which is positioned away from reality as evidenced in many studies. Therefore it is necessary to analyse the household with a feminist lens and investigate how the women as actors play out their roles in the work place...
and the households and the multiple interactions which can lead to their mobility and autonomy within the household. The next section throws light on the various competing theories which analysed women’s participation in economic activity and explains why this study requires a feminist interpretation of women’s work and household dynamics to analyse the concepts of mobility and autonomy of women.

2.3 Competing Theories of Women and Work: Need for Feminist Interpretation

Globalisation has resulted in diverse informal work arrangements and there is evidence of significant proportion of women workers in the informal work force across the world. The pioneering work of Ester Boserup (1970) highlighted the contribution women make in the sphere of productive work and questioned the gender neutrality in the costs and benefits of development. Later, the role of women in development came to be recognised through various approaches to incorporate the contribution of women to development namely, WID (women in development) and GAD (Gender and Development). Although there have been multiple approaches towards incorporating women in economic development, these have not been able to fully address the issues and concerns of women owing to the diversity of the socio-cultural contexts to which women belong. In the following paragraphs, I critically examine some of the theories put forward by scholars seeking to explain the factors that determine participation of women in economic activity outside the household especially the theories of the neoclassical and human capital schools and try to examine the limitations of these theories in explaining the labour supply of women workers.

The theories of labour market within the neoclassical framework analysed labour like any other commodity wherein the demand and supply interactions determined the price/wage of labour. The supply of labour was mainly determined on the basis of the choice between work and leisure. The empirical evidence did not support the claims that the labour supply decisions of individuals could be explained by the marginal returns to work and leisure. The neo-classical story of the household came under critical scrutiny in the light of a range of empirical findings which appeared to be difficult to reconcile with the assumption of joint welfare maximisation within the household and the underlying assumptions of unified preferences and pooled resources on which it rested (Kabeer, 1998:94). In the neoclassical world where markets are by definition sites of free and voluntary exchange, exploitation cannot exist (Folbre, 1986:247) and the joint maximisation of utility by the households assume away differential access to resources within households. The conventional theories of
microeconomics at the firm and the household levels failed to explain the intra-household differences in labour outcomes of individuals within the households. The stratification in the labour markets on the basis of gender, race and human capital could be explained in a much more realistic manner by the segmentation theories.

The persistent inequalities in labour market outcomes were analysed by the human capital theory of Becker (1975) which factored in the discriminatory tastes of employers, workers and consumers which give rise to discrimination in the employment and wages of workers based on gender, race and other characteristics. The decisive role of education in determining higher wages for men was cited by Becker and reflected a direct relation between education, productivity and wages. The human capital approach to a certain extent could explain the differences in wages that accrued to labour on the basis of differences in skill levels and training. However the question as to why labour in similar circumstances end up with differential access to education and training could not be explained by the human capital approach to labour market.

The inequalities that underpin labour as a commodity became a subject of enquiry and led to the rise of segmentation theories of labour market, the dual market hypothesis and occupational segregation theories by gender, race, and class. Labour market segmentation theory challenges the neoclassical economic theory and human capital theory on the grounds that workers and jobs are not matched smoothly by a universal market mechanism (Bauder, 2001: 38). The segmented labour market approach maintained that the labour markets are stratified along gender, race, and migrants. The dual labour market hypothesis, and the job crowding hypothesis are variants of the segmented labour market approach which identified the divisions within the labour market, and occupational segregation along gender lines. The fact that significant wage and employment differences persist between groups within the labour force are not justified by differential productivity and human capital investment (Smith, 1994:98).

The neoclassical economics and the variants of segmentation theories have contributed to the analysis of factors that determine labour supply. However the questions as to how and why women are discriminated in jobs and why there is dominance of women in certain types of jobs and in certain sectors, are questions that still remain unanswered. The labour market, instead of reflecting differential ability and productivity, is an active generator of economic inequality (Smith, 1994:105). It is in this context the feminist theories emerged which
analysed the invisibility of women workers and their contribution which are unaccounted for in the national incomes.

Feminists have questioned the unaccounted value of women’s work both within and outside the household. The mechanisms within patriarchal structures continuously undervalue the contributions made by women both within and outside the household. The undervaluation of women’s contribution has continually placed women in subordinate positions. The issues of low wages, wage differentials and sex stereotyping of tasks are all reflection of such subordination, and feminist scholars like Kalpagam have brought the issues of division of labour and labour processes into the centrality of analysis (Kalpagam, 1986). The labour supply or participation of women in the labour market is influenced by not just mere substitution between work and leisure, since work for women is not necessarily confined to paid work outside the household but also the care work for children and dependants within the household.

The socially accepted roles and norms define the work pursuits of women in many societies. Women have to balance the work within the household and the paid work outside the household as care work traditionally belongs to the work domain of women in the majority of societies. The ‘triple’ burdens of women have been identified by Moser (1989) and are widely accepted in the gender and development framework. The Moser framework specifically addressed the challenges of the women in the third world belonging to the low income households who have to balance the roles to meet the productive, reproductive and community roles. To overcome these challenges, Moser suggested the need to identify the strategic gender needs and the practical gender needs of women wherein strategic gender needs are those identified as feminist in terms of bringing about change in the existing subordinate position of women in society which results in sexual division of labour and institutionalised forms of discrimination on the basis of gender namely lack of property rights to women etc. Practical gender needs are basic needs like access to food, shelter and water which directly impact the wellbeing of women who are the household carers; these are needs which are to meet the daily survival of women as experienced in the given conditions of subordination. Therefore, the discontinuity in labour supply by women during the life cycle directly corresponds to their reproductive and care responsibilities.
The arguments of feminist theorists have brought to light the triple burden\textsuperscript{11} of women as mentioned earlier, which imposes barriers in the participation of women in the labour market on a continual basis over the life cycle. The household division of labour is often cemented by the traditional customs and norms. Hence, it is essential to examine the participation of women in any labour market using the feminist lens to incorporate the factors that determine the domains of women’s work in given cultural contexts.

Gender asymmetries in employment can be seen as manifestations of deeper asymmetries within society rather than in terms of simple causation (Kabeer, 1998: 103). In patriarchal societies where gender relations are defined by the traditional norms and attitudes, the intra-household differences are evident in access to education, health and employment. In addition, in countries like India, the invisibility of women’s work is a critical issue and the low labour participation by women can be attributed to socio-cultural variables like caste status, landholding status and the level of literacy (Kalpagam, 1986).

In the post globalisation scenario, with liberalization and growth of export oriented global production chains, informalisation and feminisation have resulted in women being categorised as a source of cheap labour. The work is stereotyped as ‘women’s work’ and that is how it has come to be accepted in the neo-liberal regime, since women are being increasingly exploited as unskilled workers’ for the benefit of capitalist production (Elson and Pearson, 1981: 88). The paid work has invariably resulted in increased mobility for women, in terms of movement outside the household for paid work. However, the nature of work is an important determinant of women’s well-being. Whether the mobility associated with work has improved women’s ability to meet the practical and strategic gender needs is a key issue in some cultural contexts.

Although the aforementioned theories attempted to explain some of the visible factors which influence the ability of women to attain the strategic goals and to meet their practical needs, but there is lack of discourse on the underlying invisible effects that mobility associated with work may entail for women. In such a scenario, whether paid employment necessarily improves the wellbeing of women is a critical question to be addressed in the feminist analysis of women’s labour market outcomes. The following paragraphs examine how the feminist theoretical lens can be juxtaposed to analyse the significance of paid work for women’s mobility and autonomy.

\textsuperscript{11} Moser framework outlines the strategic and practical needs of women and the triple burden.
Feminism as an international political and intellectual movement to challenge the subordination of women with many roots and trajectories and the interaction between feminism and development has generated a series of approaches to development and a need for gender expertise (Mama, 2007:150). The various approaches to analyse the gender issues in development, began in the early 1970s with WID\textsuperscript{12} (Women in Development) to WAD (Women and Development) and GAD\textsuperscript{13} and in more than four decades have attempted various strategies to analyse and investigate the reasons for the oppression and exploitation of women, as individuals, mothers, daughters, workers and in various roles that they play out in the society. While some approaches focussed on equity, equality, others started giving attention to efficiency, gender needs, and gender mainstreaming. The underlying objectives of all these approaches are to voice the issues and concerns of women who remain invisible and subjugated in many ways owing to the subordinate position in a patriarchal order. All approaches have different underlying rationales for development and they relate to different women’s roles and they address different practical and gender needs\textsuperscript{14} (Moser, 1989).

Without understanding the foundation and functioning of the asymmetric relationship between men and women, it is not possible to overcome it (Mies, 1986:44). There have been various strands of feminist thoughts which have tried to explain women’s subordination namely, Marxist feminism, radical feminism, liberalism and dual systems theory, each with its own distinct perspectives (Walby, 1990:1). The focus of analysis of each of these strands varied from sexuality and violence, in the case of radical feminists to patriarchal and gender relations and the labour market outcomes in the dual systems theory.

The Marxist feminist writers’ have argued that the lower pay and lesser labour force participation by women are critically shaped by the capital-labour relations. The Marxian framework analysed the exploitation of wage labour for appropriation of surplus value by the capitalists and gauged the alienation of labour in the capitalist production and social relations.

The informal work in demeaning work environment in the neo-liberal regime alienates labour

\textsuperscript{12} Ester Boserup’s ‘Women’s Role in Economic Development’ paved the way for considering the woman question in development policy circles and it resulted in the ‘Women in Development’ WID approach.

\textsuperscript{13} The basic premise of GAD (Gender and Development) framework is that women in any society represent an unequal, disadvantaged or oppressed social category and GAD framework is flexible and inter disciplinary reflecting diversity of theoretical backgrounds and methodological approaches (Moghadam, 1998).

\textsuperscript{14} According to Moser, practical gender needs are the needs that women themselves identify in their socially accepted roles in society; and strategic gender needs are the needs that women identify because of their position in society. The strategic needs assist women to achieve greater equity in their relationship with men in society and they vary across contexts, between classes and ethnic groups.
especially women, as the low paid informal work is to supplement income as they belong to the lowest segments of society.

In commenting on how capitalism leads to alienated labour, Marx observes that, ‘the work is external to the worker, that it is not a part of his nature, that consequently he does not fulfil himself in his work but denies himself, has a feeling of misery, not of wellbeing, does not develop freely a physical and mental energy, but is physically exhausted and mentally debased. His work is not voluntary but imposed, forced labour. It is not the satisfaction of a need, but only a means for satisfying other needs. It follows from the relation between alienated labour and private property, that ‘the emancipation of society from private property, from servitude, takes the political form of emancipation of the working class, not in the sense that only the latter’s emancipation is involved, but because this emancipation includes the emancipation of humanity as a whole’ (Marx, 1844:85-86, translated by Bottomore and Rubel (1956:177)).

However the traditional Marxian economic theory is too narrow and will not be a sufficient theoretical frame to analyse informal work by women since it completely ignores the ‘woman question’ and the double burden (unpaid domestic work and waged work outside the household) of women (Custers, 1997:130-31). Moreover, the Marxian frame of relations is with reference to the capitalist whereas to analyse the issues of women workers the patriarchal relations embedded in the society are pertinent to capture the inequalities, discrimination and division of labour (Walby, 1990:13).

Patriarchy is a system of social structures and practices in which men dominate, oppress and exploit women and the use of the term social structure implies rejection both of biological determinism and the notion that every individual man is in a dominant position and every woman in a subordinate one (Walby, 1990:20). Walby (1990) adds, that the patriarchal relations get reflected in the arena of production relations, within household, in paid employment, in the State and cultural institutions. As observed by Hartmann, the patriarchal relations in employment cannot be understood in terms of capitalism alone because they predate the rise of this system and that the particular form capitalism later adopted only inherited the elements of that already developed patriarchy. Accordingly, in the absence of patriarchy a unified working class might have confronted capitalism, but patriarchal social relations divided the working class, allowing one part (men) to be bought off at the expense of the other (women) (Hartmann, 1981:21). As argued by Kandiyoti (1988), in certain cases, as in
the context of sub-Saharan Africa women negotiate and bargain within patriarchal structures (‘patriarchal bargain’) and become relatively more autonomous in comparison to their counterparts in the Middle East and South Asian societies. While in the case of Africa, it is access to resources and in countries like Singapore modernity, nuclear households and women’s access to salaried jobs have given greater autonomy to women. However, modernity and education may not necessarily result in patriarchal bargain as is evident in many countries in South Asia and the Middle East. Therefore, in the majority of the cases, it can be seen that capitalism has not been able to remove the embedded social relations and norms in the society and that the capitalist production relations have used the social relations to its advantage by maintaining the socially accepted norms and differences.

Patriarchy by establishing and legitimating hierarchy among men (by allowing men of all groups to control at least some women), reinforces capitalist control and capitalist values shape the definition of patriarchal good and hence the study and practice of the issues of feminism is essential for the struggle against capital and patriarchy (ibid, 28, 32). The Marxist-feminist theory is concerned with both the paid and unpaid forms of exploitation which are used to gather profits under modern capitalism (Custers, 1997:130-131). The neoliberal policies have been critiqued by several scholars who have cited exploitation as the cornerstone of capitalist production relations in the developing economies. Work is a critical frame of reference to make an assessment of the oppressive social conditions that can prevent the emergence of autonomy of women (Friedman, 2003). In this study which compares and contrasts women’s work linked to global production chain and traditional fish vending, I propose to adopt a Marxist-feminist theoretical framework to analyse women’s work and mobility and its impact on autonomy of women within the household.

In the following section I will examine the interdisciplinary perspectives on mobility as a concept and how the concept of mobility can be viewed as capability for women engaged in informal work in order to analyse mobility using CA (capability approach) framework.

2.4 Mobility and Work: An Interdisciplinary Perspective

Mobility has been a theme of intellectual discourse of human geographers, sociologists, and demographers who have examined the concept from different theoretical perspectives. The questions pertained to how mobility determined the employment structures, fertility patterns, career opportunities and social mobilities of women depending on their subject disciplines. From the geographer’s perspective the analysis tried to explore linkages between gender and
transport patterns, work-trips, friction of distance, travel-activity patterns, and residential locations (Hanson and Johnston, 1985; Law, 1999). The scholars in mobility research in the discipline of geography has noted the close links between spatial mobility and social mobility in the sense that geographical patterns of movement across countries or places affect the space of options and actions of individuals (Uteng, 2006:436). The inequalities in labour markets examined the social and economic geographies as the media which perpetuated the segregation of women into low paid jobs (Hanson and Pratt, 1995). There were regional studies which focussed on the impact of industrial revolution and capitalism on gender relations and its impact on the patterns of work. As noted by Massey15 (1994:184), ‘space and location matter’ and the present gender division of labour in particular places is the outcome of the combination over time of successive phases of economic and social history of women which result in particular type of work settings and gender relations. Mobility is “positively coded as progress, freedom or modernity itself and it simultaneously brings the issues of restricted movement, vigilance and control” (Uteng and Cresswell, 2008:1).

The sociological studies analysed the social mobility of women, career mobility, inter-generational class mobility and occupational mobility (Abbott & Payne, 1990). The experts examined social mobility of women vis-à-vis men by accounting for the background in terms of class, race, occupational status, educational achievement and other indicators. Some of the earliest studies in social mobility of women used the causal model of socioeconomic success of women and pointed out that the background, educational achievement and occupational factors determined social mobility of women and that separate models are warranted for the study of social mobility of men (Ayella and Williamson, 1976:550). However there has been a lack of inter-disciplinary discourse to analyse the mobility-freedom-opportunity-autonomy-development linkages which can enhance the understanding of the paths to development of women situated at different socio-cultural contexts.

Earlier studies in demographics noted that the status of women which will get reflected in their ability to take decisions inside and outside the household, in turn depends on differential access of men and women over resources which define the many possible male female power differences (Mason, 1986). ‘Men and women are typically unequal in a number of important respects, and the nature or extent of their inequality usually varies across these dimensions

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15 Massey examines how male dominance is reformulated in early 19th century Britain and how capitalism presented patriarchy with different challenges and impacted gender relations and lives of women as waged labour and otherwise.
and according to social setting and life cycle stage. For this reason, attempts to relate "the" status of women to demographic or other social phenomena run the risk of seriously-distorting reality (Mason, 1986:297).

The autonomy or decision making power is closely related to the freedom of movement. The National Family Health Survey II (NFHS II) 1998-99, highlighted the role of cultural and economic factors that influence female autonomy in India. The mobility indicators used in the NFHS 1998-99 and the latest NFHS III are shown in Table 6. It can be seen that though the percentage of women with access to money is above fifty percent, because of the socio-cultural context in India the mobility of women are constrained. More than fifty percent of women require permission to go to market and to visit friends and relatives. Therefore, having access to resources may not entirely reflect the autonomy level of women in a given context. There has not been much change over time since the latest data (NFHS III) shows that only 35% of SC women are allowed to go alone to market, health facility and places outside the village. There have not been studies which attempted to examine the constraints on mobility of women as a separate construct and examine the linkages between mobility and autonomy as capabilities for women which my study intends to examine.

<table>
<thead>
<tr>
<th>Caste/Tribe</th>
<th>Percentage of women who do not need permission to go to market</th>
<th>Percentage of women who do not need permission to visit friends/relatives</th>
<th>Percentage of women with access to money</th>
<th>Percentage of women who are allowed to go alone to market, health facility and places outside village*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scheduled Caste</td>
<td>31.3</td>
<td>23.7</td>
<td>56</td>
<td>34.7</td>
</tr>
<tr>
<td>Scheduled Tribe</td>
<td>30.7</td>
<td>26.2</td>
<td>50.7</td>
<td>30.3</td>
</tr>
<tr>
<td>Other Backward Class</td>
<td>34.7</td>
<td>26.6</td>
<td>62.4</td>
<td>31.5</td>
</tr>
<tr>
<td>Others</td>
<td>29.6</td>
<td>22.7</td>
<td>61.0</td>
<td>35.9</td>
</tr>
</tbody>
</table>

Scholars in multiple disciplines have not examined whether mobility in work as a capability can transform and lead to higher levels of autonomy and the causal mechanisms which lead to better decision making among women in informal work. Writing about gender differences in mobility can advance the dialogue between materialist political economy and critical social theory (Sylvey, 2004). As can be seen the academic discourse on mobility across disciplines dealt with multiple meanings of mobility in terms of social, career and physical mobility.

In this study I argue that mobility can be treated as capability which enhances the freedom and opportunities of individuals by improving autonomy. This is a question which has not been dealt with in any of the vast landscape of the mobility studies. This study aims to fill the gap in knowledge by examining whether mobility as positive freedom will improve autonomy (decision making power) of women within the household if women undertake paid work outside the house. This study proposes to introduce a different domain of mobility namely, transformational mobility (TM ) which, has been defined earlier as the freedom and ability to move outside the household without constraints from anyone else. This can occur mainly due to the wider network of interactions that mobility in work confers on the individuals. On the other hand, I argue that mobility may not be transformational where it does not improve the sense of self-worth, autonomy and women’s agency, even though there is movement in terms of going outside the house for work.

Linking mobility associated with paid work outside the household with autonomy or decision making power of women, will enable analysis of mobility and autonomy as capabilities which will enhance the analysis of these concepts with the help of CA framework.

Not many scholars have analysed mobility associated with work as one of the capabilities towards women’s autonomy. The scholarly work of Amartya Sen (1999) asserted that the movement outside the household improves women’s agency through greater exposure to the outside world. As noted by Sen, the deep injustices suffered by women are related to the notions of legitimacy and correctness of behaviour accepted as ‘natural’ by the societal norms, termed as ‘adaptive preferences’. However, how far paid work enables women to overcome the injustices by improving their autonomy requires a theoretical framework which can incorporate the crucial parameters of gender, social norms and cultural contexts. The next section examines the capability approach which offers a framework which forms the basis to analyse mobility and autonomy of women as capabilities which enhances real freedoms of
women workers in this study and examines the suitability of the CA of Sen to analyse mobility autonomy linkages in the context of informal work.

2.5 **Mobility and Autonomy: A Capability Approach (CA) Framework**

It is the inadequacy of resource based and utilitarian approaches in measuring welfare and economic development that led to the emergence of alternative measures like basic needs and capability approaches. The Capability Approach emerged as an alternative approach to analyse human development and wellbeing. The Capability Approach (CA) focuses on the evaluation of ‘functionings’ or valuable doings and beings’ and the ‘capabilities’ to analyse well-being. ‘Equality of resources falls short because it fails to take into account the fact that individuals need differing levels of resources if they are to come up to the same level of capability to function. They also have differing abilities to convert resources into actual functioning’ (Nussbaum, 2003:35).

Capabilities refer to the set of alternative beings and doings that a person can achieve with his or her economic, social and personal characteristics (Dreze and Sen, 1989). It refers to the ability of individuals to realise their potential as human beings. The capability approach recognises the importance of gender as a crucial parameter in social and economic analysis, it is complementary to, rather than competitive with, the variables of class, ownership, occupations, incomes and family status (Sen, 1990:123). Capability Approach is a normative framework for evaluation of individual wellbeing; a tool for social cost benefit analysis; to design and evaluate development policies in affluent and developing economies (Robeyns, 2003:5). A person’s functionings and capabilities are closely related.

“**Functionings represent parts of the state of a person- in particular the various things that he or she manages to do or be in leading a life. The capability of a person reflects the alternative combinations of functionings the person can achieve and from which he or she can choose one collection. The approach is based on a view of living as a combination of various ‘doings and beings’, with quality of life to be assessed in terms of the capability to achieve valuable functionings.”**(Sen, 1993:31).

The capability approach thus finely establishes the link between the resources that can lead to better outcomes in terms of wellbeing for individuals. The resources can be as varied as having health, education, mobility as illustrated in Table 7. Functionings, capability and agency are the core concepts of Sen’s capability approach and in this study the focus is on functioning and capability by examining transformational mobility associated with informal
work which is autonomy in mobility of women as capabilities which can enhance real freedoms and opportunities of women workers.

**Table 7: Mobility as Functioning- A Capability Approach**

<table>
<thead>
<tr>
<th>Resource</th>
<th>Functioning</th>
<th>Capability</th>
<th>Utility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicycle*</td>
<td>Mobility</td>
<td>To cycle</td>
<td>Happiness derived by visiting friends</td>
</tr>
<tr>
<td>Informal Work #</td>
<td>Mobility (movement outside</td>
<td>To be mobile anywhere without constraints</td>
<td>Self-esteem and enhanced freedoms; Well-being</td>
</tr>
<tr>
<td>(in this study)</td>
<td>the household for work)</td>
<td>i.e. Transformational mobility</td>
<td>freedom leads to autonomy in other dimensions</td>
</tr>
</tbody>
</table>

Source: *Example given in Alkire (2005) and # author’s interpretation of mobility using capability approach.

“Capabilities, in contrast, to functionings, are notions of freedom, in the positive sense: what real opportunities you have regarding the life you may lead” (Sen 1987: 36). Mobility associated with work for women can be viewed as functioning while transformational mobility is capability which will open up various opportunities which can improve their agency as women and workers which in turn improves the wellbeing. “Mobility16 defined as ‘the ability and freedom to move’ is a necessary aspect of human life. The constraints on movement by individuals, society or the State curb the ‘positive freedoms’17. The instrumental freedoms improve the capabilities of persons and enable them to live more freely. These freedoms are in turn the function of the social arrangements.

Sen opines that the ability to move outside the house for paid work improves women’s agency and thereby wellbeing (Sen, 1999). It is a positive freedom in the sense of exposure to outside world, which improves the agency of women. ‘Capability is thus a kind of freedom: the substantive freedom to achieve alternative functioning combinations. They are not just abilities residing inside the person but also the freedoms or opportunities created by a combination of personal abilities and the political, social and economic environment’(Nussbaum, 2011:20). The ‘mobility aspect’ which is implicit in this proposition has not been researched upon in development and feminist studies. The intra-household gender relations are to a great extent mirrored in the patriarchal production and social relations. These unequal relations get reflected in differential mobilities for women at

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16 Mobility as a positive freedom in the sense of available and worthwhile options.
17 Sen’s five instrumental freedoms improve the capabilities and enable a person to live more freely. Hence they become a function of the social arrangements as well. So if freedoms are curtailed it would affect the well-being.
multiple dimensions at the household level, work and society, especially in the cultural context of the Third world.

The preference to work outside the house may not reflect the realities and it may be due to the necessity of supplementing the income of the household that women go out to work. Consideration of the realities of the vulnerable in the Third World destroys the plausibility of thinking that the preferences provide a guide to each individual’s subjective perception of good, but one that can be often deeply misleading and Sen’s approach of taking capabilities rather than preference satisfaction and in the process eliminating vulnerabilities leads to a view in which both empowerment and liberty can be given due importance (O’Neill, 1992).

The mobility aspect is closely linked to the sense of freedom, freedom from constraints and conflicts within the household and elsewhere. Where the patriarchal norms define ‘lakshman rekhas’ (imaginary boundaries)\(^{18}\) for women, and the capitalist relations of production exploit the subordination of women by providing low paid jobs, the wellbeing freedom and agency of women remain unachievable in the current scenario.

As Sen noted, development analysis cannot really be divorced from gender categories and sex-specific observations (Sen, 1990:124). Gender\(^ {19} \) is a fundamental tool with which to analyse the impact of ideologies in the structuring of the social and intellectual world, far beyond the events and bodies of women and men and is a central constituting element of the self, of a person’s sense of being, as well as a classificatory principle for ordering the universe (Sardenberg, 2007:52). Sardenberg (2007) further notes that a gender perspective makes it possible to reconcile singularity and commonality; gender makes sense of the substantiality of women and men cross-culturally and throughout the history.

The capability approach framework helps in analysing mobility as capability and instrumental freedom which can enhance the decision making power or autonomy of women which itself is a capability. Hence this study will adopt the capability approach of Sen to analyse the mobility and pathways to autonomy of women informal workers. Sen has also analysed the significance of paid work in improving the agency of women. However, not all

\(^{18}\) Lakshmanrekha in India denotes ‘imaginary boundary line for women; ascribed to the line drawn by Lakshman (Ram’s brother in the epic Ramayana) around the hut in which Sita was staying, to protect her from outsiders in the forest.

\(^{19}\) Sex refers to the biological characteristics that categorise someone as either female or male; whereas gender refers to the socially determined ideas and practices of what it is to be female or male (Reeves and Baden, 2000).
movement outside the household can improve the agency and this requires further in-depth analysis which is beyond the scope of this study.

The autonomy aspect is closely related to agency20. Agency is defined as a person’s ability to pursue and realize goals he/she has reasons to value and it is one of the central concepts of capability approach of Sen (Alkire and Deneulin, 2009). An agent is ‘someone who acts and brings about change’ (Sen, 1999:19). Sen defines agency in terms of ‘agency achievement’ and human agency is critical in promoting human development and well-being. Agency is a multidimensional concept and its conception goes beyond individual agency to collective agency as members of organisations, groups and collectivities. To expand the capabilities set and to enhance the opportunities in a given setting, human agency has a critical role. Human agency can expand the well-being freedoms and can bring about changes that one has reasons to value. Moreover, human agency and freedoms are important ingredients for meaningful work21. The lack of institutional support from the part of the State and worker’s unions makes it all the more difficult for women informal workers to voice their issues.

As work is an integral means for human flourishing, it is important to examine mobility, work and autonomy interrelations in the context of informal work and women. CA can enable an assessment of the impact of the nature of informal work and the mobility associated with work on the sense of self-worth and decision making power of women. ‘The capability approach is concerned with showing the cogency of a particular space for the evaluation of individual opportunities and successes. In any social calculus in which individual advantages are constitutively important that space is of potential significance.’(Sen, 1993:50). Table 8 highlights the salient features of various approaches that differ from the Capability Approach in evaluating wellbeing and agency.

Freedom has intrinsic importance for the person’s well-being achievement (Sen, 1993:39). ‘Wellbeing freedom of a person will represent the freedom to enjoy the various possible well-beings associated with the different functioning n-tuples in the capability set. Acting freely

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20 Agency is defined in multiple ways by scholars. Doyal and Gough (1991) defines autonomy of agency as “the capacity to initiate an action through the formulation of aims and beliefs” and requires “mental health, cognitive skills and opportunities to engage in social participation.” Agency has a broader connotation than well-being. As noted by Sen (1999:190), understanding the agency role is central since it recognises people as responsible persons not only in the realm of wellness or illness but it is also about how people act or refuse to act and can choose to act one way rather than another. In this context mobility can reflect the agency of women.

21 The literature on meaningful work, from the Rawlsian concept of opportunity for meaningful work focus on the eudemonistic dimension of work as work improves well-being and human flourishing. I use meaningful work in terms of its eudemonistic value of enhancing opportunities and capabilities.
and being able to choose may be directly conducive to wellbeing, not just because more freedom may make better alternatives available but because of the intrinsic value of freedom.

The capability approach of Sen differ from that of Nussbaum’s capability approach in that it does not limit the number of capabilities relevant for assessment of human life. It is open ended for each one to decide which capability is relevant in the given context and that is the greatest advantage of using the capability approach to analyse transformational mobility as capability. A focus on ‘people’s capabilities in the choice of development policies makes a profound theoretical difference, and leads to quite different policies compared to neoliberalism and utilitarian policy prescriptions’ (Robeyns, 2003:5).

<table>
<thead>
<tr>
<th>Approaches/framework</th>
<th>Salient features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Utility Based Approaches</td>
<td>Utilitarian- Maximisation of utils-happiness in highest number</td>
</tr>
<tr>
<td>Nussbaum’s Capability framework</td>
<td>Partial Theory of Justice; 10 central human capabilities listed; --Life – Bodily health – Bodily integrity – Senses, thought imagination, – Emotions – Practical reason – Affiliation – Other species – Play – Control over one’s environment</td>
</tr>
<tr>
<td>Basic Needs framework</td>
<td>Specifies the basic needs; robust in ranking alternative</td>
</tr>
<tr>
<td>Livelihoods framework</td>
<td>Resources- natural, physical, social, human and financial capital-institutions-processes-influence-vulnerability-shocks- livelihood outcomes</td>
</tr>
</tbody>
</table>

The capability approach does take into account the societal, institutional and environmental factors that enable or prevent individuals from achieving the functionings which will enhance their capabilities and improve their wellbeing. As noted by Robeyns (2005), on the theoretical level, the capability approach does account for social relations and the constraints and opportunities of societal structures and institutions on individuals and for Sen, a list of capabilities must be context dependent, where the context is both the geographical area to which it applies, as well as the sort of evaluation that is done. Therefore, the capability approach enables analysis which can be context specific (see Table 9) and encourages diverse possibilities in the selection of capabilities which are relevant to the individuals.
Table 9: Advantages of Capability Approach to Analyse Mobility

<table>
<thead>
<tr>
<th>Capability Approach</th>
<th>Dimensions</th>
<th>Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sen’s Instrumental Freedoms: No specified lists of capabilities</td>
<td>Political freedom Economic facilities Social opportunities Transparency guarantees Protective security</td>
<td>-Individual level -Within household -Wellbeing - opportunities</td>
</tr>
<tr>
<td>This study: ‘Transformational Mobility as Capability’</td>
<td>New dimension to be added in the study – Mobility and Autonomy</td>
<td>-Evaluate the impact of mobility -Context specific- Informal work -Individual level -Within household</td>
</tr>
</tbody>
</table>

Source: Author’s own compilation based on literature.

For Nussbaum (2000), capability approach is a theory of justice and she argues that the ten central human capabilities are the core principles which need to be constitutionally guaranteed to the citizens for a just society. The 10 central human-functioning capabilities are (a) life (to live life without dying prematurely); (b) bodily health (to have good health, nutrition, and shelter); (c) bodily integrity (to have freedom of movement and freedom from assault, including sexual assault, childhood sexual abuse, and domestic violence); (d) senses, imagination, and thought (to have adequate education and the ability to express one’s imagination, to have the ability to search for the ultimate meaning of life in one’s own way, and to have pleasurable experiences and to avoid unnecessary pain); (e) emotions (to experience a full range of human emotions and to avoid one’s emotional development from being thwarted by fear and anxiety owing to abuse or trauma); (f) practical reason (to engage in critical reflection of one’s life and to be able to plan for a life that is based on meaningful choices); (g) affiliation (to engage in various forms of social interaction, including having relationships with other workers, and to be free from discrimination and humiliation); (h) other species (to live in relationship to the world of nature); (i) play (to play and enjoy recreation); and (j) control over one’s environment (to participate in political choices and have political rights, to have property rights, and to have the right to seek employment on an equal basis with others). If a person falls below a threshold or a minimal level of capability in any of these core areas, then, according to Nussbaum (2000:74), society, ‘‘has not enabled [that person] to live in a truly human way.’’

Nussbaum (2000) distinguishes between internal capabilities and combined capabilities. The internal capabilities are characteristics of persons like personality traits, intellectual and
emotional capacities while combined capabilities are those developed through interaction with the social, economic and political environment. Nussbaum essentially makes the distinction by contending that a society which aims to be a just one has to focus on facilitating the development of both the internal and combined capabilities. Nussbaum argues that a society that does not provide the ten central human capabilities at a threshold level falls short of being just in terms of providing a life of human dignity to its citizens. However it is difficult to have a universal list which can be applicable in a similar way for all societies to be guaranteed constitutionally, it will be beneficial to keep the list of capabilities open ended to suit different socio-cultural contexts. Thus the flexibility of Sen’s capability approach is dynamic and more suitable to this study. There is no rigid compartmentalisation of capabilities in a specified list in Sen’s CA. This enables the inclusion of capabilities which are relevant and suitable in a given socio-cultural context. According to Sen (1999), democratic deliberation and agency of the community are significant to decide on which capabilities are valuable and how much weight specific capabilities should have in a given cultural context.

The capability approach as advocated by Sen places emphasis on the need to recognise the capabilities which can widen the opportunities or freedoms to pursue what people have reasons to value. In Sen’s capability approach, the “expansion of freedom is viewed as both the primary end and the principal means of development” (Crocker, 2008:92).

Sen argues that it is essential to reduce gender inequalities in capabilities by addressing the underlying prejudices. But he has not cited any specific list of capabilities to analyse gender inequality since he is open to democratic deliberation to make the choice of capabilities. In countries like India, with great diversity in population in terms of class, caste and socio-religious denominations, democratic deliberation is essential to voice the concerns of gender and to reduce gender specific inequalities in capabilities. In the case of societies with severe gender based ‘corrosive disadvantage’ Nussbaum’s approach to have a list seems appropriate.

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22 Sugden (2006) has critiqued Sen’s capability approach by arguing that the lack of a specific list of capabilities and the need for democratic deliberation for social policy interventions make the approach difficult to operationalise and hence incomplete.
23 According to Nussbaum (2011), corrosive disadvantage is the opposite of fertile capability and it is a deprivation which has particularly large effects in other areas of life. For example, subjection to domestic violence which jeopardize health, emotional well-being, affiliations, practical reasoning and other capabilities. It is helpful to locate fertile capabilities and corrosive disadvantages to identify the best intervention points for public policy.
I argue that while the list of capabilities can be open to democratic deliberation, where the underlying injustices like caste, gender and race curb the realization of capabilities, state intervention is necessary in terms of social policy to enhance capabilities and remove corrosive disadvantages. However as Nussbaum has suggested this does not mean the societies need to have constitutional guarantees. But it is Sen’s approach of democratic deliberation and participatory approach to recognising and evolving the list of capabilities which makes the approach flexible and operational in socio-cultural terrains which are complex.

The socio-cultural barriers are too complex to be left solely to individuals to overcome and realize their potential on their own. In assessing human advantage, Sen notes four different concepts of advantage related to a person namely, well-being achievement, agency achievement, well-being freedom, and agency freedom. While assessment of well-being achievement is confined to the ‘wellness’ of the person’s being, agency achievement moves beyond the person’s own state of being to include goals beyond one’s personal sphere. The assessment of agency success is a broader exercise than the evaluation of well-being (Sen & Nussbaum, 1993:37). Understanding “the agency role is thus central to recognizing people as responsible persons not only are we well or ill, but also we act or refuse to act and can choose to act one way rather than another” (Sen. 1999:190).

In this study I will explore mobility as capability which would enable women workers to improve their autonomy or decision making for themselves and within the household. I argue that mobility associated with paid work is ‘bounded mobility’ for women in informal work and who in the real sense have freedom limited to attending to work and work related activities. For all the other movements outside the household for personal or social needs, women do not enjoy freedoms. Transformational mobility is a capability and not ‘bounded mobility’ which will reflect the real freedoms that women enjoy with regards to mobility which ultimately reflect an improvement of autonomy within the household and agency of women workers.

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24 The definitions of the terms are: Well-being achievement is the achievement of those things that are constitutive of one’s well-being; well-being freedom is one’s freedom to achieve those things that are constitutive of one’s well being; agency achievement refers to the person’s success in the pursuit of the totality of her considered goals and objectives and agency freedom is one’s freedom to bring about the achievements one values and which one attempts to produce.

25 ‘Bounded mobility’ as the one in which the freedom and ability to move is constrained by others in the household or the society. In contrast to bounded mobility is transformational mobility which improves the overall mobility and improves the decision making power of women workers, which vest in the hands of women themselves.
The literatures in sociology, economics and development studies have lauded the importance of paid work for women as a source of income for survival and also a means to improve autonomy of women. Mere paid employment outside the household will not result in improvement of autonomy. Paid work may just be a survival strategy for women to supplement household income. The mobility that is associated with work whether it is unit based or self-employment can improve the self-esteem and autonomy of women only if it is transformational. However, a higher rate of women’s work participation in informal work by itself is not a reflection of greater autonomy and agency for women in the developing economies. It is imperative to analyse transformational mobility of women to understand the improvement in household autonomy facilitated through paid work.

Many attempts have been made by scholars from various disciplines to measure mobility as an indicator of autonomy, empowerment and agency (Schuler and Hashemi, 1993; Kabeer, 1999; Jejeebuoy, 2000). As one of the indicators of autonomy, the measure of mobility has been one of the scores which formed as a base for the construction of the composite index of autonomy. The underlying conceptual entity measured by various indices of mobility differ significantly by ‘measuring fundamentally different concepts namely positional movement, income flux, directional income movement, movement of income shares etc.’ (Fields, 2004:9). Mobility as a construct itself can have significant impact on the level of autonomy that women can achieve through wider interactions with the outside world. The linkages between mobility and autonomy have not been researched upon in the development studies discipline. This knowledge gap in the study of mobility will be the focus of this study. The study will examine the differences in mobility of women workers in informal work and its linkages to household autonomy of women.

The next section will give an overview of how the informal sector has evolved over the years in the developing countries and the significance of women workers in informal sector.

2.6 **Significance of Women workers in Informal Sector**

The informal workers are a highly heterogeneous group, pursuing survival activities by engaging in a range of insecure and oppressive wage and self-employment. The informal sector has evolved over time since its conception by Keith Hart in the 1970s, both as a

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26 Hart (1973) notes ‘the distinction between formal and informal income opportunities is based essentially on that between wage–earning and self-employment. The key variable is the degree of rationalization of work—that is to say, whether or not labour is recruited on a permanent and regular basis for fixed rewards.’
concept and in its definitions. The earliest studies were of the view that informal employment arose as periphery activities and once its role to feed into the capitalist development is accomplished, it will disappear. Others viewed informal employment as productive employment opportunities which could help poorer sections to meet their livelihoods and had a role to play in developing countries with surplus labour. As pointed out in Lewis’ unlimited supplies of labour model\textsuperscript{27}, when the ‘Lewis turning point’ did not occur due to lack of technological capabilities, there was growth in employment in informal sector activities. In the post globalisation and liberalisation era, there has been increased attention to informal employment since there has been tremendous informalisation of production across developed and developing countries\textsuperscript{28}. The report ‘Dilemma of the informal sector’ (ILO, 1991) stated clearly after more than 2 decades of inconclusiveness on the status of informal sector that ‘contrary to earlier beliefs, the informal sector is not going to disappear spontaneously with economic growth’. Table 10 highlights and contrasts the old and the new views on the significance and role of informal sector in the global context.

There are four dominant schools of thought which have emerged based on the views held on the nature and composition of informal sector, namely the dualist, the structuralist, the legalist and the voluntarist schools (WIEGO, 2012). While the dualists’ treat informal sector distinctly different from the formal sector and as one which serves as the last resort for the poor at times of crisis and are excluded from modern sector; the structuralist school considers the informal subordinated micro-enterprises and workers as one that serve to reduce input and labour costs and, thereby, increase the competitiveness of large capitalist firms; the legalist school considers informal sector as one which avoids the unnecessary and burdensome costs, time and effort of formal registration and who need legal rights to convert their assets into formal property and the voluntarist school views the informal sector as comprised of micro-entrepreneurs who choose to operate informally in order to avoid taxation, commercial regulations, electricity and rental fees, and other costs of operating formally (WIEGO, 2012).

\textsuperscript{27} The main sources from which workers come as economic development proceeds are subsistence agriculture, casual labour, petty trade, domestic service, wives and daughters in the household, and the increase of population. In most but not all of these sectors, if the country is overpopulated relatively to its natural resources, the marginal productivity of labour is negligible, zero, or even negative. (Lewis,1954).

\textsuperscript{28} Guy Standing (2011) uses the term ‘precariat’ to denote multitude of insecure people, living bits-and-pieces lives, in and out of short-term jobs, without a narrative of occupational development in the post globalisation era. The precariat’s relations of production are defined by partial involvement in labour combined with extensive ‘work-for-labour’, a growing array of unremunerated activities that are essential if they are to retain access to jobs and to decent earnings.
The old and new views on informal sector are given in table 10 adopted from Chen et al. (2004).

Although interest in the informal economy has waxed and waned since the early 1970s, the concept has continued to prove useful to many policymakers, activists and researchers. This is because of the significance of the reality that it seeks to capture: the large share of the global workforce that contributes significantly to the global economy, while remaining outside the protection and regulation of the state (Chen et al., 2012).

Table 10: The Informal Sector - the Old and the New Views

<table>
<thead>
<tr>
<th>The Old View</th>
<th>The New View</th>
</tr>
</thead>
<tbody>
<tr>
<td>The informal sector is the traditional economy that will wither away and die with modern, industrial growth.</td>
<td>The informal economy is ‘here to stay’ and expanding with modern, industrial growth.</td>
</tr>
<tr>
<td>It is only marginally productive.</td>
<td>It is a major provider of employment, goods and services for lower-income groups. It contributes a significant share of GDP.</td>
</tr>
<tr>
<td>It exists separately from the formal economy.</td>
<td>It is linked to the formal economy – it produces for, trades with, distributes for and provides services to the formal economy.</td>
</tr>
<tr>
<td>It represents a reserve pool of surplus labour.</td>
<td>Much of the recent rise in informal employment is due to the decline in formal employment or to the informalization of previously formal employment relationships.</td>
</tr>
<tr>
<td>It is comprised mostly of street traders and very small-scale producers.</td>
<td>It is made up of a wide range of informal occupations – both ‘resilient old forms’ such as casual day labour in construction and agriculture as well as ‘emerging new ones’ such as temporary and part-time jobs plus homework for high tech industries.</td>
</tr>
<tr>
<td>Most of those in the sector are entrepreneurs who run illegal and unregistered enterprises in order to avoid regulation and taxation.</td>
<td>It is made up of non-standard wage workers as well as entrepreneurs and self-employed persons producing legal goods and services, albeit through irregular or unregulated means. Most entrepreneurs and the self-employed are amenable to, and would welcome, efforts to reduce barriers to registration and related transaction costs and to increase benefits from regulation; and most non-standard wage workers would welcome more stable jobs and workers’ rights.</td>
</tr>
<tr>
<td>Work in the informal economy is comprised mostly of survival activities and thus is not a subject for economic policy.</td>
<td>Informal enterprises include not only survival activities but also stable enterprises and dynamic growing businesses, and informal employment includes not only self-employment but also wage employment. All forms of informal employment are affected by most (if not all) economic policies.</td>
</tr>
</tbody>
</table>

Source: Adapted from Chen, Vanek, and Carr (2004).

Exit from, exclusion from, and entry barriers to formal regulations as well as subordination to or exploitation by formal firms are stated as the four dominant causal explanations of informality, which are not a sufficient set of causal explanations. There are wider structural forces and informal regulations which drive informality and which vary from one country to another (Chen, 2012:11). Whatever be the causal explanation for the emergence and the existence of the informal sector and informal employment, there are certain core underlying
issues which the workers and the sector face owing to its structure and composition. These are of specific interests since they are not within the ambit of state regulation.

Globalisation of the economy during the 1990s has contributed to the informalisation of the workforce in many industries and countries (Standing, 1999). The growth of the informal economy has given rise to what has been called a widening ‘representation gap’ in the world of work (ILO, 2000). Currently, ‘informal employment is more than half of non-agricultural employment in most developed regions and as high as 82 per cent of non-agricultural employment in South Asia’ (Vanek et al., 2012). Women form ‘the majority of workers in sub-contracted, temporary or casual work, part-time work and informal occupations’ and hence ‘more women than men are in unorganized and unprotected jobs that lack security of tenure’ (ILO, 2000: 11). The informal economy is not the exception in most developing countries, it is the norm and by all statistical accounts it is growing both because the formal sector is becoming informalised and because the range of market-oriented informal economic activities is expanding to meet the requirements of poor households for cash (Pearson, 2007:210).

Within an orthodox neoclassical model, low earnings and precarious working conditions associated with informality represent a labour market “equilibrium” that can only change to the extent that these explanatory factors can. The shortcomings of this approach become evident when “market equilibrium generates below subsistence incomes and working conditions that undermine human capabilities. This is in fact the grim situation for a large proportion of the population in developing countries today” (Beneria, and Floro, 2005:12). Throughout the developing world, informal employment is generally a larger source of employment for women than formal employment and generally a larger source of employment for women than for men. Women’s participation in the labour force increased particularly in the 1980s and 1990s—the era of globalization’ (Shahra, 2003). In India, for example, during the decade of the economic reforms (i.e. the 1990s) it is the informal economy that has grown fastest and absorbed most labour in agriculture, manufacturing, construction, petty trade and services (Harriss-White, 2000).

29 The increasing informalisation of the labour market is creating a gap between trade unions and a growing number of workers who have no forms of collective representation at their work place. It is important to close this gap as it renders workers without rights and easy victims of oppression and exploitation of global capitalism.
The growth in informal sector and informal employment made the Government of India set up the National Commission for Enterprises in the Unorganised Sector (NCEUS) in 2004 to examine the problems faced by the enterprises in the unorganised informal sector. However the issues of women workers have not received the necessary attention in the reports of the Commission, although majority of women workers in India are employed in the informal sector which comprise of home based, unorganized unit based and other myriad self-employed activities which lack stability or security in terms of earnings or employment. Nine out of every ten women employed outside agriculture are in the unorganized sector and they are concentrated in the lowest paying and most insecure jobs (UN, 2000).

The benefits of informal employment are often not sufficient and the costs are often too high for those who work informally to achieve an adequate standard of living to rise above the poverty threshold (Chen, Vanek, and Heintz, 2006). The piece rate wages of informal workers, especially women are abysmally low globally and the working conditions are dismal by any national or international labour standards. Hence the women’s agency becomes ineffective in empowering the workers to bargain for better pay and working conditions within the informal systems. “There is evidence that new forms of work under India’s neoliberal regulatory regime from 1991 to the present have been harmful. For instance, Oxfam's considered view is that India's growing export trade is increasing the rate of exploitation of India’s workers. 'Companies' demands for ... cheaper production in their supply chains are undermining the very labour standards that they claim to be promoting.” (Oxfam, 2004, cited in Olsen and Mehta, 2006).

In this context, scholars have argued for a rights based approach to focus attention on the claims of women informal workers who are generally excluded groups in the macro-economic and social policies and a matrix of rights consisting of the right to work, broadly defined, safe work, minimum income and social security are identified as core issues for informal workers (Unni, 2004:335).

‘Gender becomes a major axis of differentiation around these processes of labor flexibilization. Female workers tend to earn lower wages than their male counter parts, are more likely to be in low- end jobs, and hired as casual, subcontracted, or part-time. This pattern results from discrimination and gender norms that permeate in economic and social institution’ (Beneria. and Floro, 2005:16).
The informal workers are excluded groups who are employed on exploitative terms and conditions and being women informal workers will further aggravate the conditions of work and pay for capitalist production. Therefore, whereas the participation of women in economic activity is seen on the one hand as an indicator of progress for women, the increasing employment of women in low paid informal work may not necessarily reflect improvement in the lives and well-being of poor women. The gender relations together with the production systems which take advantage of the lower status of women trap the women workers in a low level ‘capability traps’. The informal work setting of women workers chosen for my study is a reflection of the growing export oriented work in developing countries, which form the ideal locations where the triangular interactions of ‘market, patriarchy and capitalist production’ reinforce each other and which perpetuates exploitative wages and working conditions.

The next section gives an overview of the gender relations in India and Kerala which is essential to understand women’s informal work in the given socio-cultural context.

2.7 Gender Relations in India and Kerala: An Overview

“Gender asymmetries in employment can be seen as manifestations of deeper asymmetries within society rather than in terms of simple causation” (Kabeer, 1998: 103). In patriarchal societies where gender relations are defined by the traditional norms and attitudes, the intra-household differences are evident in access to education, health and employment. In addition, in countries like India, the invisibility of women’s work is a critical issue and the low labour participation by women can be attributed to socio-cultural variables like caste status, landholding status and level of literacy (Kalpagam, 1986).

In the Indian context Kalpagam (1986) notes, that the tendency of women to withdraw as economic position improves confirms the fact that most women work not out of choice but because it is dictated by survival considerations. Family and kinship relations, property structure and women’s work participation are closely related and hence gender as an analytic category of social relations is essential to understand the women’s work in a given cultural context (Kalpagam, 1986). In India, the ownership of land or access to property rights was cited as one of the significant factors that determined women’s empowerment and sense of self-esteem (Agarwal, 1994). In a study on the impact of rural women’s property ownership on mobility and decision making outcomes, it was found that women’s property ownership had a significant impact on their freedom to move outside the household and decisions which
had an impact on their lives (Swaminathan et al., 2012:17). Another study by Garikipati (2009) in rural Andhra Pradesh cited that despite increased labour market participation, women’s household status, wages and working conditions remain acutely depressed and it was only access to productive assets that effectively improved their agency both within the household and the labour market. However land ownership alone cannot reduce the triple burdens of women where the patriarchal norms decide the choice of work available to women both within and outside the household.

In the post globalisation scenario, with liberalization and growth of export oriented global production chains in India, as in other developing countries, informalisation and feminisation have resulted in women being categorised as a source of cheap labour. The work is ‘stereotyped’ as ‘women’s work’ and that is how women have come to be accepted in the neo-liberal regime and are being increasingly exploited as unskilled workers’ for the benefit of capitalist production’ (Elson and Pearson, 1981: 88). The paid work has invariably resulted in increased mobility for women, in terms of movement outside the household for paid work. Whether the mobility associated with work has improved women’s ability to meet the practical and strategic gender needs is a key issue in specific cultural contexts. Although the competing theories (see section 2.3 of this chapter) examined some of the visible factors which influence the ability of women to attain their strategic goals and to meet their practical needs, there is lack of discourse on the underlying invisible effects that mobility associated with work may entail for women. In such a scenario, whether paid employment necessarily improves the wellbeing of women is a critical question to be addressed in the feminist analysis of women’s labour market outcomes.

Some of the Kerala specific studies have examined the distinctive gender relations in Kerala on the female employment in the State, on the declining female work participation rates of women in Kerala and on women workers in general. A few selected studies on women workers pertaining to Kerala’s informal sector in general and fisheries sector in particular have been examined here.

In a study of women in informal sector in Kerala, Eapen (2001) has pointed out that though women’s earnings contribute substantially to the household, this is more often than not denigrated. Women, especially in the lower classes and the lower castes not only have to cope with the physical hardships that impact their health, they continue to be paid much lower wages than men in the same category. The study reflects on the lack of discourse on the
extremely strenuous work and physical hardships involved in some of the activities in the informal sector (Eapen, 2001).

Various studies have analysed the factors which determine women’s employment in Kerala. The interplay of economic factors in terms of household needs and aspirations and cultural factors in terms of women’s position in the family are major determinants of women’s employment both on the supply side of the labour market and women’s ability to obtain employment in an imperfect and almost saturated labour market in the context of Kerala (Panda, 1999). On the question of women worker’s participation in trade unions in Kerala, it is largely restricted to participation in times of mobilization to fighting for specific demands. As noted by Kannan (1998), while women workers would be lined up in the front row for protest marches, the position of office bearers were largely filled up by men, even in Unions representing industries dominated by women workers. Though Kerala has a history of active unionisation and has impressive social development indicators, the achievements of the Kerala model in reducing the influence of patriarchal norms on women in Kerala and in improving the participation of women in democratic institutions are still being debated in contemporary discourse on Kerala’s development model.

2.7.1 Critiquing the Kerala Model of social development

The Kerala model of development has been given an exalted position as a model for improving status of women. As mentioned earlier, the social and development indicators specific to women reflect higher levels of education, better health status and access to property in comparison to their counterparts in other states of India. However, within the State, various scholars have noted limited mobility in public spaces, growing violence and crimes against women and in many instances, the position and place of women in the societal hierarchy is not at par with men, especially in the case of inclusiveness in trade unions and political institutions. Devika and Thampi (2011) reflecting on the limits of gender inclusiveness of Kerala model note that the mobility of women in Kerala into spaces of paid work and local governance has remained limited and political spaces are still considered ‘unfeminine spaces’. Despite the claims made by the Kerala model vis-à-vis status of women, empirical studies have shown that women tend to conform to gender norms in Kerala.

“Modernization”, intensified capitalism, and various ideologies and discourses—whether emanating from the West or constructed locally—have increased the gap between masculinity and femininity” (Lindberg, 2001:2).
This has severely affected policy formulation that concerns women workers and gender disparity in wages and working conditions in Kerala. ‘Women's organizations in Kerala have far greater male leadership than would be considered acceptable by Western feminists and men are frequently the main speakers at women's organization events’ (Franke and Chasin, 1994). The ‘representation gap’ is much wider for informal women workers who are completely excluded as they do not have any form of collective organisations at enterprise levels.

The intersectionality of gender and caste is also evident in several studies in the context of Kerala which impacts the social mobility and inter-generational mobility within the households. Based on her study of female cashew workers of Kerala, Lindberg (2001) notes that the low-caste women have gone through a process of ‘effeminization’ which denotes a qualitative, ideological and discursive process that influences the productive and reproductive spheres of women and reflects in the way a woman behaves in different spaces like factory, and household, within the society. The embeddedness of social stratification by caste interacts with modernity and globalisation in such a way that the earlier stigmatised groups remain trapped by the stereotypes, poverty and social exclusion in new forms (Osella and Osella, 2000).

Critiquing the Kerala model, Mukhopadhyay (2007) cites that the evidence of extensive violence against women in Kerala society puts into question the high status of women claimed by the development model. Further she notes that a society that tolerates violence against women both within and outside the household reflects internalisation of patriarchal order and woman’s acceptance of male authority which perpetuates such domination through violence. All these factors point to a situation where the Kerala model of social development has become suspect in terms of improving status of women within the social hierarchy.

### 2.7.2 Studies on women in fisheries in Kerala

In the case of fisheries in Kerala, which is the context of this study, the supply of labour by women workers cannot be analysed in the neoclassical framework of demand and supply and as a choice between work and leisure. There are strong traditional gender norms which are prevalent among the fisher folk which determine the choice of occupation of women in fisheries. Within the fisheries, there is almost complete segregation of work between males
and females which cannot be explained on the basis of the human capital theory explained earlier.

The occupational segregation in fisheries in Kerala is mainly owing to social and cultural norms and this prevent women to have ownership of boats, processing units or any other technology based work and to be mostly engaged in peeling (pre-processing work) and marketing (vending) jobs as can be seen in Table 11. The advantages of new technology in the fisheries have mostly favoured men in terms of advanced mechanised boats, freezing and storing technologies. The particular livelihood strategies women adopt both reflect and further generate experiences of economic processes that differ from men’s and the increased commercialisation in the fisheries sector have ‘rewarded the masculine norms of work and economy in Kerala fisheries’ (Hapke and Ayyankeril, 2004). The infusion of technology in fisheries in the early 70s (Norwegian project) completely marginalised women and women became increasingly involved in pre-processing work which involves manual labour in unhygienic conditions. A study on shrimp pre-processing units in Alappuzha district of Kerala has noted the lack of development of infrastructure and basic facilities resulting in unhealthy conditions of work, for majority of women workers (Sathyan et al., 2014). This type of work is considered demeaning and women from fishing community participate in pre-processing to supplement household incomes since they belong to poor deprived sections.

The caste orientation of fish vending work and the traditional nature of the occupation which is followed by generations have been noted in one of the earliest studies on fish vendors (Gulati, 1984). The participation in the informal work is mainly influenced by the gender norms, the stability of incomes of the household, the ability of women to balance her productive and reproductive roles and other socio-cultural factors which warrant in-depth analysis. Samuel (2007) notes that the divisions based on caste, the emulation of upper caste behaviour, the continued practice of dowry and the traditional perceptions of women’s responsibilities within the family continue to keep women in a secondary and subservient position relative to men.
Table 11: Gender-wise Participation of Fisherfolk in Marine Fisheries, Kerala (2005)

<table>
<thead>
<tr>
<th>Type of Activity in fisheries</th>
<th>Male</th>
<th>Female</th>
<th>Male-Female Participation Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing/Vending</td>
<td>26.36</td>
<td>73.64</td>
<td>2.8</td>
</tr>
<tr>
<td>Making/repairing of net</td>
<td>79.92</td>
<td>20.08</td>
<td>0.3</td>
</tr>
<tr>
<td>Curing/processing</td>
<td>24.34</td>
<td>75.66</td>
<td>3.1</td>
</tr>
<tr>
<td>Peeling</td>
<td>22.69</td>
<td>77.31</td>
<td>3.4</td>
</tr>
<tr>
<td>Labourer</td>
<td>69.53</td>
<td>30.47</td>
<td>0.4</td>
</tr>
<tr>
<td>Others</td>
<td>57.05</td>
<td>42.95</td>
<td>0.8</td>
</tr>
<tr>
<td>Total</td>
<td>51.68</td>
<td>48.32</td>
<td>0.9</td>
</tr>
</tbody>
</table>

Source: Central Institute of Marine Fisheries, Cochin, Kerala, 2005.

For the coastal communities in India, fisheries sector have traditionally rendered livelihood security and many studies have examined the significance of traditional knowledge in fisheries, impact of technology and institutional arrangements in the neoliberal regime (Kurien, 2000; Salagrama, 2006). There are some studies which have analysed the impact of technology on fisheries in Kerala (Kurien, 1982). Most of the studies that examined women in fisheries in Kerala were more of ethnographic nature which focused on caste, class intersectionalities (Gulati, 1984; Jones, 2006; Samuel, 2007). The gender bias in the marginalized fishing community in coastal Kerala is examined in terms of female-male ratio in the fisherfolk and scheduled tribes’ communities. The indicators of morbidity, longevity, nutrition and education reflect lower levels of wellbeing among females belonging to the fishing community (Pushpangadan and Murugan, 2000).

There has not been much in depth research done on the status of women workers in informal units of seafood pre-processing units and fish vending work in Kerala except few technical reports prepared by the Department of Fisheries, Government of Kerala. The reports and work of the International Collective in Support of Fish workers (ICSF) also marginalize the informal women workers in the peeling/pre-processing units since they are not categorized in a clear-cut manner as part of the fishing community. This has also resulted in the lack of voice for these informal women workers. By way of analysing informal work by women with the help of field based primary survey in the fisheries sector in Kerala, this study aims to fill the gap in knowledge whereby it will be examined how the mobility associated with women’s work can have an instrumental value in women’s everyday life and examine whether work mobility can lead to TM and autonomy and agency of women workers.
2.8  Methodological issues in the measurement of mobility and autonomy

As can be seen from the review of literature on mobility and autonomy concepts, there have been substantial contribution to the field of research on these themes in multiple disciplines. This has contributed to multiple ways of understanding autonomy of women. Mobility or physical movement has been used as an indicator of autonomy, hence there has been limited research on mobility which has intrinsic value for individuals and which can be measured to understand its significance for the autonomy of individuals, especially women. Scholars have used mobility of women in the public domain as an indicator of women’s agency, empowerment and autonomy in various ways (Kabeer, 1999; Jejeebhoy, 2000). In the development studies discipline, there has been studies on mobility as one of the indicators used to measure specific aspects of autonomy (Jejeebhoy and Sathar, 2001; Hasan and Menon, 2004). As pointed out earlier, in India large scale surveys like NFHS have used mobility indicators to assess overall female autonomy (NFHS II and NFHS III). However none of the studies attempted to measure mobility of women which can by itself indicate multiple levels of mobility as experienced by women situated in different socio-economic and cultural contexts.

On autonomy, there has been substantial contribution by way of measurement using factor analysis, ethnographic studies, and autonomy scales based on self-reflective questions which I have pointed out earlier while examining the literature and related findings. As evidenced from the literature, the survey questions can capture the relational autonomy of women regarding self-reflection, structural constraints, and influence from others on various domains of life namely, household, work/life balance and relationships (OPHI, 2008). Moreover, this measurement method is compatible with the participatory and democratic nature of the capability approach which is based on a participatory principle that is associated with the process of reflective and reasoned evaluation on the part of individuals about their lives and autonomous actions and with the exercise of participation and consensus building for societies (Comim et.al, 2008)\(^3\). However, Ghuman et al. (2006) argues that the responses to survey\(^3\) items on women’s autonomy are especially likely to be gender-specific since they ask respondents about areas of potential conflict between men’s and women’s views and

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\(^3\) The Survey on the Status of Women and Fertility (SWAF, 1993-94) on women and their husbands in five countries in Asia is one of the first surveys that has tried to operationalize the multiple dimensions of autonomy. In India, National Family Health Survey II and III (1998-99 and 2005-06 respectively) included questions on autonomy which could be used to analyse health and demographic outcomes.
customary roles which may fail to capture the underlying level of autonomy. Studies have shown that wives and husbands offer considerably different assessments of the wife’s autonomy in various domains and they have different cognitive understandings of the responses to questions on decision making (Ghuman et al., 2006:23). Though there has been advancement in measurement of women’s autonomy by way of use of methods like factor analysis as mentioned earlier (see section 2.1.3.) which included mobility indicators, there is very limited research on the applicability of mixed methods approach to analyse mobility and autonomy in a holistic manner. There has not been any attempt to construct a measurement scale for mobility as a single construct and establish linkages between mobility with autonomy. This study will fill this methodological gap in the measurement of mobility and autonomy.

The next section will state the main gaps in literature which I have distilled from the existing literature in various disciplines and connects them to the main research questions of my study.

2.9 Identifying the Gaps in Literature and Linking the Research Questions

Though there has been valuable additions to the literature on women’s work, mobility and autonomy during the past in diverse disciplines, the focus on specific domains namely, work, mobility, household autonomy and agency in a compartmentalised manner prevented research from developing an integrated approach to examine the relational issues.

The discussion on literature related to the themes on women and work, mobility, autonomy from multiple perspectives have divulged the compartmentalised approach towards the themes in various studies and the lack of a holistic understanding of the concepts as applied in the context of women and work. Examining the linkages between mobility associated with work and women’s household autonomy dimensions using a theoretical/conceptual framework has so far been absent in the extant literature. The main aim of this study is to fill this gap in knowledge by exploring the underlying mechanisms and linkages which influence women’s mobility and autonomy.

The literature on mobility in multiple disciplines (Hanson and Johnston, 1985; Law, 1999; Uteng, 2006) has analysed social, spatial and other mobilities. Gendered mobility and its measurement are confined to a few selected indicators as discussed in Section 2.4 which are part of a larger framework for measurement of either empowerment aspects or autonomy aspects. To measure mobility in itself as a single construct for women has never been
explored in existing studies. In order to bridge this gap in measurement of mobility of women, I have formulated the first research question of this study- ‘can mobility be measured as a single construct for women workers and its various domains analysed?’ This question will further the understanding of women worker’s mobility and its constraints in a given cultural context.

Following from the review on literature, scholars have expounded that there are constraints on mobility of women and there are multiple factors that determine women choosing to work outside the household in different cultural settings (Kabeer, 1999; Basu et.al, 2000; Basu, 2003; Bhalotra and Umana-Aponte, 2010). The constraints on mobility can impact the labour supply decisions of women in a given cultural context which has been recognised in various literature and by multilateral organisations like World Bank (2012). However, informal work being heterogeneous, women’s engagement in informal work, which is mobility associated with informal work is one area not much researched upon and the literature is limited to that extent. Therefore, the second research question of my study aims to explore the determinants of work mobility and the determinants of overall mobility of women. It aims to fill the knowledge gap which exists in the context of hard to reach informal women workers.

Since the path breaking study of Dyson and Moore (1983) in India, the literature on autonomy have analysed various aspects of social, cultural, educational factors that influence autonomy of women (Jejeebhoy and Sathar, 2001; Agarwala and Lynch, 2006). Many scholars have reaffirmed the multidimensional nature of autonomy and attempted to analyse the determinants of autonomy of women by quantifying various indicators and adopting methods like factor analysis. The limitation of these empirical studies has been that they have delineated ‘single causal factors’ which can or cannot influence autonomy of women. The contextual, circumstantial and the complex combinations of factors which can impact autonomy of women workers has remained largely an unexplored realm. The third research question of my thesis is formulated to fill the void in the existing literature as regards analysis of complex causal mechanisms that lead to autonomy of women- ‘what are the causal mechanisms or configurational pathways to high mobility and transformational mobility?’. This study adopts the theoretical framework of CA and a critical realist ontology to analyse the deeper structures that impacts mobility and autonomy of women.

At the global level many studies have highlighted the increasing participation of women and simultaneously increasing exploitation of women workers by capitalist production and export
oriented work (Elson and Pearson, 1981). The contemporary discourse on micro level studies on informal women workers in the cultural context of Kerala are limited as evidenced from the review of literature, especially in the case of fisheries sector (Gulati, 1984; Kurien, 2000; Hapke, 2004; Samuel, 2007). With the exception of technical reports on technology and infrastructure development, women workers are marginalised sections in the development context. Therefore the need for a theoretical perspective on the experiences of the women workers in the context of informal work is significant. In order to bridge the gap in literature, in the context of women and informal work in the fisheries which is the context of my study, the fourth research question is considered - ‘What substantive theories emerge from the work and life experiences of informal women workers in fisheries?’

2.10 Summary of the Chapter

In this chapter, I have shown that, by examining the inherent linkages between the concepts of mobility, autonomy and agency, one can unearth the underlying gender asymmetries in the given cultural context. In this review of literature, I have examined the multidisciplinary perspectives on women’s work, mobility and autonomy by examining the concepts as perceived in sociology, economics and geography. I have reviewed the competing theories and household models which analyse women and work. The CA of Sen which forms the conceptual framework for the analysis of mobility in this study is explained in detail in this chapter. The significance of the feminist framework is to enable analysis of the patriarchal structures which extends from the household to the market and this theme is also examined in the context of women’s work and globalisation. Later, I examine the evolution of the informal economy and the significance of informal sector for women workers. An overview of the gender relations in Kerala which is the context of the study and India are also dealt with in this literature review chapter. I have also given a review of various studies which dealt with the economic, social and cultural aspects of women’s work in fisheries sector in Kerala. I have also examined some of the methodological issues and gaps in research pertaining to the measurement of mobility and autonomy. Finally I examine the gap in literature and how the research questions of my thesis bridge the gap in knowledge in this area of development studies.

The next chapter will examine the methodological framework of the study.
CHAPTER III: METHODOLOGY

In this chapter the explanation of the methodology adopted in this study is dealt with. My thesis has adopted the mixed method approach to analyse the mobility-autonomy linkages of women workers in informal work. Firstly, this chapter (section 3.1) examines the rationale of using mixed methods approach in this study followed by the philosophical assumptions of a mixed method research design. Secondly, the sampling design, the profile of the study area and the work settings are explained followed by the method of data collection using survey questionnaire and interviews. Thirdly, the profile of informal workers in the sample are dealt with. Fourthly, the research questions are revisited and the methods used to address them are explicated. Fifthly, the detailed explanation of the quantitative methods adopted in the study, namely the Rasch Rating Scale Model (RSM) and the multiple regression analysis are given. Sixthly, the detailed exposition of the qualitative analysis adopted in this study, the QCA (Qualitative Comparative Analysis) and the Classic Grounded Theory (CGT) are dealt with. Lastly, the limitations and the ethical considerations taken into account while doing this research are mentioned. The chapter concludes with a summary.

3.1 Rationale for Mixed Methods Approach

This study proposes to adopt the mixed method approach to analyse the mobility-autonomy linkages in informal work by using both quantitative and qualitative methods. Mixed methods are superior to single approach designs in that they can answer research questions that other methodologies cannot, they provide stronger inferences and the opportunity to present greater diversity of divergent views (Teddlie and Tashakkori, 2003). Mixed methods research is not necessarily just an exercise in testing findings against each other. Instead, it is about forging an overall or ‘negotiated account of the findings that brings together both components of the conversation or debate’ (Bryman, 2007).

The quantitative data is used to gather the social and economic characteristics of women workers engaged in unit based seafood processing work and fish vending. The quantitative data will provide the base for sampling of cases for in-depth study using qualitative methods. It can also enable diversity in the selection of cases for qualitative study. This would facilitate contextual understanding of cases and hence offset the weaknesses of the quantitative data analysis. Further, during the analysis I integrate the results of the quantitative measurement scale to perform qualitative analysis for enriching the evidence and to justify the conclusions.
Hence for sampling of cases, and data integration, I consider the mixed method approach as the most appropriate method to conduct my study.

There are various reasons for which researchers combine methods to study particular phenomena. Bryman (2006) pointed out an expansive list of reasons which includes mutual corroboration through triangulation, completeness, explanation, to offset the weaknesses of each method, to provide the sense of process, credibility and so on. This study proposes to use mixed methods approach mainly for elaboration, completeness, sampling for cases and in order to provide a sense of process. It is also proposed to use the sequential transformative design while using the mixed methods.

The transformative design helps in providing a theoretical lens to the mixed methods approach, as noted by Greene and Caracelli (1997). ‘Designs are transformative in that they offer opportunities for reconfiguring the dialogue across ideological differences and, thus, have the potential to restructure the evaluation context. . . . Diverse methods most importantly serve to include a broader set of interests in the resulting knowledge claims and to strengthen the likely effectiveness of action solutions’ (Greene and Caracelli, 1997:24). A transformative model would also indicate the participants who will be studied (e.g., women, the marginalized, certain groups that are culturally and ethnically diverse), how the data collection will proceed (e.g., typically collaboratively so as not to marginalize the study participants further), and the conclusion of the study for advocacy and change to improve society or the lives of the individuals being studied (Creswell et al, 2003, 176). The focus of my study is on women workers in the fisheries sector who are marginalised by the market and the State and through a comparative mixed method transformative design the study will enable comparison between fish vendors and peeling workers and help in voicing the issues faced by women as workers and individuals in a society.

The purpose of a sequential transformative design is to employ the methods that will best serve the theoretical perspective of the researcher and by using two phases, “a sequential transformative researcher may be able to give voice to diverse perspectives, to better advocate for participants, or to better understand a phenomenon or process that is changing as a result of being studied” (Creswell et al, 2003, 183).
The two phases of the design are shown in Figure 2. In the first stage, the quantitative study is conducted using survey questionnaire followed by the qualitative interviews in the second stage, in a sequential manner. The quantitative study will facilitate an overview of the informal women workers in fisheries population as a whole and in this study the survey will also provide the base for selection of the sample for qualitative interviews. The quantitative survey examines the significant determinants for a larger segment of women who engage in seafood pre-processing work and fish vending. To get a detailed understanding of cases, in-depth interviews of selected women workers are conducted. The qualitative study can provide further insight and contextual understanding of each selected case. The survey data provide the base for sampling for the selection of respondents for qualitative analysis. The perceptions and attitudes of the respondents can be elicited by the researcher in the best possible way through one-to-one interviews. Adopting a transformative design helps in voicing the concerns of women workers from their own perspective through qualitative analysis.

3.2 Philosophical Assumptions

A secure building cannot be erected on foundations that are faulty’ (Vernon, 1978). The philosophical assumptions regarding the realities are necessary building blocks for generating theories in social sciences. The researcher is conducting an inquiry into the ‘lived experiences’ of the society which she/he may or may not be a part of. Even if she/he may be part of the society in terms of the language that the people speak, there can be substantial

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31 ‘Lived experiences’ vary from one individual to another even in a given social setting. Other than the external social, cultural and economic influences on human beings, every human being is intrinsically different and this reflects on the ‘lived experiences’ of each individual. To cite an example, say there are 2 households where they lose the only earning male member and both with 2 children. The two widows would respond differently to the situation even if other things remain the same. It may be the girl child who starts working in one of the households to feed the family.
differences in terms of the social, cultural and economic conditions which tuned the ‘lived experiences’ of the researcher and that of the society which he/she is trying to understand. In such a case, a methodology which can bring the researcher closest to the ‘lived experiences’ of the people will be that which enables the researcher to bring forth the closest approximation of the mechanisms of the society, where the researcher can engage with the environment. Similar approach is evident in the earliest works on qualitative approaches to social inquiry as in the case of the Weberian concept of Verstehen.32

The importance of the empathetic understanding of the patterns and mechanisms to study social phenomena has helped in the evolution and development of various approaches and multiple designs of social inquiry from ‘positivism’ to ‘constructivism’, ‘critical realism’ and ‘pragmatism’. The positivists approach the problem with a definite set of hypothesis to test the theory to be proved fit or to be refuted. So the positivist tradition lays emphasis on the quantitative framework and reaches the conclusions through hypothetico-deductive method with little direct interaction with the subjects of study; while constructivism adopts an inductive analysis and pragmatism believes in what is practical depending on the research problem. (Bryman, 1998; Tashakkori and Teddlie, 2003).

The basic premise for any research inquiry on social or scientific phenomenon is to have an epistemological and ontological underpinning which helps in framing the approach one adopts to understand the phenomenon. The central premise of mixed methods research is that the use of quantitative and qualitative approaches in combination provides a better understanding of research problems than either approach alone (Creswell, 2007). However the combining of the qualitative and quantitative methods in mixed method approach has led to differences in understanding the ontological and epistemological positions of the researchers conducting such an inquiry resulting in epistemological chasms (Walby, 2001).

The ‘purists’ of philosophical traditions have claimed the impossibility of merging the various epistemological and ontological positions resulting in the ‘incompatibility thesis’ (Guba & Lincoln, 1994; Smith & Heshusius, 1986). Researchers have moved on trying to understand phenomena despite the paradigm wars and have increasingly acknowledged that case studies and statistical methods are not conflicting but complementary (Flyvbjerg, 2011).

32 ‘Verstehen’ in German means ‘A concept in sociology, propounded by Weber wherein the importance of the actor’s point of view is important to understand and interpret social phenomena. It is opposite to the positivist approach of treating actors as objects of study.'
Though many researchers adopted the pragmatic approach while using mixed method inquiry, ‘pragmatism fails to give a coherent rationale for mixed methods due to its lack of a clear definition of ‘what works’ (Hall, 2012:5). The transformative-emancipatory paradigm is limited to a small subset of all social research. The approach of ‘critical realism’ is compatible with a wide range of research methods including both qualitative and quantitative’ (Hall, 2012).

The critical realist perspectives view realities having multiple dimensions and realities as heterogeneous and ever changing dynamic. It accepts the fallibilities of theories to provide complete explanation of all phenomena. As such, critical realism is based on four main ontological assumptions: (i) that reality exists independently of any individual’s experience or interpretation of it, (ii) that it is not always observable, (iii) the impact of reality is not always predictable and (iv) that social reality is complex and not necessarily revealed by things that can be measured and observed (Denscombe, 2010). The three different ontological domains or modes of reality in the critical realists perspective are the empirical (those aspects of reality that can be experienced either directly or indirectly), the actual (those aspects of reality that occur, but may not necessarily be experienced), and the real or ‘deep’ structures and mechanisms that generate phenomena (see Figure 3) (McEvoy and Richards, 2006:69), which need to be unearthed by understanding the generative structures that bring about the phenomena.

**Figure 3: Critical Realist- Levels of Reality**

![Critical Realist- Levels of Reality](image)

Source: Adapted from McEvoy and Richards, 2006:70.
Critical realism’s perspectives on understanding the relationship between social structures and human agency which are intrinsically open facilitates an explanatory approach along with transformational conception of social activity (Bhaskar, 1989). The ontological realism is essential to Sen’s approach, and that much of the persuasiveness of Sen’s arguments spring from this (not explicitly acknowledged) ontological dimension and it is argued that an explicit recognition of this dimension is crucial for the development of Sen’s perspective (Martins, 2007). The ontological and epistemological position of a realists’ perspective would help in introducing the metacritique (Olsen, 2008) in the research related to the study of the dimensions of mobility and autonomy which are inter-disciplinary issues. The realists approach can bring about the ethical relevance of the study, as emancipation in critical realism is dependent on the transformation of social structures rather than amelioration of state of affairs. (Bhaskar, 1989). This study would approach the dimensions of mobility and autonomy in informal work by incorporating them into the capability approach framework through a critical realist perspective.

The intrinsically open nature of the social system assumed by the critical realist approach enables expanding the understanding of diverse social phenomenon by incorporating new and additional concepts in the CA to analyse differences in mobility and autonomy among women workers. In this study I will adopt depth realism in order to understand the causal mechanisms of mobility and autonomy in the context of informal work. Shallow realism’ or actualism is less realist than depth realism as it denies the reality of inner structures and consequent latent powers while depth realism is transformative and potentially emancipatory. Depth realism promotes theories that can transform and recognizes that the existing state of affairs are the results of enduring structures which can be transformed by way of understanding the structures that underlie those structures (Collier, 1994).

‘All structures- for instance the economy, the state, the family, language- depend upon or pre-suppose social relations- which may include the social relations between capital and labour, ministers and civil servants, parents and children. The relations into which people enter pre-exist the individuals who enter into them, and whose activity reproduces or transforms them; so they are themselves structures. And it is to these structures of social relations that realism directs our attention –both as the explanatory key to understanding social events and trends and as the focus of social activity aimed at self-emancipation of the exploited and oppressed ‘(Bhaskar, 1989:4)
The Marxist-feminist theoretical framework which I adopt along with CA further facilitates the analysis of the weaknesses of the existing systems which deepens the exploitative mechanisms in the informal work settings for women workers, and depth realism will be the most appropriate philosophical approach.

The following section gives the details of the sampling design adopted in the study of informal women workers.

3.3 Sampling Design

The details of the sampling design are given in the following sections. First, I have given the description of the village in which the survey has been conducted; secondly, I describe the profile of the seafood pre-processing industry and thirdly, I explain the sampling strategy adopted for the survey.

3.3.1 Profile of the study village

The village selected for this study is Sakthikulangara which is a marine fishing village located in Kollam district of Kerala state in southern part of India. It is located 9 kilometres north of Kollam city (see Appendix. A for Location Map of Sakthikulangara village). As mentioned in the introductory chapter Section 1.2, I have selected Kerala which is a socially progressive state in terms of human development and educational achievements. As per Census of India 2011 provisional population totals, Kollam district in which Sakthikulangara village is located has a favourable sex ratio at 1113. The female literacy rate of Kollam district is also high at 91.95 per cent indicating good human development indicators.

Sakthikulangara is one of the most important traditional coastal fishing villages in South Kerala and is one of the major fish landing centres in South Kerala with numerous seafood pre-processing centres. The village is located on the south bank of the estuary where Ashtamudi lake confluence with the Arabian sea and has a long coastline. Neendakara is an important port and fishing harbour in Kollam which is less than 1 kilometre from Sakthikulangara village.

The village has several seafood pre-processing (peeling) units. Some of the units are registered while there are units which are unregistered and are in the informal sector. Both the registered and unregistered units are feeder units to major seafood exporting companies.

Being an important fish landing centre there are large number of women fish vendors in
Sakthikulangara village which is also another reason for choosing this village for this study of women fish vendors and peeling workers.

I have purposively selected Kollam district in Kerala for the following reasons. First, it has the second largest number of fishing villages in Kerala (see Table 12) and the largest number of fishing villages in Southern Kerala. Second, owing to the importance of seafood exports from this district, the National Commission for Enterprises in the Unorganised Sector (NCEUS) accepted the proposal by the Government of Kerala to set up a “Growth Pole33” at Kollam. At present Kollam is the only district in Kerala which is identified for the growth pole programme by the NCEUS (2009). NCEUS highlights the significance of the unorganized sector in fisheries in the region which provides livelihood for 70 percent of the population in the district. Third, there are not enough micro level studies in various unorganised segments of fisheries among hard to reach sections of the community, especially women workers in the district. By undertaking this study in Kollam district, my research findings can provide valuable information for further research and will be a value addition for programme implementation by government and non- government agencies involved in growth pole projects.

The estimated fisher folk population of Kerala during 2009-10 is about 11.43 lakhs34 (1.143 million), which includes 8.8 lakhs (0.88 Million) in the marine sector and 2.63 lakh (0.26 Million) in the inland sector. Their settlements are spread over in 222 fishing villages in the state, spread over 9 coastal districts with 7 fishing harbours (GoK, 2010) as given in table 12. Kollam district has 27 marine fishing villages out of the total 222 marine fishing villages in the state of Kerala. 12 percent of fisher folk population in Kerala belong to Kollam district and Sakthikulangara is one of the most important marine fishing villages (GoK, 2007).

33 Government of India adopted the Growth Pole model to promote and strengthen the unorganised sector enterprises. The aim is to scale up infrastructure and service facilities through cluster approach. 34 One lakh is equal to hundred thousand.
<table>
<thead>
<tr>
<th>Districts</th>
<th>Marine</th>
<th>Inland</th>
<th>Total</th>
<th>% share of each district</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thiruvananthapuram</td>
<td>42</td>
<td>4</td>
<td>46</td>
<td>13.7</td>
</tr>
<tr>
<td>Kollam</td>
<td>27</td>
<td>26</td>
<td>53</td>
<td>15.8</td>
</tr>
<tr>
<td>Pathanamthitta</td>
<td>*</td>
<td>3</td>
<td>3</td>
<td>0.9</td>
</tr>
<tr>
<td>Alappuzha</td>
<td>30</td>
<td>24</td>
<td>54</td>
<td>16.1</td>
</tr>
<tr>
<td>Kottayam</td>
<td>*</td>
<td>8</td>
<td>8</td>
<td>2.4</td>
</tr>
<tr>
<td>Idukki</td>
<td>*</td>
<td>1</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td>Ernakulam</td>
<td>21</td>
<td>15</td>
<td>36</td>
<td>10.7</td>
</tr>
<tr>
<td>Thrissur</td>
<td>18</td>
<td>8</td>
<td>26</td>
<td>7.8</td>
</tr>
<tr>
<td>Palakkad</td>
<td>*</td>
<td>2</td>
<td>2</td>
<td>0.6</td>
</tr>
<tr>
<td>Malappuram</td>
<td>23</td>
<td>6</td>
<td>29</td>
<td>8.7</td>
</tr>
<tr>
<td>Kozhikode</td>
<td>34</td>
<td>8</td>
<td>42</td>
<td>12.5</td>
</tr>
<tr>
<td>Wayanad</td>
<td>*</td>
<td>1</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td>Kannur</td>
<td>11</td>
<td>5</td>
<td>16</td>
<td>4.8</td>
</tr>
<tr>
<td>Kasargode</td>
<td>16</td>
<td>2</td>
<td>18</td>
<td>5.4</td>
</tr>
<tr>
<td>Kerala (Total)</td>
<td>222</td>
<td>113</td>
<td>335</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Kerala Fisheries at a Glance, 2007, Directorate of Fisheries, GoK. Note * denotes not a coastal district.

According to the Panfish Book, the total fisher folk population of Kollam district in 2011 was 128,076 and 39 peeling sheds (pre-processing units) are registered in the district. The total number of fish vendors including both men and women in Kollam district are 746 and there are 297 fish markets in the district.

### 3.3.2 Profile of the seafood processing industry

I have chosen the women workers of the seafood pre-processing industry (peeling sheds) for a comparative study of informal women workers. The seafood processing industry is a sunrise industry in Kerala and there has been growth in this sector since the 1960s owing to the growth in import of technology and export promotion policies. The export of marine products of India has steadily grown over the years from Rs.3.92 crore\(^{35}\) in 1961-62 to Rs. 12901.47 crore in 2010-11 (MPEDA, 2009). The share of Kerala in the overall export of marine products from India was 15.81% in volume and 16.62% in value during 2009-10 (Economic Review, Kerala State Planning Board, 2010). The share of Kerala has remained between 15 and 20 percent in terms of volume during the past four decades and it is one of the most important States that contributes to India’s marine exports.

\(^{35}\) 1 crore is equivalent to 10 million
The global changes in the fish and seafood product markets since the 1960s led to tremendous transformation in the regional and local economies dependent on marine and fish markets in the developing countries (Hapke, 2012). In India too, the institutional developments during the post 1960s fuelled the growth spurt in marine exports. The government initiated programmes for development of marine exports provided major impetus and incentives to private sector to start business on this sector on a large scale. The Marine Products Export Promotion Council (MPEPC) was set up in 1961 with the sole aim of development of export oriented production sector of the Indian seafood industry; helping to solve problems faced by the industry and promotion of publicity for exports. In 1972, the Marine Products Export Development Authority (MPEDA) was established as the national agency for the development, regulation and control of the Indian seafood industry. These developments led to the emergence of large scale modernization in this sector and the emergence of large number of private entrepreneurs with the help of financial assistance from the public sector through these agencies.

Not all traditional fishing communities could participate in the technological changes brought in the fisheries sector to the same measure as those with the entrepreneurial and financial backup to leverage the new developments. Hence there were sections that were pushed to the periphery of these developments. This led to the emergence of large number of women who became pre-processing workers (peeling workers) employed in the pre-processing units which emerged as feeder units to large exporting companies. Figure 4 shows the various stages in the production chain of the seafood processing industry.

Figure 4: Stages in Seafood Processing Production chain

| Capture and storage | Landing and Auctioning | Peeling/Pre-processing | Processing, packaging and export |

Source: Based on documents of the South Indian Federation of Fishermen Societies (SIFFS), Kerala seafood export supply chain.
Although the government initially set up a few processing plants in the public sector, the private sector lured by the prospects of high profits, soon became the most dominant force in the fisheries arena (Samudra, 1995). Though registration of pre-processing units (peeling sheds) was made mandatory by MPEDA, it has been the case that there are more units which are not registered and function as informal units to avoid labour legislations and decent work norms. There are widely accepted factors that lead to the growth of informal sector activities like lack of entry barriers, moderate skill requirements in terms of formal education and the scope to avoid labour laws (from the employers’ point of view) (Arup, 2005:292), which are applicable in the growth of peeling sheds too in informal fisheries.

In the next section I have explained the sampling design for the survey of informal women workers.

### 3.3.3 Sampling for survey of informal women workers

In this section, I explain the sampling design adopted in this study for the survey of peeling workers from the peeling sheds and the survey of women fish vendors in Sakthikulangara. I have chosen a sample size of 150 women workers constituting 75 peeling workers and 75 women fish vendors. The sample size of 150 is chosen since it allows for the quantitative analysis of multiple regression. Moreover I have tried to make the sample as representative of the population as possible and manage the study given the constraints on resources and time.

**Random sampling of peeling units**

The study adopts a random sampling strategy for the selection of peeling (seafood pre-processing) units in Sakthikulangara village. First the list of all the peeling units in Sakthikulangara is generated based on the information available with the Directorate of Fisheries, both published and unpublished. The list of informal (unregistered units) are not published. However, unofficial records are available. From this list, using random sampling (by using random numbers), 7 units are randomly picked from where women workers are surveyed (see Figure 5).

**Quota sampling of peeling workers**

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36 A notification in 1980, asked all peeling sheds and processing units to register with it, under the MPEDA Act 1972 Section 3(1). It laid down minimum sanitary and hygienic standards to be followed by peeling sheds to qualify themselves for registration.
I have found during the field visit that the peeling units do not maintain the list of women workers who are employed on an informal casual basis. The women workers may engage in peeling work in multiple units depending on the availability of work. Hence once the 7 units are decided on the basis of random sampling, 75 women workers from units for survey are surveyed through quota sampling. The quota of workers are allotted in such a way that each unit has approximately similar number of workers (10 from each of the 7 peeling units and 2 more from each of the first 2 peeling units\(^{37}\) (sheds) and 1 more from the third unit) which constitute the sample of 75 women peeling workers in my study.

**Snowball sampling of women fish vendors**

The women fish vendors totalling 75 are surveyed from the Sakthikulangara village. The initial plan was to depend on the list from the Independent Fish Workers forum and to use random sampling technique for the sample of 75 fish vendors to be included in the survey based on the list. However, a comprehensive list of women fish vendors in Sakthikulangara village was not available. Using the short list available in the Panfish book (District fisheries resources data book, 2011) as a base, the snowball sampling technique has been used to contact fish vendors for the survey in Sakthikulangara village. Both the market based women vendors as well as the women engaged in door to door fish vending are included in the survey. I have chosen 75 fish vendors so that the sample is not too small and is representative to the extent possible within the time and budget constraints of my study.

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\(^{37}\) Peeling units are also known as peeling sheds in local parlance. I use peeling sheds/units which mean the same.
The following section details the tools adopted for the data collection of the study, and explains the selection of cases for in-depth interviews for the qualitative analysis of the mixed method sequential research design.

### 3.4 Data Collection

I have adopted both survey and interview methods for the collection of data on peeling workers and fish vendors. Survey based data collection is used to cover a larger number of informal workers for collection of factual information on socio-economic and employment data. The interview method is used to explore the complexities behind social phenomena. In the following sections I explain the tools of survey method and the interview method as employed in this study.

#### 3.4.1 Survey questionnaires for data collection on women workers

I have used two structured survey questionnaires, one each for peeling workers and fish vendors to collect data on respondents pertaining to their social and educational background, household characteristics, economic background, domestic and work life, dimensions of mobility, dimensions of household decision making (autonomy) (see Questionnaires in
Appendix B and Appendix C). The survey questions for peeling workers included questions on their working conditions in the peeling sheds or companies. The survey questions were formulated meticulously so as to collect the information with focus on clarity, content and relevance of the question for the study. The questionnaires were pre-tested before the actual field survey. The number of questions and the formulation of questions were refined and modified after pre-test. Some of the questions on mobility and autonomy have been adopted from the already ‘pretested’ questionnaires used by various organisations namely, NFHS and SWAF.

The survey was conducted in two phases. The first phase covered the peeling workers which I did from December 2013 to February 2014. In the second phase of data collection, I did the survey of fish vendors which was from June 2014 to September 2014.

As the focus of my study is on mobility and autonomy, I discuss the questions on mobility and autonomy in detail. I have also referred to pretested questionnaires of NFHS and others as mentioned earlier to prevent information loss while formulating questions. The details of the Likert scale survey question on mobility (Section E of Questionnaires, Appendix B and C) is explained in detail in the Section 3.7.1. of this Chapter.

In the case of autonomy, the existing measurements of autonomy of women as adopted in various studies use a list of questions which touch upon decision making in the various spheres of activity that affects daily existence as cited in Section 2.8. of Chapter II. In the context of India, the questions pertain to decision making roles of women within the family, as regards work, income, expenditure, investments, children’s education, marriage and mobility (Jejeebhoy, 2000; Jejeebhoy and Sathar, 2001). Similar to these studies cited, I have included survey questions on (see Section F of Survey Questionnaires- Question Number. 42 of peeling worker’s questionnaire in Appendix. B and Question Number. 37 of fish vendor’s questionnaire in Appendix. C) decision making by women across ten domains that affect household autonomy. The responses to questions on decision making in various domains are used as indicators of various aspects of household autonomy. The ten aspects of decision making included in the Questionnaire are:

i. Household expenditure (Who decides how overall household income is spent?);
ii. Children’s education (Who decides on children’s education?);
iii. Major purchases ;
iv. Major investments;
v. Decisions regarding work/occupation;
vi. Size of the family;
vii. Marriage in the family;
ix. Travel and
x. Treatment of illness.

Questions are posed to respondents as to who is responsible for taking decisions and has the greatest say on the decisions across the ten domains stated above. The responses reflect the decision making role of women workers within the households.

In addition to the question on various domains, to establish the linkages between transformational mobility and the autonomy of women workers, I measure autonomy of women workers with the help of a self-reflective question. The focus of the self-reflective question on autonomy is on women’s own perception of autonomy by way of having a sense of control over one’s lives and the ability to exercise choice without coercion. Therefore, I have used a survey question which focuses on self-reflection of the respondent on their perception of freedoms, choice and control over their lives. It is a ‘ten-step ladder autonomy question’ (see Section G of Questionnaires- Question Number 49 in peeling worker’s questionnaire in Appendix B and Question Number 44 in fish vendor’s questionnaire, in Appendix C) and is modelled similar to the one used by the Oxford Poverty and Human Development Initiative (OPHDI). The ten step ladder question is used to understand the ‘autonomy perception of women workers’ by themselves and it is very reflective of one’s own situations.

The OPHDI survey questions are based on SDT (self-determination theory). SDT holds that if the three basic psychological needs namely those for autonomy, relatedness and competence are supported and satisfied within a social context people experience more vitality, self-motivation, and well-being. Conversely, the thwarting or frustration of these basic needs leads to diminished self-motivation and greater ill-being (Chirkov, et.al, 2003). The survey questions to assess autonomy and wellbeing, based on self-determination theory have been empirically validated across different cultural settings through various studies (Chirkov, 2009). The advantage of using the survey responses to analyse autonomy of individuals is that these are self-reported based on awareness about one’s own situation. It helps in capturing the autonomy of individuals as experienced or felt by them. The ten step
ladder question used in OPHDI survey which I have used in my survey with slight modification is as follows:

“Some people feel that they have completely free choice and control over their lives, while other people feel that what they do has no real effect on what happens to them. Imagine a ten step ladder where on the bottom, the first step, stand people who are completely without free choice and control over the way their lives turn out, and on the highest step, the tenth, stand those with the most free choice and control.”

a. On which step are you today (on a scale of 1 to 10)?

Thus the analysis of the survey data based on the ‘ten step autonomy ladder question’ and the survey responses to questions on decision making within the household will try to overcome some of the limitations that I have touched upon in the literature on measurement issues of mobility and autonomy. I have based my analysis of mobility and household autonomy of women workers on the responses to the survey questions which have both a direct component and a self-reflective component. To elaborate and facilitate an in-depth understanding of the mobility and autonomy of women workers in the cultural context of Kerala, I have also adopted qualitative interviews (see next section) which provide further insights into the multidimensional aspects of autonomy along with survey data analysis.

3.4.2 Qualitative interviews

I have adopted qualitative interviews as an appropriate method for in-depth understanding and analysis of cases and their lived experiences both as informal workers and as women in the cultural context of Kerala. As a mixed method study, for elaboration and completeness I use qualitative analysis of interviews of selected cases to explore the deeper structures and mechanisms that influence the women workers.

As mentioned earlier the survey sample consists of 150 women workers comprising of 75 peeling workers and 75 fish vendors from the village of Sakthikulangara. I have selected cases for qualitative interviews by way of purposive sampling from the quantitative survey data. 20 women workers comprising of 10 peeling workers and 10 fish vendors are selected for qualitative interviews (see profile of the 20 cases in Appendix D). The basis for selection of women workers and fish vendors for interviews is the social, marital and background characteristics of the workers provided by the survey data.
The socio-cultural and individual characteristics features I adopted for the selection of cases for interviews of peeling workers and fish vendors based on survey data are given in Table 13. The criteria for selection of the respondent included the age, marital status, years of work, level of education of the respondent, habit, education and employment status of spouse, and spousal violence. The most important criterion for selection is minimum one year of work in peeling and fish vending. Based on the survey data, the age distribution of selected cases of peeling workers and fish vendors are maintained in such a manner as to facilitate maximum representation. With majority of workers with below primary level education, cases are distributed with maximum representation of women with low education level. As can be seen from table 13, the cases with low education of spouse, unemployed spouse, spouses with irregular work, alcoholism and domestic violence have also been selected for qualitative interviews for diversity of cases and diversity of perspectives on women workers.

I have conducted the interviews with informed consent from the respondents. In the case of peeling workers, I have conducted the interviews mostly at their workplaces and the households depending on their convenience. In the case of fish vendors, most of the interviews have been held at their households or community spaces like Church as it was difficult to conduct interviews in market places and during their door-to-door vending. I have used a semi structured questionnaire (see Appendix. D) for qualitative interviews though the questions are used only for prompting and the respondents were allowed to narrate their work and life experiences. The interviews were audio recorded and transcribed for analysis.
<table>
<thead>
<tr>
<th>Criterion</th>
<th>Distribution of the selected cases across each criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGE</td>
<td></td>
</tr>
<tr>
<td>less than 35</td>
<td>Peeling workers: 1, Fish Vendors: 0</td>
</tr>
<tr>
<td>35-55</td>
<td>Peeling workers: 9, Fish Vendors: 4</td>
</tr>
<tr>
<td>55-65</td>
<td>Peeling workers: 0, Fish Vendors: 4</td>
</tr>
<tr>
<td>Above 65</td>
<td>Peeling workers: 0, Fish Vendors: 2</td>
</tr>
<tr>
<td>MARITAL STATUS</td>
<td></td>
</tr>
<tr>
<td>Widow</td>
<td>Peeling workers: 2, Fish Vendors: 1</td>
</tr>
<tr>
<td>Married</td>
<td>Peeling workers: 8, Fish Vendors: 9</td>
</tr>
<tr>
<td>YEARS OF WORK</td>
<td></td>
</tr>
<tr>
<td>Less than 5</td>
<td>Peeling workers: 2, Fish Vendors: 1</td>
</tr>
<tr>
<td>05-10 years</td>
<td>Peeling workers: 5, Fish Vendors: 2</td>
</tr>
<tr>
<td>10 - 15 years</td>
<td>Peeling workers: 3, Fish Vendors: 3</td>
</tr>
<tr>
<td>Above 15 years</td>
<td>Peeling workers: 0, Fish Vendors: 4</td>
</tr>
<tr>
<td>LEVEL OF EDUCATION OF RESPONDENT</td>
<td></td>
</tr>
<tr>
<td>Illiterate</td>
<td>Peeling workers: 0, Fish Vendors: 1</td>
</tr>
<tr>
<td>High Education</td>
<td>Peeling workers: 1, Fish Vendors: 0</td>
</tr>
<tr>
<td>Below High school</td>
<td>Peeling workers: 9, Fish Vendors: 9</td>
</tr>
<tr>
<td>EDUCATION OF SPOUSE</td>
<td></td>
</tr>
<tr>
<td>Lower spouse education</td>
<td>Peeling workers: 2, Fish Vendors: 2</td>
</tr>
<tr>
<td>Higher spouse education</td>
<td>Peeling workers: 8, Fish Vendors: 8</td>
</tr>
<tr>
<td>SPOUSE HABIT</td>
<td></td>
</tr>
<tr>
<td>Alcoholic</td>
<td>Peeling workers: 1, Fish Vendors: 4</td>
</tr>
<tr>
<td>Non alcoholics</td>
<td>Peeling workers: 9, Fish Vendors: 6</td>
</tr>
<tr>
<td>EMPLOYMENT STATUS OF SPOUSE</td>
<td></td>
</tr>
<tr>
<td>Unemployed</td>
<td>Peeling workers: 2, Fish Vendors: 1</td>
</tr>
<tr>
<td>Irregular work (coolie)</td>
<td>Peeling workers: 8, Fish Vendors: 9</td>
</tr>
<tr>
<td>Previous work of respondent</td>
<td></td>
</tr>
<tr>
<td>Switched between the two types of work</td>
<td>Peeling workers: 1, Fish Vendors: 0</td>
</tr>
<tr>
<td>Not switched</td>
<td>Peeling workers: 9, Fish Vendors: 10</td>
</tr>
<tr>
<td>Spousal violence</td>
<td></td>
</tr>
<tr>
<td>Violence</td>
<td>Peeling workers: 2, Fish Vendors: 4</td>
</tr>
<tr>
<td>Absence of violence</td>
<td>Peeling workers: 8, Fish Vendors: 6</td>
</tr>
</tbody>
</table>

**TOTAL CASES = 20**
(10 peeling workers + 10 fish vendors)

Source: Own tabulation based on survey data.
In the next section I have given the profile of the informal workers in my sample.

3.5 Profile of Informal Workers in the Sample

As mentioned earlier, the data for analysis is based on the field survey I conducted among the peeling workers and among the fish vendors in Sakthikulangara during 2013-2014 (see 3.3.3). In this section I have outlined the social, educational and individual characteristics of the informal workers, peeling workers and fish vendors, who constitute the sample of my study based on the data collected during the survey (see Table 14).
Table 14: Profile of Informal Workers in the Sample

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>Peeling (in %)</th>
<th>Workers</th>
<th>Fish (in %)</th>
<th>Vendors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married</td>
<td>78.67</td>
<td></td>
<td></td>
<td>95</td>
</tr>
<tr>
<td>Widow</td>
<td>12</td>
<td></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Separated</td>
<td>9.33</td>
<td></td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Religious denomination</th>
<th>Peeling (in %)</th>
<th>Fish (in %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Christian</td>
<td>56</td>
<td>87</td>
</tr>
<tr>
<td>Hindu</td>
<td>42.67</td>
<td>13</td>
</tr>
<tr>
<td>Muslim</td>
<td>1.33</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>Peeling (in %)</th>
<th>Fish (in %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBC</td>
<td>89.33</td>
<td>97</td>
</tr>
<tr>
<td>SC/ST</td>
<td>2.67</td>
<td>3</td>
</tr>
<tr>
<td>FC (Forward Caste)</td>
<td>8</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Educational Level</th>
<th>Peeling (in %)</th>
<th>Fish (in %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illiterate</td>
<td>6.67</td>
<td>5</td>
</tr>
<tr>
<td>Below Primary (inclusive of 5th drop out)</td>
<td>28</td>
<td>36</td>
</tr>
<tr>
<td>Middle School (6 and 7)</td>
<td>20</td>
<td>19</td>
</tr>
<tr>
<td>Higher Secondary (above 8th)</td>
<td>41.33</td>
<td>36</td>
</tr>
<tr>
<td>Pre-degree</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Peeling (in %)</th>
<th>Fish (in %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 30</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>30-40</td>
<td>19</td>
<td>25</td>
</tr>
<tr>
<td>40-50</td>
<td>32</td>
<td>39</td>
</tr>
<tr>
<td>50-60</td>
<td>20</td>
<td>21</td>
</tr>
<tr>
<td>Above 60</td>
<td>2</td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total number of informal workers surveyed</th>
<th>Peeling workers</th>
<th>Fish vendors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>75 peeling workers</td>
<td>75 fish vendors</td>
</tr>
</tbody>
</table>

Source: Own survey data on women workers.

Table 14 gives the social and educational profile of the peeling workers and fish vendors of the survey sample of informal workers. The age distribution of informal women workers in my sample shows that majority of women 32 percent of the peeling workers are in the 40 to 50 year age group and more than 50 per cent in the 40-60 age group. It is notable that more than 80% of peeling workers and fish vendors belong to the Other Backward Classes category who mainly belong to the ‘Latin catholic’ community. Majority of the informal workers have less than high school level of education. 9 % of peeling workers are separated.
In the following sections 3.5.1 and 3.5.2. I have given the detailed profile of the peeling workers and fish vendors in my sample respectively.

3.5.1 Peeling workers

Peeling workers form one of the key links in the seafood processing production chain. The peeling work involves cleaning, deskinning and slicing dependent on the raw material (squid, cuttlefish, shrimp) and is mainly done by women (Table 15). The women workers from seafood pre-processing units (peeling sheds) called peeling workers are compared with fish vendors who form the second group of informal workers from fisheries whose data will be used for analysis. The women workers from peeling sheds and units attached to companies are also randomly taken for administering the survey questionnaire after seeking consent from the workers. The survey data have been collected at the peeling sheds while women continued their peeling work. Data was obtained from 75 women workers from the peeling sheds who work informally or without any contractual obligations with the peeling shed owners on a piece rate basis.

On an average women workers earn Rs.200 (@ Rs.20-25/basket of prawns/squids) per day for work of 8 to 9 hours duration. The peeling work involves squatting on the ground, mostly on wet floors in dingy sheds which result in chronic back pain, skin diseases and other health issues owing to the unhealthy conditions of work for women workers. The peeling work is considered demeaning and is mostly done by women who belong to the other backward castes or lower castes.

Peeling or pre-processing work is the third stage in the seafood processing production chain (see Figure 5). The work is done on wet floors and unhealthy working conditions. Peeling work is done only by women who have to squat on the floor and do the cleaning and deskinning of different types of raw material like cuttlefish, squid, shrimp and prawns.

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38 Though MPEDA has stipulated decent work conditions to be followed by the peeling sheds, majority of the sheds do not adhere to the norms. In order to cut costs of production work places remain unhealthy and dirty. Though committees have been set up by the government at the District and State levels to monitor the working conditions and health of women workers, these policies are not effectively implemented as evident in the survey. As allied workers in fisheries the labour welfare measures do not reach these segment of workers.
The majority of the women belong to families whose heads of the household are also engaged in some work related to fisheries sector namely, as coolie in the harbour and port, worker in the fishing boats and boat mechanics. As the peeling work is not dignified in the social set up, only married women, widows or separated/divorced women aged 30 years and above tend to work in peeling sheds. Older workers are of the opinion (information based on author’s own interview data of peeling workers) that they would not like their daughters to enter the peeling work because of the many types of exploitation that exists in the workplace. The age profile of peeling workers in my sample provides proof to this claim made by the women workers (see Table 14.) There is complete segregation of work in the peeling sheds with only women engaged in peeling work at the bottom end of the production chain and they are the lowest paid in the production chain. Within the peeling sheds, peeling workers who are women are supervised by supervisors who are men. The headload workers and truck drivers are all men and are paid more wages than peeling workers.

### 3.5.2 Fish vendors

The 75 women fish vendors in the sample belong to three different types of vending. Some of the vendors are based in the local market, some of them are based in the harbour and others do door-to-door vending. The type of fish vendors in the sample is given in Table 16.
### Table 16: Distribution of Type of Fish Vendors in the Sample

<table>
<thead>
<tr>
<th>Type of fish vendors</th>
<th>Number of Vendors</th>
<th>Percentage of Vendors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Door-to-Door vendors</td>
<td>43</td>
<td>57.3</td>
</tr>
<tr>
<td>2 Market based vendors</td>
<td>22</td>
<td>29.3</td>
</tr>
<tr>
<td>3 Harbour based vendors</td>
<td>10</td>
<td>13.3</td>
</tr>
<tr>
<td>Total number of Fish Vendors</td>
<td>75</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Own survey data on fish vendors.

Most of the fish vendors took up fish vending after getting married with increase in income needs of the household and the lack of economic security owing to the seasonal nature of incomes of heads of households who are mostly occupied in the fisheries work. 83 percent of women fish vendors are traditional fish vendors.

In my sample of fish vendors (see Table 16), majority of the fish vendors are door-to-door vendors. Door-to-door vending involves carrying headload of fish in a basket or basin which weighs around 3 to 5 kilograms and walking for distances of 8 to 10 kilometres on a daily basis. For most of the fish vendors, to buy fish at a cheaper price from the merchants, they have to reach the harbour in the early morning between 4 am and 5 am. From then on, they will start moving from house to house. As women, they do not use any motor vehicle like bike or pick up vans which men fish vendors use on a regular basis. As women they have constraints to move further away from the village and they mostly sell in the nearby areas of their residence. Therefore, the margin of profit that they can make is much lower compared to men fish vendors who travel to farther distances by motor vehicles and gain greater profits by selling at higher prices.

The fish vendors report their earnings at approximately Rs. 200 to 350/- per day. The difference in margins for those doing door-to-door vending and those who are market/harbour based is not substantial. The market/harbour based fish vendors have to face aggressive competition in buying and selling their fish. While the door-to-door vendors have their areas demarcated as to which households to serve, however the physical hardships of travelling and walking for vending are much higher for door-to-door vendors.

In the sample, 95% of fish vendors are married women and more than 80% belong to Christian religious groups (see Table 14).
The peeling workers and fish vendors together constitute 150 informal women workers from the fisheries sector in my sample for this study. Both peeling work and fish vending are occupations which are low paid and women face poor working conditions. As mentioned earlier in Section 3.1, this study is based on a mixed method approach. I have adopted both quantitative and qualitative methods to analyse the data collected through survey and interview methods as explained in the sampling design.

In the next section I restate the main research questions of the study and summarise the methods adopted to explore each question and it is followed by the detailed explanation of each of the methods adopted in the study.

3.6 Research Questions and Methods

I now revisit the main aim of the study which is to examine whether mobility associated with two different types/modes of informal work can be transformational and improve the autonomy (decision making power) of women within the household in the fisheries sector in the Southern state of Kerala in India. Transformational mobility is the freedom and ability to move outside the household without constraints from anyone else. It is one aspect of the household autonomy which has intrinsic and instrumental values for women and is a ‘capability’ which implies freedom of movement in the real sense. It connotes well-being freedom. The key objectives of the study are to analyse different domains of mobility (transformational and otherwise) between the two groups of women workers namely peeling workers and traditional fish vendors; to analyse the impact of transformational mobility on the perception of intra-household autonomy and to compare and contrast the causal mechanisms or pathways to autonomy among the two groups of informal women workers. On the basis of the key research objectives the central research question for the study is:

How has ‘mobility’ (as it is associated with informal work in fisheries sector) with its different dimensions (transformational and otherwise) contributed to improving women’s autonomy within the household in the State of Kerala in India?

Before explaining each of the quantitative and qualitative methods adopted in this mixed methods research study, I have summarised the main questions and the methods that I use to explore each question in the following Table 17.
The next section details the quantitative analysis used in the study to explore the research questions.

### 3.7 Quantitative Analysis

The quantitative analysis adopted in this study is to analyse two important questions, the first one pertains to the measurement of mobility of women workers engaged in informal work in the fisheries and the second question pertains to the factors that determine work mobility and overall mobility of women workers.

The first section of the quantitative analysis tries to measure mobility associated with informal work to examine the degree of permissibility of mobility of informal women workers. Towards this, the study introduces a new measure of mobility of women using the Rasch model which is explained in the next section 3.7.1. It will enable a comparison of mobility as experienced by the peeling workers and the fish vendors in informal fisheries work in Kerala.

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Methodology Adopted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can mobility be measured as a single construct for women workers? Are there multiple domains of mobility as experienced by fish vendors and peeling workers in fisheries?</td>
<td>To measure mobility of women as a single construct I adopt the Rasch Rating Scale Model (RSM) based on survey data of 150 informal workers (75 peeling workers and 75 fish vendors)</td>
</tr>
<tr>
<td>What are the factors that determine ‘work mobility’ and ‘overall mobility’ of informal women workers?</td>
<td>To analyse the factors that determine work mobility and overall mobility of women, I have used multiple regression models based on survey data of 150 informal workers</td>
</tr>
<tr>
<td>What are the causal mechanisms or configurational pathways to ‘high mobility and transformational mobility’ in the context of fish vendors and peeling workers in fisheries?</td>
<td>Causal pathways to high mobility and transformational mobility of women are analysed using the crisp set Qualitative Comparative Analysis (csQCA) based on both survey and interview data</td>
</tr>
<tr>
<td>What substantive theories emerge from the work and life experiences of women as fish vendors and peeling workers in the cultural context of Kerala?</td>
<td>To explore the theories that emerge from the interview data, I adopt the Classic Grounded Theory (CGT) analysis of qualitative interviews of 20 informal workers (10 peeling workers and 10 fish vendors)</td>
</tr>
</tbody>
</table>

Source: Based on author’s own methodological framework.
The second section of the quantitative analysis employs multiple regression modelling which helps in analysing the factors that determine women workers’ engagement in informal paid work outside the household in peeling units and in the traditional fish vending work in fisheries in Kerala. The model tries to explore the various factors like education, caste and age which determine the work mobility and overall mobility of the women workers in fisheries.

3.7.1 Rasch Rating Scale Model (RSM) to construct the measure of mobility

Rasch models are mainly used in psychometry, medical sciences and education studies to measure latent traits and construct scale measures to analyse achievements using test scores or attitudinal measures from questionnaire items. Since mobility is considered a latent trait which can be captured using survey questions related to various domains of movements of women, I found the Rasch model a scientific method which is highly suited to measure the latent trait of mobility based on Likert response scores to questions in the survey, especially since my aim is to measure a single construct of mobility of women workers.

This study will introduce a new measure of mobility using Rasch Rating Scale Model (RSM). Rasch model is one of the item response theory models which can help transform data from the human sciences into abstract, equal interval scales. “Equality of intervals is achieved through log transformations of raw data odds and abstraction is accomplished through probabilistic equations” (Bond and Fox, 2001:7). The Rasch RSM is the most appropriate from the family of Rasch models, for Likert type responses to items to measure single attributes or abilities based on this type of responses. The Rasch model is a probabilistic model which provides a mathematical framework to measure the item responses by individuals on a Likert scale which can be used to fit both the items and responses along a continuous logit scale for measuring the single construct of mobility. Along the logit scale based on the Rasch model, one can plot the persons’ measures of mobility and if necessary define a hierarchical categorisation of women workers into those with high mobility and those with low mobility who do not have transformational mobility (TM).

The Rasch model in its simplest form is a dichotomous model which predicts the conditional probability of a binary outcome (0 or 1) given the person’s ability and the item’s difficulty and the model expresses the probability of obtaining a correct answer, that is 1, as a function of the size difference between the ability (B) of the person (n) and the difficulty (D) of the item (i). The following equations are based on Bond and Fox, 2001.
In Rasch notation, $B_n$ stands for the ability measure of person $n$ and $D_i$ stands for the difficulty measure of the item $i$. In its simplest form, Rasch model can be expressed as:

$$P_{ni}(x = 1) = f(B_n - D_i)$$

(1)

Where $P_{ni}$ is the probability of person $n$ getting a score ($x$) of 1 (where 1 is the correct response) on a given item ($i$) is a function of the difference between a person’s ability ($B_n$) and an item’s difficulty($D_i$).

In a dichotomous Rasch model the probability of a successful response consists of a natural logarithmic transformation of the person and item estimates. The transformation turns ordinal level data into interval measures for both persons and items by converting descriptive data into inferential measures based on probabilistic functions (Bond and Fox, 2001: 200).

In the case of Rasch RSM, which is an extension of the dichotomous model the larger number of response categories necessitates estimation of threshold difficulties for each item, in addition to the person and difficulty estimates. In the case of a 4 response categories Rating Scale Model, there will be 3 thresholds. With each item threshold ($k$) having its own difficulty estimate ($F$), the threshold difficulty is added to the item difficulty to indicate the difficulty of threshold $k$ on item $i$. The equation for estimation of rating scale model is expressed as follows:

$$P_{niki} = \frac{e^{(B_n - D_i - F_k)}}{1 + e^{(B_n - D_i - F_k)}}$$

(2)

Equation (2) expresses the probability of any person choosing any given category on any item as a function of the ability of the person $n$ ($B_n$) and the endorsability of the entire item $i$ ($D_i$) at the given thresholds $k$ ($F_k$). In this equation $F$ is the threshold difficulty. In my study, this implies the level of difficulty a woman worker faces to improve her mobility level from a lower threshold to a higher one along the mobility scale constructed.
The person ability measure in my study thus will reflect the ability of persons to be mobile on one’s own terms without seeking permission. The higher the score on this measure, the greater the level of permissibility of mobility measure, and greater is the freedom for the person to be mobile reflecting high mobility and TM. My aim is to measure the mobility of informal women workers defined as the ability and freedom to move based on their responses to 10 questions which seek to understand the degree of permission required for women workers to move outside the household for various personal, social and familial needs and analyse the constraints. The four response categories used in the study are – Always (1); Sometimes (2); Rarely (3); and Never (4). The respondent who requires permission for movement outside the household will answer (1) denoting that she requires permission ‘Always’ reflecting very low freedom to move or low permissibility or ability for mobility. The survey response of 4 indicates high mobility with freedom to move anywhere outside the household without permission indicating greater autonomy or decision making on one’s own movements outside the household.

The Likert rating scale and the items or survey questions (see Appendix. B and C for Questionnaires) administered for measuring the mobility of women workers are given in Table 18.

<table>
<thead>
<tr>
<th>Table 18: Likert Rating Scale to Measure Mobility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Question on mobility in the survey</strong></td>
</tr>
<tr>
<td>Items</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>1</td>
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<tr>
<td>2</td>
</tr>
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<td>3</td>
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<td>8</td>
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<tr>
<td>9</td>
</tr>
<tr>
<td>10</td>
</tr>
</tbody>
</table>

Codes: A-1; S-2; R-3; N-4

Source: Based on author’s survey questionnaire.
The person ability measure in my study thus will reflect and measure the ability of persons to be mobile on one’s own terms without seeking permission. The greater the ability measure, the greater is the freedom for the person to be mobile. The difficulty of items will reflect which type or domain of mobility is most constrained for women in the cultural context of Kerala; for instance it will help explore whether the movement to visit doctor is more permissible or the movement to visit friends is most permissible. The threshold difficulty will show the difficulty for the respondents to cross over from one Likert scale category level to the next scale category level. Using a Likert scale can reflect the respondent’s perception and attitude towards their mobility or freedom to move in specific situations and context as stated above in the 10 items.

From the item responses and by logistic transformation of the mobility scores, the equation for estimation of mobility parameters to measure mobility of women using RSM can be generated which is based on equation (2) stated earlier.

The parameter separation for RSM is given in the following formula:

\[ \ln \left( \frac{p_{nikt}}{1-p_{nikt}} \right) = B_n - D_t - F_k \]  

where \( B_n \) is the person ability, \( D_t \) is the item difficulty and \( F_k \) is the difficulty of the kth threshold. The parameter separation shows that Rasch measures represent a person’s ability as independent of the specific questionnaire items and item difficulty as independent of specific samples within the standard error estimates. This feature is very useful for measurement of specific traits like mobility. Parameter separation is unique characteristic of the Rasch model.

Rasch model is an innovative method in the development studies discipline and is suited to measure mobility which uses survey responses to analyse mobility of women and intends to construct a measure of mobility as a single construct or attribute in a given time, based on the item responses given in the questionnaire. The Rasch model assumes unidimensionality that is only one attribute or construct can be measured at a time. In this study the aim is to measure the mobility of informal women workers. To measure the position of each person in a continuous mobility scale, the raw scores have to be transformed and the rating scale data
can be analysed using the Rasch model. The Rasch RSM enables plotting the persons and items along an interval scale by using the logarithmic transformations of raw score responses of the items. Along the scale it enables to estimate the developmental distances between the ordered skills or persons and measure the developmental pattern shown among items and persons. The advantages of Rasch model are:

- The size of the gaps between the scores can be interpreted by logarithmic transformation of the raw score into its success-to-failure ratio or odds for which the study will use the Rasch RSM.

- The higher the value along the logit scale of the Rasch model, the higher the degree of mobility i.e. greater the freedom to move outside the household without permission. This helps in hierarchical categorisation of person measures.

- It also enables visual mapping of persons and the domains of mobility in the same frame of reference which is very advantageous compared to other methods of measurement.

**Validation of the measurement scale of mobility**

The Rasch model ‘uses the responses of individual persons to individual items as the raw data to begin’ (Wright and Stone, 1979:9). The validation of the measurement scale is critical in assessing whether the items used are valid in measuring the latent variable that it intends to measure and the response patterns are valid to locate the persons along the scale of measurement (Bond and Fox, 2001). In this section I explain the various fit statistics that I have adopted to test the validity of the Rasch measurement model used in this study of mobility.

Firstly, the item fit statistics are used as indicators for construct validity. In the context of the Rasch model the fit statistics indicate how accurately the available data will fit the model. The outfit statistics refer to the sum of squared residuals divided by the number of items to which the persons responded, hence it is a ‘mean squares’ statistics. Rasch analysis programmes report fit statistics as two chi-square ratios: infit and outfit mean square statistics which can be used to measure the validity of the model (Bond and Fox, 2001). The outfit and infit mean squares have expected value of 1 and a range from 0 to positive infinity. Though scholars point out the cut off points for acceptable range of outfit and infit not to be too farther away from their expected values, the acceptable range is not that clear cut (Smith,
Schumacker and Busch, 1998; Pampaka, et al., 2013; Bond and Fox, 2001). Based on the existing cut off ranges suggested in Rasch literature, the item fit values between 0.5 and 1.5 can be considered good or ‘productive for measurement’ (Linacre, 2002). However, any value of infit and outfit mean squares higher than 1.4 will be a cause for concern about the fit of the model as pointed out in Rasch literature (Pampaka, et al., 2011). Therefore, the fit statistics above 1.4 can be considered as ‘misfits’ and will require further investigation. The fit values which are lower than 1 are not considered harmful for the model and thus do not impact the validity of the scale as those items with higher values (than 1). Similar cut off points have been adopted and followed in various other measurement studies (Pampaka, et al., 2011; Pampaka et al., 2013; Pampaka et al., 2012; Pampaka and Wo, 2014).

The item fit statistics of the Rasch model help to check the fulfilment of the unidimensionality assumption (that is, whether the model is measuring a single construct) and the person-item maps and the item difficulty hierarchy provide evidence for substantive content and external validity (Pamapaka et al., 2013; Wolfe and Smith, 2007). For checking the validity of the models presented in this study and performed with the Rasch measurement technique, I have reported the fit statistics to detect the discrepancies between the Rasch model prescriptions and the data collected in practice (Bond and Fox, 2001: 173). The person measure\textsuperscript{39} and item measure statistics are used to test the validity. Therefore the Rasch model can be empirically tested as long as the unidimensionality (‘useful measurement involves examination of only one human attribute at a time on a hierarchical more than/less than line of enquiry’ (Bond and Fox, 2001) and independence assumptions\textsuperscript{40} are maintained.

Secondly, I have used the fit statistics to check the functioning of the rating scale structure. For a well-functioning category structure, the fit of each rating scale category has to meet the criterion of mean square statistics less than 2.0 (Linacre, 1999). If the rating scales do not meet the criterion, the categories need to be deleted or collapsed so that categories reflect accuracy in measurement.

\textsuperscript{39} A person’s measure is his estimated position along the line of the variable (here, the latent trait is permissibility of mobility) and an item’s calibration is its estimated position on the line of the variable along which persons are measured (Wright and Masters, 1982:1).

\textsuperscript{40} Local independence is an assumption of Rasch model which states that the items should not be related to each other since it can result in biased parameter estimation. Local item dependence (LID) will affect the unidimensionality of the construct (Baghaei, 2008). Rasch model also assumes that all items discriminate equally between persons with high and low abilities.
Thirdly, I have analysed the reliability and separation indices for persons and items. Reliability is estimated for both persons and items and is based on the concept of Cronbach’s alpha (Bond and Fox, 2001). The person reliability reflects how well one can differentiate persons on the measured variable (ibid) and its value ranges from 0 to 1. The indices closer to 1, better will be the reliability of the model. Separation indices reflect the spread or separation of items/persons on the measured variable. It is expressed in standard error units that is adjusted standard deviation by the average measurement error. Separation indices are also computed for both persons and items. The true separation index lies between the ‘Real’ estimate which is the lower bound and the ‘Model’ estimate which is the upper bound of the estimates. ‘The person separation index is not bound by 0 and 1 which makes it useful for comparing reliabilities across analyses’ (Bond and Fox: 2001, 207). Separation indices are not bound by 0 and 1 unlike reliability indices.

Fourthly, when a measurement scale is used with different groups of persons, as in this study for peeling workers and fish vendors, it is necessary to check for Differential Item Functioning (DIF) for group differentiation of the construct measures, which is an important aspect of validity. For the single scale of permissibility of mobility for all informal workers which I have constructed, I have checked for DIF which will provide evidence for item bias if any.

Lastly, I have used the principal component analysis (PCA) of the standardised residuals to check if there are sub dimensions or secondary dimensions other than ‘mobility’ in the data which is incompatible with the Rasch model.

In this study, I have used the scale based on Rasch RSM and the variable maps of persons and items (domains of mobility) to categorise the various domains of mobility on the basis of levels of permissibility. The person measure of mobility constructed using Rasch model will help in ordering/positioning and then categorising the informal women workers along a logit scale of mobility. This will help in locating women workers with high mobility levels which will include women with transformational mobility (those who are able to take decisions about their own movements) and can be plotted on a logit scale of mobility.

Once the informal women workers are categorised into women with different degrees of mobility along the logit scale, those who have higher scores with high mobility and those who have lower scores on the basis of the measurement scale with low mobility, an in-depth
analysis of pathways to high mobility and low mobility of women workers is done using the QCA which is explained in section 3.8.1.

The next section gives the details of the multiple regression analysis adopted in this study to analyse the determinants of mobility of women workers in informal work in fisheries.

### 3.7.2 Multiple regression model

Regression analysis is a powerful, flexible and widely used technique of quantitative analysis which can scientifically isolate the contribution of independent factors on a dependent variable (Lewis-Beck, 1993:69). It is a statistical technique to analyse the relationship between a dependent variable and independent variables and to predict a single dependent (or outcome) variable from the knowledge of one or more independent variables. If the regression involves a single independent variable it is called simple regression and for more than one independent variables, multiple regression technique is applied (Hair et al, 2007).

Regression models can be used for both prediction of dependent variable or for explanation. In my thesis, I use the multiple linear regression models mainly for explanation that is to analyse the contribution and significance of each factor on the two dependent variables namely, work mobility and overall mobility of women. The linear multiple regression model is employed to explore the association between two or more independent variables for one continuous outcome (dependent) variable. The regression models thereby explain the relationship between the dependent variable and the independent variables that can account for the variations in the dependent variable.

Multiple linear regression helps in determining ‘what proportion of the variance of a continuous, preferably normally distributed, variable is associated with, or explained by, two or more variables, taking into account the associations between those other variables’ (Cramer, 2003: 59). The relation between the dependent and independent variables for the multiple regression models are postulated in the following equation:

\[
Y_i = \alpha_i + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} \ldots + \beta_n X_{ni} + \varepsilon_i \tag{4}
\]

Where \(Y_i\) is the dependent variable and \(X_{1i}, \ldots, X_{ni}\) are the independent variables of the regression model.
The independent variables represent the various factors or causes that explain the ‘effect’ or the changes in dependent variable. By basing the theoretical understanding of the factors or causes, a regression model is fitted which aims to explain the variations in the dependent variable by minimising the errors. Thus using the method of ordinary least squares (OLS), a regression line is fitted which accounts for the fuller explanation of the changes in the dependent variable. To assess the goodness of fit of the multiple linear regression models, I use the coefficient of multiple determination (R squared values). R squared values indicate the proportion of variation in the dependent variable (Y) explained by the independent variables (Xs). I use the t-values or significance tests to analyse whether each independent variable significantly influence the changes in Y. Even if the overall predictive power of the models is not good, one can examine the significance of each factor that explains the variation in Y (Hair and Black, 2007). To check the quality and for validation of the models I have presented the plots of the residuals.

In this study I employ two multiple linear regression models (a) to analyse the determinants of work mobility (using years of informal work as proxy) and (b) to analyse the determinants of overall mobility of women workers. The first multiple regression model aims to investigate the important social and economic factors that determine the number of years of work spent in informal work as a proxy for work mobility, using the survey data of 150 women workers, comprising 75 peeling workers and 75 self-employed fish vendors. In the first model, the dependent variable is the proportion of adult years (above 18 years for all workers) spent on informal work by women workers which I use as a proxy for work mobility. Y (years of informal work) is regressed on the selected independent variables which reflect the respondent’s characteristics, household characteristics, social background and economic background of the women workers. The selected variables are Age, Marital status (Married-1; Single/Widow/separated-0), Own Education (Secondary and below-1; High school and above-0), Land asset (Owns land-1; No land-0), Caste (OBC\textsuperscript{41} -1; Others-0), Lower Spouse

\textsuperscript{41} Other Backward Class is the term which in the Indian constitution article 15(4) and 16(4) refer to classes rather than caste, which are educationally and economically backward which require special privileges from the Government for upliftment along with the other two categories of Scheduled Castes (SCs) and Scheduled Tribes (STs). However after many legal disputes owing to the ‘ambiguity in the definition of ‘classes’ in OBC, the definition now upholds the ‘caste basis to refer to particular social classes which follow traditional occupations. These OBCs occupy the middle position in the social hierarchy, above the STs and SCs. OBCs are also economically, socially and educationally backward and marginalised communities. Among non-Hindus too, the OBC category is identified on the basis of traditional occupation. (Sachar Committee report, 2004-05). Thus fishing community
education (Husband’s education lower than the respondent-1; Husband’s education higher than the respondent-0), the amount of debt, work dummy and Rasch mobility measure.

The second multiple regression model aims to explore the determinants of overall mobility of women workers. For the second model, I use the Rasch mobility measure derived from the Rasch RSM as the dependent variable. The personal, social and economic characteristics of the respondents are the independent variables modelled to determine the significant factors that influence mobility of women workers. The independent variables used in the second model are proportion of (adult) years in informal work, age of the respondent, marital status, own education, asset ownership, caste, low spouse education and work dummy. The dummy variables are coded in the same way as that for the first multiple regression model.

In these multiple regression models I have hypothesised the following to test the models that determine mobility of women workers. Being married with high educational levels of women prevent women from engaging in work in informal pre-processing units especially owing to the social stigma attached to the pre-processing work. There are studies which show that the caste-occupation linkages no longer exist in post independent India (Desai and Kulkarni, 2008) while there are empirical evidences which have disproved such findings. There are occupations in which despite the affirmative actions by the government the caste remains a significant determinant to take up certain occupations (Gang, et al., 2012). Caste\textsuperscript{42} still remains much debated in India and contesting claims are made by studies on its significance.

In the regression models, caste will be one of the dependent variables since traditionally occupations in the fisheries sector belonged to certain communities which are marginalised in Kerala. Therefore, belonging to a lower caste can have a positive association with the number of years of work in low paid peeling work in seafood pre-processing units.

Studies in India have found that the labour market participation by women get significantly affected by marriage and child rearing responsibilities (Jensen, 2012). Hence marital status can affect the engagement of women in paid work outside the household. If along with marriage, the household dependency ratios increase, the women may not be able to seek work

\textsuperscript{42} Caste is defined as a “group of persons characterized by endogamy, hereditary membership, and a specific style of life which sometimes includes the pursuit by tradition of a particular occupation and usually associated with a more or less distinct ritual status in a hierarchical system” (Béteille, 1965:46)
outside the household owing to caring responsibilities of the young and old. While having assets can lead to negative effect on women seeking paid work outside the household, among indebted households the participation of women in paid work can be higher.

Regression analysis can explain and cull out the significant factors that contribute to the occurrence of a phenomenon. It can also include categorical variables as independent variables as done in my study (see details in section 5.1). However the regression models cannot explain the causal mechanisms or combinations of conditions that can result in the occurrence of phenomenon which is a major limitation of regression techniques, and can be resolved with the qualitative analysis presented in the next section.

3.8 Qualitative Analysis

The qualitative methods adopted in this mixed methods study are:

a. Crisp set Qualitative Comparative Analysis (csQCA).
b. Classic Grounded Theory (CGT).

The next section gives the details of the Qualitative Comparative Analysis as a method of qualitative analysis and how the method will be used in this study to analyse pathways to high mobility and TM that is autonomy in mobility of women workers.

3.8.1 Qualitative Comparative Analysis (QCA)

The Qualitative Comparative Analysis (QCA) is a configurational comparative method developed by Charles Ragin (1987) as a comparative case study research approach dealing with small and moderate N datasets using set theoretic methods. The focus of QCA is on the combination of causal conditions which bring about particular social phenomena. It is different from the quantitative regression methods in that it aims to understand the phenomena on a contextual and case-based analysis. It is the combinational causes that bring about the presence or absence of the outcome and there can be multiple combinations which result in the same outcome. Therefore QCA enables a deeper understanding of the social phenomena on a case-oriented manner.

QCA involves an iterative process whereby the researcher needs to have theoretical knowledge of the cases under study and needs to go back and forth to understand the complexity of the causal conditions. Therefore, the QCA approach is ontologically compatible with the critical realist assumptions of multiple levels of reality. “The empirical
conclusion is that QCA-type techniques allow one to learn more out of the data’ (Rihoux and Ragin, 2009, 170). It enriches and supplements the findings by analysing the causal complexities and multiple conditions that can lead to the occurrence of social phenomena. It employs set theoretic methods using Boolean algebra to minimise the combinations and find a solution formula for the presence of social phenomena. QCA emphasizes *equifinality* which means that there can be different combinations of factors which can bring about similar outcomes. Another advantage of QCA is the *asymmetric causality* notion which means that the occurrence and non-occurrence of the phenomena require separate analysis and explanations (Grofman and Schneider, 2009: 666) which can strengthen the analytical complexity of causal patterns which can go completely unnoticed in a regression analysis.

The five important aims of QCA as pointed out by Ragin and Rihoux (2004) are:

i. Data representation in the form of a truth table;
ii. A check of the consistency of the data;
iii. Testing existing hypothesis or theories;
iv. Provides an overview of the basic assumptions of the analysis; and
v. Development of causal hypotheses on the basis of observable patterns in the data.

I have adopted QCA with the main aim of developing and confirming the causal hypothesis on the basis of patterns observed in the data in order to explore the causal complexity to advance the understanding of TM of women workers. The advantages afforded with QCA in this mixed method study are: first, QCA has the advantages of both the ‘case oriented’ qualitative methods and quantitative ‘variable oriented’ techniques; second, QCA uses the Boolean set-theoretic formal language which enriches the techniques of analysis; third, the dialogue between cases and relevant theories in defining conditions and outcomes enables retroduction which suits the critical realist approach which I have adopted in my study; fourth, QCA is context sensitive and is best suited to examine causal complexity of social phenomena in a given cultural context and lastly, in QCA selection of conditions and defining outcomes are done with greatest transparency and it enables cross case comparisons.

In real life empirical research a sequential use of QCA enables methodological triangulation to enrich the study of social phenomena (Rihoux and Ragin, 2009). I have integrated the data by basing the results from the Rasch RSM (person measure of mobility) to define the outcome set of high mobility which includes TM for QCA. The aim here is, thus, to analyse
the complex causal mechanisms that lead to ‘high mobility which includes Transformational Mobility (TM)’ in women engaged in informal work, for which I use configurational comparative analysis using crisp set QCA.

There are three important versions of QCA, namely, crisp-set QCA (csQCA), multi-value QCA (mvQCA) and fuzzy-set QCA (fsQCA). I have employed csQCA as I have more categorical variables in my data and csQCA is best suited for data which can be categorised into dichotomised conditions and confer all the advantages of QCA mentioned earlier. The next section outlines the Crisp-set QCA model that I have adopted in this study.

3.8.2 Crisp-set QCA (csQCA)

Crisp-set QCA is the first QCA technique developed by Charles Ragin and it is the most widely used QCA technique. The key philosophy of csQCA is to ‘[start] by assuming causal complexity and then [mount] an assault on that complexity’ (Ragin, 1987: 10). Using Boolean minimisation algorithms, csQCA helps to ‘simplify complex data structures in a logical and holistic manner’ (Ragin, 1987:8). To define the conditions and outcome, it is necessary to have theoretical understanding of the cases. I have carefully defined and selected the conditions and outcome for the csQCA analysis. I have used the conjunctural theory approach (Amenta and Poulsen, 1994) for the selection of conditions which has made the best use of QCA by capitalising its ability to produce conjunctural results that are causally heterogeneous. On a similar manner, I use csQCA to evaluate the combinations of conditions that can result in an outcome by framing a conjunctural research question ‘what are the configurational pathways that lead to high mobility and TM among peeling workers and fish vendors?’

Defining the causal conditions and the outcome

Only dichotomous variables are introduced in the two models and hence crisp set QCA is adopted for the analysis. For defining causal conditions for the outcome, first I produce a data table (see section 6.1, Chapter VI), in which each case displays a specific combination of conditions which are dichotomously coded (with 0 or 1 values) and an outcome (with 0 or 1

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43 Boolean minimisation refers to the use of algebra to reduce long complex expressions into a shorter parsimonious expression by way of operators like logical ‘AND’ (\(^*\)) , logical ‘OR’ (+)  
44 Conditions are similar to the explanatory variables/independent variables in quantitative analysis; however in QCA independent effects of variables are not analysed. In reality, it is the combination of conditions that result in particular social phenomena. Therefore outcomes are the result of combinations of conditions than single conditions.
values), where 1 denotes the presence of the condition and 0 denotes the absence of the condition. The dichotomised causal conditions which I use for the crisp set QCA model for peeling workers and fish vendors are specified in Sections 6.1 and 6.2 respectively of Chapter VI.

The outcome is also coded similarly, with the presence of outcome denoted by 1 and the absence of outcome denoted by 0. The threshold for dichotomising conditions is critical for a well-defined model. For coding the presence of outcome, ‘high mobility inclusive of Transformational Mobility’ (TM) among women, I have used the Rasch person measures derived from RSM. The cases with high mobility and TM which are above the average measure (average measure is 0 in logit scale) in the logit scale of permissibility of mobility are coded as 1 and those women workers with Rasch person measure below the average in the logit scale are coded as 0, as not having high mobility and TM.

Once the data are coded on the basis of the presence and absence of the conditions and the corresponding outcomes for each case, based on these data the truth table is generated using fsQCA software. The five important steps in the csQCA analysis after specifying the causal conditions of the model are the analysis of the truth table, analysing the necessary and sufficient conditions for the occurrence of outcome, deriving the solution formulae, checking the consistency and coverage of the solution and interpretation of the solution formula. I have explained each of these steps below.

**Truth Table**

The *truth table* is the core of the qualitative comparative analysis which brings out all the logically possible combinations of causal conditions that result in the presence of the outcome. In effect, the truth table disciplines the research process, providing a framework for comparing cases as ‘configurations of similarities and differences while exploring patterns of consistency and inconsistency with respect to case outcomes’ (Ragin, 2008: 25). The truth table helps to (a) bring to the fore analytic similarities and differences between cases and (b) reveal contradictory rows, namely, cases with identical combinations of conditions that show, nonetheless, differences in the outcome and (c) the degree of empirical “spread” in the data, namely, which logically possible combinations of conditions are and are not empirically observed (Grofman and Schneider, 2009). It is based on these complex causal combinations, the solution formula is derived by minimising the configurations to generate a parsimonious formula that will explain the occurrence of the phenomena. *Configuration* is a given
combination of conditions associated with a given outcome. It is a specific combination of factors (or stimuli, causal variables, determinants) i.e. conditions in CCM (configurational comparative method) terminology that produces a given outcome of interest. It is fundamentally different from the independent and dependent variables used in the quantitative regression analysis (see footnote 43 for some conceptual differences).

**Necessity and Sufficiency**

*The necessity and sufficiency conditions* of the causal conditions are necessary to arrive at the solution formula which is parsimonious and at the same time captures the complexity of the causal combinations for the occurrence of the phenomena. In set theoretic terms, the set of cases with a sufficient condition is a subset of the set of cases with the outcome. The set of cases with the outcome is a subset of the set of cases with a necessary condition. That is ‘Sufficient causal condition set’ is an element of Set of cases with the Outcome while the ‘Set of cases with the Outcome’ is a subset of the ‘Set of cases with the Necessary condition’. For all the cases where there is presence of outcome, necessary conditions are present. Necessary conditions are an exception in the occurrence of social phenomenon rather than the norm.

**Solution formulae**

The goal of QCA procedure is to represent the whole of the empirical cases in the most parsimonious expression of the different causal paths leading to the outcome (Delreux and Hesters, 2010). It is important to find the configurations through Boolean minimisation algorithms for both the presence of the outcome and the absence of the outcome since QCA emphasises asymmetric causality. The solution formula are derived from truth table and represented as equations of causal conditions using the Boolean operators of ‘OR’ (+) which displays conjunctive equifinal relationships and ‘AND’ (*) which displays disjunctive equifinal relationships. The Prime Implicants (PI) are derived by the Boolean minimisation process using Quine-McCluskey algorithm.

**Consistency and Coverage**

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45 Refers to reduction of long complex expression into a shorter more parsimonious expression (Ragin, 2009: 35).
The *consistency and coverage scores* of the solution formula can be examined to assess how well the defined respective paths by the solution formula cover the observed cases under investigation which can be considered as measures of the ‘fit’ of the model (Ragin, 2009: 64).

Set-theoretic consistency assesses the degree to which the cases sharing a given condition or combination of conditions agree in displaying the outcome in question and set-theoretic coverage, by contrast, assesses the degree to which a cause or causal combination “accounts for” instances of an outcome (Ragin, 2006: 293). According to Ragin (2006) the measure of the consistency of a crisp-set relation with sufficiency is the proportion of cases with a given cause or combination of causes that also display the outcome. The consistency score is a value between 0 and 1 and should be as close to 1.0 (perfect consistency) as possible. It shows the degree to which the solution or proportion of cases in the configuration as a whole are subsets of the outcome. The higher the consistency score, the higher the proportion of cases with the particular configuration with the outcome i.e. proportion of cases that are consistent with the pattern (Thompson, 2011).

Coverage is a measure of empirical support, that is, it assesses how much of the ‘observed cases’ are covered by the minimal formula and it shows empirical relevance of a causal combination (Ragin, 2008). If there are too many causal configurational pathways, then the coverage is likely to be small. There are three types of coverage reported in solution formula. These are raw coverage, unique coverage and solution coverage. Solution coverage shows how much of the outcome is covered by each solution term and by the solution as a whole. Raw coverage is the proportion of outcome cases that are covered by a given term; unique coverage is the proportion of outcome cases that are uniquely covered by a given term. Solution coverage is the proportion of cases that are covered by all the terms in the solution (Rihoux and Ragin, 2009).

**Interpretation of the minimal formula**

The interpretation of the minimal formulas of QCA is the most important step once the solution formula is derived through Boolean minimisation. Interpretation involves explaining which paths are more important to the outcome and why (Rihoux and Ragin, 2009). One has to take into account the problems of logical remainders which are configurations that do not have empirical instances leading to the limited diversity problem. *Limited diversity* (i.e.

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46 If there are 18 out of 20 cases which have a particular causal combination and also have the outcome, then the consistency score for such a combination of condition is 18/20 is 0.9.
abundance of remainders) is the rule, not the exception, in the study of naturally occurring social phenomena (Ragin and Sonnet, 2005:11). The remainders which are rows with no observed cases can be included in the solution if there is theoretical justification for their inclusion. In the csQCA models for peeling workers and fish vendors, logical remainders are excluded.

3.8.3 Classic Grounded Theory (CGT)

Grounded theory as propounded by Barney G. Glaser and Anselm L. Strauss advocates ‘the discovery of theory from data- systematically obtained and analysed in social research’ (Glaser and Strauss, 1967:1). Grounded Theory “is an inductive, theory discovery methodology that allows the researcher to develop a theoretical account of the general features of a topic while simultaneously grounding the account in empirical observations or data” (Martin and Turner, 1986:141). The theory emerges and is grounded in the data which is in contrast to the logico-deductive theories based on hypothesis testing and verification with pre-conceived models. It allows generation of theory from the data which will ‘fit’ seamlessly the situation being researched and ‘work’ in terms of meaningfully explaining the relevant empirical patterns that emerge from the data (Glaser and Strauss, 1967: 3). A grounded theory is not an authoritative truth claim but a theory, it is not intended to be proven but to be used and modified (Glaser, 1992).

“The logic of grounded theory is to ask two formal questions, they are: What is the chief concern or problem of the people in the substantive area, and what accounts for most of the variation in processing the problem?” (Glaser, 1992:4). By comparing incidents and concepts through constant comparison method, the steps of which are explained in the following section, substantive theory emerges from the data. I have adopted CGT in this study of informal women workers to see whether a substantive theory can emerge from the rich qualitative interview data which I have collected in the cultural context of Kerala. There are several versions of grounded theory and the reasons for adopting CGT in this study is explained below.

Rationale for choice of Classic Grounded Theory (CGT)

There have been multiple versions of grounded theory like Straussian grounded theory (Strauss and Corbin, 1990), constructivist (Charmaz, 2000) and feminist (Wuest, 1995) which are being put to use in the contemporary research field since the discovery of grounded
theory in 1967. However the modifications made in the CGT by later exponents have wide divergences from the original so much so that Glaser has contended that they have fundamental differences in the philosophical stance and methodological approach that they serve an altogether different purpose in comparison to the CGT.

The main difference between the Classic Grounded Theory (CGT)/(Glaserian) and the later modified versions is about the methods of data analysis, the purpose it serves and the epistemological differences in the understanding of the reality for conducting the grounded theory. In the constructivist approach of grounded theory (Charmaz, 2003), telling stories or giving voice to participants aimed at interpretive understanding of subjects lives, the approach has moved further away from the CGT. With assumption of multiple social realities of constructivist grounded theory, it is distinctly different from the CGT. Constructivist data is considered a small part of the data that grounded theory uses and in CGT ‘all is data’ and hence constructivist grounded theory is a misnomer (Glaser, 2012:28).

The grounded theory approach developed by Strauss and Corbin (1990) fundamentally differs from the CGT (see Table 19). The differences as noted by Glaser himself are that the ‘methodology followed by Strauss is full of conceptual description, which focus on forcing theory with super control over the data by preconception and the notion of verification’ (Glaser, 1992:122). Glaser termed Straussian qualitative method of promoting a new method, which he termed “forced, full, conceptual description” (Glaser, 1992: 5). The techniques of data analysis of the CGT is more open and less rigorous in comparison to that of the Straussian method of logical deduction by reducing the data by structured fragmentation through rigorous coding of the data.
<table>
<thead>
<tr>
<th>Table 19: Key Differences in CGT and Straussian Theory</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘Glaserian’ (CGT)</td>
</tr>
<tr>
<td>Beginning with general wonderment (an empty mind) - Discovery</td>
</tr>
<tr>
<td>Emerging theory, with neutral questions</td>
</tr>
<tr>
<td>Development of a conceptual theory</td>
</tr>
<tr>
<td>Theoretical sensitivity (the ability to perceive variables and relationships) comes from immersion in the data</td>
</tr>
<tr>
<td>The theory is grounded in the data</td>
</tr>
<tr>
<td>The credibility of the theory, or verification, is derived from its grounding in the data</td>
</tr>
<tr>
<td>A basic social process should be identified</td>
</tr>
<tr>
<td>The researcher is passive, exhibiting disciplined restraint</td>
</tr>
<tr>
<td>Data reveals the theory</td>
</tr>
<tr>
<td>Coding is less rigorous, a constant comparison of incident to incident, with neutral questions and categories and properties evolving. Take care not to ‘over-conceptualise’, identify key points</td>
</tr>
<tr>
<td>Two coding phases or types, simple (fracture the data then conceptually group it) and substantive (open or selective, to produce categories and properties)</td>
</tr>
<tr>
<td>Regarded by some as the only ‘true’ GTM</td>
</tr>
</tbody>
</table>

Source: Adapted from Onions, 2006: 5.

The techniques adopted for the data analysis in the CGT and the Straussian analysis are compared in the Table 20 given below. The major differences between the CGT of Glaser and the Straussian grounded theory can be seen in the coding, and theory development. While in Glaserian CGT there is continuous seamless emergence of theory from the data, in the Straussian one the theory development is a dense process which leads to a forced emergence of theory.
I have adopted the Classical Grounded Theory (CGT) (Glaserian) in my study in order to allow the substantive theory to emerge from the qualitative interview data of informal women workers. The CGT is grounded in data and is more open without any preconceived notions to verify any hypothesis. Grounded theory research is about abstract problems and the processes and not units (Glaser, 1992: 24), hence CGT is best suited to discover the emergent problems of informal women workers. The CGT which explores ‘basic social processes through ongoing reflection on multiple interactions is based on the fundamental belief that knowledge can be increased by generating new theories rather than analysing data within existing ones’ (Heath and Cowley, 2004:142) reflecting a critical realist philosophical underpinning based on multiple realities, and hence ontologically also, CGT is the appropriate method for my study. While the differences between CGT and the Straussian techniques of data analysis are compared earlier, the following section lays out the procedural steps adopted in this study which is based on the Classical Grounded Theory (CGT).

### 3.8.3.1 The Process of Classical Grounded Theory

The CGT aims for conceptual understanding of the social behaviour that emerges from the data. Conceptualisation of data is the foundation of grounded theory development and the essential relationship between data theory is a conceptual code (Holton, 2010, 22). “GT is a theory of a core category, NOT a description” (Glaser, 2001:206). The process of CGT is summarised in Figure 6.
Coding is the most important step and is a continuous process in the CGT methodology. CGT methodology follows a sequential process starting with open coding of incidents in the data up to the emergence of a core category which can result in emergence of a substantive theory or a formal theory. The researcher has to remain open and should not have any pre conceived codes. The process of CGT is summarised in Figure 6.

To put it in a nutshell, through open coding the aim is to “…look for patterns so that a pattern of many similar incidents can be given a conceptual name as a category, and dissimilar incidents can be given a name as a property of a category, and the compared incidents can be seen as interchangeable indices for the same concept” (Glaser, 1992:40). Categories are the underlying patterns within as set of descriptive incidents, open coding is the initial step of theoretical analysis that pertains to the initial discovery of categories and their properties. (Glaser, 1992:39).

The sequential steps for theory development followed in the CGT method are explained below:
Step 1 - Substantive Coding: Substantive codes are ‘the conceptual meanings given by generating categories and their properties. These codes sum up the patterns found in the substantive incidents in the field’. It starts with open coding and the process of open coding can be done in various ways, namely, line by line analysis, focussing on words, phrases or sentences; paragraphs or sentences or ;entire documents depending on the type of data collected and for Glaserian grounded theory ‘All is data’ (Glaser, 2001). However, too many substantive codes can create confusion and prevent the emergence of core category. Once the core category emerges through open coding, constant comparison and memoing, then the next step is selective coding.

Step 2 - Selective Coding: Selective coding starts only after the discovery of the ‘core variable’ in CGT. ‘To selectively code is to cease open coding and delimit coding to only those variables that relate to the core variable, in sufficiently significant ways to be used in a parsimonious theory’ (Glaser, 1992:75). While selective coding helps emergence of conceptual categories of the substantive area being researched for developing the conceptual theory, it is the theoretical codes which is the next step that enables theory development.

Step 3 - Theoretical Coding: Theoretical codes implicitly conceptualise how the substantive codes will relate to each other as a modelled, interrelated, multivariate set of hypotheses in accounting for resolving the main concern (Glaser, 2005:11). Theoretical codes refer to models and are at a different abstract level in comparison to substantive codes. “The result sought in grounded theory is a small set of highly relevant categories and their properties connected by theoretical codes into an integrated theory” (Glaser, 1992:42).

For the theoretical codes to emerge from the data the researcher has to have theoretical sensitivity to relate the core category with other categories and their properties to integrate the relationships to generate concepts from the data which can relate to models of theory in general (Glaser,1978;1992). What is important according to Glaser is that the theoretical ways of relating substantive codes should be empirical (based in data) and emergent. Glaser has identified many theoretical codes and theoretical coding families that can emerge in grounded theory: 18 in Theoretical Sensitivity, 9 in Doing Grounded Theory and 23 in Theoretical Coding (Glaser, 1978; 1998; 2005). Theoretical completeness is achieved when “….theory explains with the fewest possible concepts, and with the greatest possible scope, as much variation as possible in the behaviour and problem under study…..his theory does explain sufficiently with concepts that fit, work,
have relevance and are saturated” (Glaser, 1978:125). Once the theoretical completeness is achieved through saturation and sorting of memos, the result is substantive theory or formal theory. The emergent theory needs to be set in the context of academic research through comparative literature review.

3.8.3.2 Significance of Core Category and Constant Comparative Method and Memoing in CGT

The main aim of CGT is to discover a theory around a core category (Glaser, 1992) which accounts for most of the variation in the patterns of behaviour and which will be relevant and problematic for the phenomenon. The ‘core category emerges through constant comparisons to generate concepts, theoretical sampling for saturation, memoing and sorting of memos in order to conceptually explain the latent pattern of social behaviour’ (Holton, 2010:30). In CGT emergence of a core category is an indisputable requirement for the emergence of ‘substantive theory’ or ‘formal theory’.

The constant comparative method helps in discovering the latent pattern and it is a process which continues through open coding to selective coding until a theoretical model emerges. The constant comparative method involves ‘comparing incidents applicable to each category; integrating categories and their properties; delimiting the theory and writing the theory’ (Glaser and Staruss, 1967:105). The three main types of comparisons are, ‘incidents to other incidents to establish the underlying uniformity and varying conditions of generated concepts. Then emerging concepts to more incidents to generate new theoretical properties of the concepts and finally the emergent concepts are compared to each other with the purpose of establishing a theoretical model’ (Holton, 2010:28). It is the constant comparison method that ‘causes the accumulated knowledge pertaining to a property of the category to readily start to become integrated resulting in a unified whole’ (Glaser and Strauss, 1967:109).

Memos in CGT are defined as the theorizing write-up of ideas as they emerge, while coding for categories, their properties and their theoretical codes while constant comparisons are being made throughout (Glaser, 1992:108). Memos are continuously made during the whole process of open coding and selective coding and are the theoretical notes about the data and conceptual connections between categories (Holton, 2010:32). The sorting of memos is a basic step required for theory development in CGT. ‘Sorting is the final emergent step in generating theory and the write-up of sorted memos is a theory of a core variable which freezes the ongoing for a moment’ (Glaser, 1992:110). Therefore, with the help of CGT and
by sorting the memos, I discover substantive theories from the data on informal work experiences of peeling workers and fish vendors.

3.9   Limitations of the Study

Owing to the paucity of time and funds, the study is based on a small sample of informal workers. As explained earlier in Section 3.3, the data for the analysis is based on primary data from surveys of informal women workers (N=150) which I conducted in the coastal district of Kollam in the state of Kerala. The survey data is supplemented with qualitative interviews of informal women workers for in-depth, case oriented analysis (N=20) of which 10 are peeling workers and 10 are fish vendors. However, this limitation of sample has been taken into account and I have taken maximum care to improve the representativeness of the sample by sampling workers from 7 peeling sheds spread across the selected village of Saktikulangara. The sampling of fish vendors can also be brought to question since there is a combination of fish vendors who are door-to-door, market based and harbour based vendors. However, the majority of the fish vendors in my sample are door-to-door vendors as they are the most mobile among the women fish vendors.

The study is based on the informal women workers in fisheries in the socio-cultural context of Kerala in India. The social and caste dynamics of the fishing community is context specific. To the extent that the findings are confined to the fishing community in Kerala, it cannot be generalised to other contexts, countries or regions. The focus of the study is on analysing mobility as capability which will confer higher autonomy to women workers within the household. The study is limited to intra-household autonomy in mobility and agency of women. The broader concept of empowerment is beyond the scope of this thesis.

3.10   Ethical Considerations for the Research

The research involved one to one interviews with women workers engaged in informal work in fisheries. The women workers, both fish vendors and peeling workers, belong to marginalised communities and are vulnerable workers who mostly belong to below poverty line households. The analysis of autonomy of women workers within the household involved sensitive questions such as the presence of domestic violence, decision making within household regarding children’s education and family size. As the study involved personal questions, I took informed consent from the participants before the interviews. Without the consent of the participant no information has been used or published. Confidentiality and anonymity of the participants are given due consideration while undertaking this study. The
survey questionnaire had a participant information sheet which informed the survey participant about the research objectives, the purpose of survey and the contact details in case further information was required by the participant. The research study was undertaken after getting all necessary ethical clearance from the University Research Ethics Committee. I have followed and adhered to all the ethical guidelines provided by the University while conducting the research study.

3.11 Summary of the Chapter

In this chapter on the methodological framework, first I have examined the rationale for mixed methods research in this study of peeling workers and fish vendors in the fisheries sector in Kerala. I have explained how the simultaneous use of quantitative and qualitative analysis has facilitated elaboration, in-depth understanding and sampling of cases. Secondly, I have given the details of the sampling design of my study for the survey of informal women workers. The profile of the village, the seafood processing industry and the informal workers further illuminates the location and the context of the study. Thirdly, I have explained the tools used for data collection using the survey questionnaire and in-depth qualitative interviews. Fourthly, in this chapter I explain the two important quantitative methods that I use to analyse the survey data on informal women workers. The two methods of quantitative analysis that I use in my study consists of (i.) Rasch RSM to construct a measuring scale of permissibility of mobility and (ii.) Multiple regression analysis to analyse the factors that determine work mobility and overall mobility of women workers. Later, I have given the details of the methods I adopt for the qualitative analysis. The methods of qualitative analysis are (i.) the crisp set Qualitative Comparative Analysis (QCA) and (ii.) the Classic Grounded Theory (CGT). Finally I have pointed out the limitations of the study and highlighted the ethical considerations which I have kept in mind throughout the research study, especially while interviewing vulnerable workers in Kerala.

The next chapter will examine the first research question of my thesis, as to whether mobility can be measured as a single construct for women workers. By using the Rasch analysis for constructing the measurement scale of permissibility of mobility, the chapter will explore the multiple domains of mobility as experienced by fish vendors and peeling workers in fisheries.
Chapter IV: Measurement of Mobility of Women Workers: An Application of Rasch Model

Mobility or the freedom to move has multiple domains. In this chapter I examine various domains of mobility as experienced by women workers in the cultural context of Kerala, India. To understand and measure the mobility of informal women workers, namely peeling workers and fish vendors, I construct a measurement scale of mobility using the survey data collected on mobility of women workers.

This chapter is organised as follows. First, it briefly examines the concept of transformational mobility as capability. Second, it gives the details of the data from survey questions and a brief overview of the method of Rasch RSM adopted in the construction of the measurement scale of mobility. Third, it explains the construction of the scales of mobility for all workers based on the survey data using RSM. Fourth, the validation of the measurement scale for all informal workers based on RSM is performed. Fifth, the scales of permissibility of mobility are constructed separately for peeling workers and fish vendors, followed by the discussion of the validation of the scales and results. Sixthly, I discuss the results of the Rasch models and the findings based on the mobility scales. Lastly, following the mixed method design and for better exposition through triangulation of data, I juxtaposition the survey responses of women workers to the autonomy ladder question with the Rasch measure of mobility to establish the linkages between TM and household autonomy. The concluding remarks summarise the results of the scale of permissibility of mobility and TM of peeling workers and women fish vendors.

4.1 Transformational Mobility: Constructing a Measurement Scale of Mobility

‘A person’s capability to achieve functionings that he or she has reason to value provides a general approach to the evaluation of social arrangements, and this yields a particular way of viewing the assessment of equality and inequality’ (Sen, 1992:5). Thus analysing mobility as capability as experienced by the women workers can reflect the extent of inequalities in social arrangements in the progressive state of Kerala. As examined earlier in Chapter II, the theoretical underpinning of my study views mobility associated with work as a functioning which enables women to improve her movements in other domains of mobility in the community and society at large. Whether women in different types of informal work in
fisheries are able to have similar mobility levels in various domains of mobility is a pertinent question to analyse mobility as capability. As mentioned earlier, TM is the freedom and ability to move outside the household without constraints from others. It is a state of ‘non-domination’ as regards mobility is concerned. When there are constraints on mobility, it stifles the wellbeing freedoms of women and by measuring the mobility of women and analysing TM, it advances the understanding of mobility, work and autonomy and the intersectionality in the context of gender.

I analyse mobility associated with work from the capability approach perspective of Sen which enhances the real opportunities that the work can offer in improving the overall mobility of women which in general has societal constraints. As noted in Chapter II, the Capability Approach framework helps in analysing mobility as capability for the first time in the development studies discipline. I intend to examine mobility for its own intrinsic and instrumental values to improve women’s autonomy. By analysing TM as capability, the CA framework thus helps in focusing on the ends of development which is essentially wellbeing rather than the means in terms of employment and income generated through informal work.

‘Functioning’ in the capability approach framework is the achieved beings and doings reflecting the state of beings and doings. The women workers are able to move outside the household for informal work owing to their necessity of survival. Mobility associated with informal work is a survival strategy and has arisen due to the additional worker effect. Most of the fisher households are low income households wherein the women supplement the incomes to meet all the household expenses. As noted in the data description in methodology section of the thesis, the majority of the households belong to the below poverty line category. Mobility associated with work for women can be viewed as just functioning which is just ‘being mobile’ to pursue work. For all other movements outside the household whether the women workers require permission from the patriarchal heads of households and whether they have the real freedoms as capability which enhances opportunities are questions that I seek to answer in the following sections of this chapter.

Viewing mobility as capability is about the freedom to make decisions in matters that affect their own movements outside the household. Along with work which enables women to move

47 ‘Added worker effect’ (Lundberg, 1985) referred to the temporary increase in labour supply by women owing to their husbands becoming unemployed. However, in the context of developing countries, women in low income households supplements income of the household owing to the ‘irregular’ work by their husbands. Women as additional workers in the household adds to the household income and this additional worker effect is not temporary.
outside the household in work spaces, there are community, social and personal spaces which are domains of mobility that can facilitate greater interactions with the outside world and can improve women’s autonomy (decision making) and agency. By constructing a scale of permissibility of mobility of informal women workers I examine whether all the domains of mobility are equally permissible for women workers in the cultural context of Kerala.

The instrumental freedoms improve the capabilities and help people to pursue things which they value in life and improve their well-being. Work mobility associated with informal work allows movement outside the household though it is essentially due to survival needs. However the informal work mobility does not enhance the freedoms to move for women. It is in this context that ‘seeing opportunity in terms of capability allows us to distinguish appropriately between whether a person is actually able to do things she would value doing and whether she possesses the means or instruments or permissions to pursue what she would like to do (her actual ability to do that may depend on many contingent circumstances)’ (Sen, 2005:153). Therefore whether the instrumental value of mobility associated with informal work enables women workers to achieve freedom to move as a capability by expanding their freedoms in the broader sense is a vital question that needs empirical investigation. With this objective, I aim to construct a measure of permissibility of mobility by adopting the Rasch RSM. Such a measure will help in identifying the degree of permissibility of mobility of the peeling workers and the fish vendors in fisheries. The scale can also highlight which domains of mobility are least permissible for women workers.

The next section briefly explains the construction of the measurement scale of mobility using the Rasch RSM.

### 4.2 Measurement of Mobility: A Rasch Model Analysis

I construct a measure of mobility of women by means of a ‘scale of permissibility of mobility of women’ based on the Rasch RSM which is explained in detail in section 3.7.1 in chapter III. The significance of the study setting is also explained in the methodology section. The data for the construction of the measure are drawn from the survey of 150 women workers. As mentioned in the sample description of methodology chapter, the survey questions were administered to 75 peeling workers and 75 fish vendors. While the peeling workers are unit (peeling shed) based, the women fish vendors are either harbour-based, market based or door-to-door vendors. The comparative analysis of mobility of these informal women workers in
fisheries can also throw light on the influence of the work settings and nature of work on mobility levels of women.

The ‘mobility’ or freedom of movement of women workers is measured using a set of questions which assessed whether the women needed permission to go outside the household for various activities. The domains of mobility are categorised as movement outside the household for work, work related activities, market, doctor, natal home visit, entertainment, social and cultural meetings. The responses are in a Likert scale with four response categories namely, Always = 1, Sometimes = 2, Rarely = 3 and Never = 4. The scoring for the responses are coded as ‘1 for Always’ require permission to ‘4 for Never’ required permission to go outside the household. Women who report ‘Never’ require permission to move outside the household have greater levels of permissibility since their decisions for movements are not controlled by anyone else. Intuitively, the scoring thus points to higher scores in the Likert scale, reflecting greater permissibility for mobility (see section 3.7.1 for the details of Rasch RSM).

First, I will present the validation of the measurement scale, to check

i. how accurately the data fit the model by using item statistics as indicators of construct validity (Pampaka et.al., 2011)

ii. Rating scale functioning of the category scale using the category fit statistics

iii. whether the scale of mobility is reliable and meaningful to be constructed based on Rasch RSM based on the survey data on mobility by using reliability indices

iv. for unidimensionality using principal component analysis

v. differential item functioning (DIF) to check for group invariance.

The next section explains the validation of the scale of permissibility of mobility based on Rasch RSM.

4.3 Validation and presentation of the scale of permissibility of mobility of all workers

The validation of the measurement scale of mobility is an important step in the Rasch RSM since the main aim of constructing the scale is to measure the latent trait of the women workers in such a way that the items or domains of mobility used to measure the trait should not have any ‘item bias’ or domain bias’. The main steps for validation of the measurement scale, as explained in detail in methodology Section 3.7.1 in Chapter III are followed in the case of scale of permissibility of informal workers. The Rasch RSM results for the model
generates statistics which help us to check the fit of the model with the data, the functioning of the rating scale structure, and the reliability indices of the model. The statistics also allow checking whether the scale measures a unidimensional construct by analysing the PCA of standardised residuals. These statistics and guidelines are essential for measurement stability and measurement accuracy (Linacre, 2004). I examine each one of the statistics for the RSM model for informal workers in the following sections.

4.3.1 Item fit statistics

The item measure and fit statistics of the scale of permissibility of mobility of all 150 workers are shown in Table 21. The item fit statistics are important for assessing the construction and calibration of the measuring scale (Wright and Masters, 1982:109). Out of the 10 items in the scale of permissibility of mobility, seven items have productive infit and outfit mean square values which fit the model well.

<table>
<thead>
<tr>
<th>Item entry</th>
<th>Number and item domains of mobility for which permission is sought</th>
<th>Total Score</th>
<th>Measure</th>
<th>Model S.E.</th>
<th>Infit MNSQ</th>
<th>Outfit MNSQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(Going to Work) GTW</td>
<td></td>
<td>537</td>
<td>-3.92</td>
<td>0.22</td>
<td>1.24</td>
<td>0.87</td>
</tr>
<tr>
<td>2 (Work related activities) WRA</td>
<td></td>
<td>533</td>
<td>-3.74</td>
<td>0.21</td>
<td>1.09</td>
<td>0.78</td>
</tr>
<tr>
<td>3(Going to market) GTM</td>
<td></td>
<td>475</td>
<td>-1.97</td>
<td>0.16</td>
<td>1.01</td>
<td>0.78</td>
</tr>
<tr>
<td>4(Going to Doctor) GTD</td>
<td></td>
<td>362</td>
<td>0.41</td>
<td>0.14</td>
<td>0.71</td>
<td>0.83</td>
</tr>
<tr>
<td>5 (Going to religious meetings) RM</td>
<td></td>
<td>430</td>
<td>-0.97</td>
<td>0.14</td>
<td>1.45</td>
<td>1.77</td>
</tr>
<tr>
<td>6 (Social and cultural ceremonies) SCM</td>
<td></td>
<td>347</td>
<td>0.71</td>
<td>0.14</td>
<td>0.94</td>
<td>1.31</td>
</tr>
<tr>
<td>7 (Natal home visit) NHV</td>
<td></td>
<td>315</td>
<td>1.41</td>
<td>0.15</td>
<td>0.92</td>
<td>1.52</td>
</tr>
<tr>
<td>8 (To meet friends) TMF</td>
<td></td>
<td>270</td>
<td>2.58</td>
<td>0.17</td>
<td>0.54</td>
<td>0.44</td>
</tr>
<tr>
<td>9 (Going to Cinema/entertainment) GTC</td>
<td></td>
<td>253</td>
<td>3.14</td>
<td>0.19</td>
<td>0.71</td>
<td>0.56</td>
</tr>
<tr>
<td>10 (Going to election/political meetings) GEM</td>
<td></td>
<td>278</td>
<td>2.35</td>
<td>0.17</td>
<td>1.27</td>
<td>1.10</td>
</tr>
<tr>
<td>MEAN</td>
<td></td>
<td>380</td>
<td>0.00</td>
<td>0.17</td>
<td>0.99</td>
<td>1.00</td>
</tr>
<tr>
<td>SD</td>
<td></td>
<td>101.9</td>
<td>2.43</td>
<td>0.03</td>
<td>0.27</td>
<td>0.40</td>
</tr>
</tbody>
</table>

Source: Based on Rasch RSM results using Winsteps software.

Two domains of mobility items, namely, RM (going to Religious Meetings) and TMF (To Meet Friends) have fit statistics at 1.77 which is too high and 0.44 which is too low respectively. As mentioned in methodology (3.7.1.), small values of infit/outfit are not a major concern and I will focus mainly on high values which can be problematic for measurement. Moreover, the focus is more on infit values and outfit is more sensitive to
outliers; except these two misfit items in measurement scale, the other items have shown good fit in the model.

The domains of mobility which are misfits for the data are RM (going to Religious Meetings), NHV (Natal Home Visit) and TMF (To meet friends). The infit and outfit statistics are at 1.45 and 1.77 for RM, which are too high. High infit and outfit mean squares reflect unexpected responses, as going to religious meetings is a domain of mobility which in the case of some households, it may be an outing for the whole family to visit the Church. In my sample of women workers, the majority of the women belong to Christian community where visiting the Church on Sundays is a family outing. That may be the reason why the item is a misfit. On other days if women have to visit the Church or any other religious meeting there is an element of permissibility required; so the item cannot be removed entirely from the scale of permissibility. Moreover for women workers who are Hindus, going to religious meetings and visiting temples are not on designated days neither are the visits a family outing, so retaining the item in the scale is not necessarily a cause of concern. Religious denomination of respondents can be a useful basis for discrimination which is not dealt with in this study but can be explored in further research.

For NHV the infit mean square value of 0.92 indicates a good fit, however the outfit MNSQ is high at 1.52 which indicates the outliers’ effect on this item fit. In this case of informal workers, this may have risen due to the responses from the widows and separated peeling workers in the sample. For widows and separated women visiting their natal home may not require permission as in the case of married women. In the case of married women too, if their natal homes are in the same village, the permissibility to visit home may not be difficult in comparison to those whose natal homes are outside the village of marital residence. These actual differences in responses of women workers may have made the outfit mean square of the domain of NHV very high.

The domain of mobility of TMF with outfit MNSQ 0.44 is too low indicating item redundancy. TMF is a very personal domain of mobility. The domain is reflecting redundancy since it may be getting captured along with GTC because meeting friends often becomes an opportunity for entertainment like cinema. However removing the domain ‘TMF’ from the scale of permissibility has not yielded improved fit for the model. The item TMF is retained in the measurement scale of permissibility as it is one the most difficult domains to get permission and will be useful for the measurement of mobility.
It can be argued that the misfit items are indicators which help us to re-check and understand the theoretical arguments which frame the empirical measurement scale (Bond and Fox, 2001:184). If the misfit items are far less in number in comparison to the large number of items which fit the model, the measurement scale can be reliable and valid. In this case, except these two misfit items in measurement scale, the other items have shown good fit in the model. Further analysis to check for dimensionality and DIF (Differential Item Functioning’) in section 4.3.3. helps to check further these issues and capture any potential item bias which may be present in these domains of mobility (RM, TMF, NHV) of women workers and thus explain the misfit. Before that, next, I look at the category statistics.

4.3.2 Category fit statistics

The diagnostic information generated by the WINSTEPS software helps in analysing the rating scale structure of the RSM. The category fit statistics is the criterion to check the functioning of categories for the measurement scale. The category fit statistics for the scale of permissibility for all workers is shown in Table 22. It reflects that the fit of each rating scale category has met the criterion of mean square statistics less than 2.0 (Linacre, 1999). The outfit mean squares greater than 2 indicate more misinformation which compromises the accuracy in measurement.

<table>
<thead>
<tr>
<th>Category Label</th>
<th>Observed count</th>
<th>Observed Average</th>
<th>Threshold</th>
<th>Infit Mean square</th>
<th>Outfit Mean square</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>531</td>
<td>-3.27</td>
<td>None</td>
<td>0.87</td>
<td>0.90</td>
</tr>
<tr>
<td>2</td>
<td>194</td>
<td>-.86</td>
<td>-1.20</td>
<td>0.91</td>
<td>0.79</td>
</tr>
<tr>
<td>3</td>
<td>219</td>
<td>.83</td>
<td>-.21</td>
<td>0.90</td>
<td>0.86</td>
</tr>
<tr>
<td>4</td>
<td>556</td>
<td>3.43</td>
<td>1.41</td>
<td>1.28</td>
<td>1.87</td>
</tr>
</tbody>
</table>

Note: Category: 1-Always; 2- Sometimes; 3- Rarely; 4-Never
Source: Based on Rasch RSM results using Winsteps software.

The well-functioning rating scale structure is corroborated by the probability curves for the scale categories (see Figure 7). In the case of the model for the ‘scale of permissibility of mobility’ of all workers, the average measures and the threshold estimates increase across all four category scales. It reflects good fit for the category structure with rating scale category thresholds increasing with the values of the rating scale categories (Wolfe and Smith, 2007:210). The intersections of the probability curves are the thresholds with the first threshold being -1.20 where probability curves of 1 and 2 intersect at x-axis and each curve
has distinct peak. The probability curves thus reflect a well-functioning rating scale structure for the model.

**Figure 7: Probability Curves for the Rating Scale for all Workers**

![Probability Curves](image)

Source: Own survey data and analysis using Winsteps software.

### 4.3.3 Reliability indices of the model for informal workers

To assess the overall reliability of the models, the Rasch RSM advocates specific fit statistics which can be used to assess the reliability of the scale developed to measure ‘permissibility of mobility’ based on the score responses to the 10 questions. Table 23 gives the reliability indices for both the persons and the items (domains of mobility) for the Rasch model for the informal workers. The reliability indices for the model for all workers is at 0.90 which shows that the scale is able to differentiate the persons on the basis of their mobility dimension.
Table 23: Summary of 122 Measured (Non Extreme) Person

<table>
<thead>
<tr>
<th></th>
<th>Total Score</th>
<th>Count</th>
<th>Measure</th>
<th>Model SE</th>
<th>Infit MN SQ</th>
<th>ZSTD</th>
<th>Outfit MNS Q</th>
<th>ZS TD</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEAN</td>
<td>24.4</td>
<td>10</td>
<td>-0.9</td>
<td>0.58</td>
<td>1.01</td>
<td>-0.2</td>
<td>0.97</td>
<td>0</td>
</tr>
<tr>
<td>P.SD</td>
<td>6.8</td>
<td>0</td>
<td>2.13</td>
<td>0.08</td>
<td>1.03</td>
<td>1.3</td>
<td>1.53</td>
<td>0</td>
</tr>
<tr>
<td>S.SD</td>
<td>6.8</td>
<td>0</td>
<td>2.14</td>
<td>0.08</td>
<td>1.04</td>
<td>1.3</td>
<td>1.53</td>
<td>0</td>
</tr>
<tr>
<td>MAX.</td>
<td>39</td>
<td>10</td>
<td>5.24</td>
<td>1.08</td>
<td>6.98</td>
<td>4.7</td>
<td>9.9</td>
<td>3.8</td>
</tr>
<tr>
<td>MIN.</td>
<td>13</td>
<td>10</td>
<td>-4.26</td>
<td>0.51</td>
<td>0.1</td>
<td>-2.4</td>
<td>0.07</td>
<td>-1.5</td>
</tr>
<tr>
<td>REAL RMSE</td>
<td>0.69</td>
<td>True SD</td>
<td>2.01</td>
<td>Separation</td>
<td>2.93</td>
<td>Person Reliability</td>
<td>0.9</td>
<td></td>
</tr>
<tr>
<td>MODEL RMSE</td>
<td>0.59</td>
<td>True SD</td>
<td>2.05</td>
<td>Separation</td>
<td>3.47</td>
<td>Person Reliability</td>
<td>0.92</td>
<td></td>
</tr>
<tr>
<td>S.E. of Person Mean</td>
<td>0.19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Based on Rasch RSM for pooled data of peeling workers and fish vendors

The separation indices reported in Table 23 show the spread of persons and items. Both the person separation and item separation indices of the model reveal that there is sufficient discrimination of persons and items made by the scale of permissibility of mobility. The separation indices show that the scale differentiates persons on the basis of the latent trait being measured by the scale of permissibility of mobility.

In the next section the validation of the measurement scale of permissibility of mobility is performed using the test of unidimensionality.

### 4.3.4 Unidimensionality test

Along with fit statistics, I have used the Principal Component Analysis (PCA) of the standardised residuals to check if there are sub dimensions or secondary dimensions in the data which is incompatible with the Rasch model. PCA of residuals helps to verify whether the latent trait of mobility is captured by the model and that the residuals do not exhibit any trait other than the single dimension of ‘mobility’. Thus PCA helps to verify the unidimensionality assumption along with the fit statistics. WINSTEPS programme generates the PCA of residuals and the results are shown in Table 24 for the informal workers models.
### Table 24: Standardised Residual Variance of the Rasch RSM for all Informal Workers

<table>
<thead>
<tr>
<th></th>
<th>Empirical (%)</th>
<th>Modeled (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total raw variance in observations</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Raw variance explained by measures</td>
<td>80.9</td>
<td>80.6</td>
</tr>
<tr>
<td>Raw variance explained by persons</td>
<td>37.5</td>
<td>37.4</td>
</tr>
<tr>
<td>Raw variance explained by items</td>
<td>43.4</td>
<td>43.2</td>
</tr>
<tr>
<td>Raw unexplained variance (total)</td>
<td>19.1</td>
<td>19.4</td>
</tr>
<tr>
<td>Unexplained variance in 1st contrast</td>
<td>5.6</td>
<td>29.4</td>
</tr>
</tbody>
</table>

Source: Based on Rasch RSM results for all informal workers

The Rasch dimension explains 80 percent of the variance in the case of informal workers model. The unexplained variance in the first contrast is slightly higher at 5.6 percent, however the variance explained by the items is at 43 percent which is good in terms of the model capturing the latent trait or dimension in the data. From the standardised residual variance, it can be seen that there is no (dominant) secondary dimensions and the Rasch model is able to measure the latent trait of mobility using the data. Moreover, the Rasch person measure derived from the single scale of permissibility of mobility for pooled data is used as the dependent variable for the multiple regression model to analyse the determinants of mobility of women workers (see section 5.4).

#### 4.3.5 Differential item functioning (DIF)

To check for the differences between the groups of workers of interest in this study, namely fish vendors and peeling workers across the various domains of mobility, I employed the technique known as ‘Differential Item Functioning’ (DIF). The DIF measure for persons show wide difference between fish vendors and peeling workers (3 logits difference) in the case of GTW and WRA. Domains of GTW and WRA require higher level of permissibility for peeling workers. This is shown in the following DIF Figures 8 and 9 for all the 10 items including work mobility.
To check if these differences in measure of the domains of mobility are statistically significant, the DIF ‘t-value’ chart can be seen in Figure 9 given below.
The ‘t values’ for the DIF size measure show that the DIF measure sizes are statistically significant between the two groups of workers in the mobility domains of GTW, WRA, and NHV with t values beyond the confidence limits, the limit being 2, values beyond 2 are considered problematic.

There is presence of the differential item functioning between the two groups of workers in the case of work mobility items and other domains of mobility (GTW, WRA and NHV- 3 domains of mobility). The reasons for misfit in the item fit statistics as regards RM, NHV and TMF (see Table 21) may be owing to the significant differences between the two groups of workers in their domains of mobility. The DIF shows that the differences between the groups of workers are significant especially in terms of their work mobility as indicated by GTW and WRA. The peeling workers and self-employed fish vendors are likely to have significant substantial differences in the work mobility, as vending entails greater mobility across public spaces. However, the domains of GTW and WRA cannot be removed from the scale measure since work mobility is a critical component of the overall mobility of women workers. Therefore these items or domains of mobility are retained in the scale measure of mobility because of their importance in discriminating women workers.
On the basis of the DIF results that shows 3 items behaving significantly different for the two groups of women workers, it will be worthwhile if the scale of permissibility of mobility is constructed and validated (i.e. calibrated) separately as well for peeling workers and fish vendors. Moreover, this separate calibration is needed to define the groups for the csQCA which I perform to analyse the causal pathways to high mobility and TM for peeling workers and fish vendors (See Chapter VI) as mentioned in the methodology Chapter III. To generate the Rasch measures of mobility for dichotomising the outcome into presence and absence codes (0 and 1) for the outcome set of high mobility and TM for the csQCA models of peeling workers and fish vendors, separate scales of permissibility of mobility are constructed.

In the next section, I present the visual representation of the results of the logit scale of measurement mobility of women workers (pooled data) based on Rasch RSM (Rating Scale Model) which is the ‘variable map or the person item map of all informal workers.

### 4.3.6 Measurement Scale of Permissibility of Mobility of informal women workers

The first model for constructing the scale of permissibility of mobility of all informal workers is performed by analysing and calibrating the response scores given by all the 150 informal workers (pooled data of peeling workers and fish vendors) of the sample. For constructing the scale of permissibility of mobility the WINSTEPS 3.9 software is used. The visual representation of the model is the variable map, also known as person item map. The person-item map or variable map gives a visual representation of the hierarchy of the workers based on their permissibility of mobility levels and the hierarchy of the domains of mobility/survey items (questions on mobility in various spaces) based upon the degree of ease for permissibility, along either sides of the interval scale drawn in the middle of the map.

Variable maps serve as a visual representation of persons and items along the same logit scale which is in the middle of the map (see Figures 10 and 11) based upon which items and persons are hierarchically placed in the map. The items or the domains of mobility which are the easiest to get permission are at the bottom of the hierarchy on the right side of the scale and the items or domains of mobility that are the most difficult to get permission are at the top of the scale within the domains of mobility hierarchy on the right side. On the left hand side of the logit scale (see Figure.10), is the distribution of the informal workers, those with the highest measure of the latent trait are at the top of the distribution of persons and the those with the lowest measure of the latent trait are at the bottom of the distribution.
The mean of the items is indicated in the person-item map by the letter ‘M’ on the right side of the logit scale in the map and the mean of the persons are indicated by the letter “M” on the left side of the scale. Standard deviations are shown on the variable maps by the letter “S” which indicate one standard deviation and by the letter “T” for two standard deviations. Figure 10 and Figure 11, give the variable maps of the informal workers.

Figure 11 gives the notation for the types of informal workers, denoted by PW for peeling workers and FV for fish vendors. It can be seen that the permissibility for work mobility is also constrained more for PW while for FV work mobility is not constrained which reflects the nature of work (with more PW towards the bottom of the logit scale in comparison to FV). It is noticeable that some of the peeling workers (PW) have very low levels of permissibility levels (see Figure 11) even for work related activities as they are much lower in the scale. This may be attributed to the ‘social stigma’ attached to the peeling work, whereas none of the fish vendors in the sample are located at the lower end of the scale of permissibility. The gap in the scale of permissibility at the lower end occurs because of this disparity in the nature of the two types of work- self- employed fish vending which has a better status in comparison to peeling work.

As the variable map shows the categorisation of persons and items on the basis of permissibility of mobility along the logit scale, it becomes evident that GTC, TMF and GEM are the domains of mobility for which permissibility is very difficult to obtain for all the workers (see Figure 11). GTW and work related mobility have ease of getting permission as they are located towards the lower end of the scale on the right hand side where the domains of mobility are plotted in the map. On the left hand side where the persons are plotted, Figure 11 gives the break up on the basis of the type of worker.
Figure 10: Person Item Map of Informal workers: Categorisation of Domains of Mobility

Domains of mobility with most constraints

Domains of mobility with medium level of constraints

Domains of mobility with least constraints

Source: Own survey data and analysis using Winsteps software.
Source: Own survey data using Winsteps software. PW denotes peeling workers; FV denotes Fish vendors.
The work spaces which are necessary for survival have very high level of permissibility for mobility are located at the bottom end of the scale on the right side. ‘Going to work’ (GTW) and ‘work related activities’ (WRA) do not require permission in the case of majority of women workers hence work has highest level of permissibility in the scale in the case of both peeling workers and fish vendors (see Figure 11).

Table 25 given below derived from the variable map of informal workers shows the level of permissibility of mobility and the domains of mobility of all informal women workers based on the results of the scale of permissibility of mobility. As is evident the mobility of women workers have the least constraints in the case of work mobility and it is least permissible for women workers to pursue entertainment, political and personal visits.

<table>
<thead>
<tr>
<th>Table 25: Level of Permissibility of Mobility and the Domains of Mobility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Permissibility levels based on scale of permissibility of mobility</strong></td>
</tr>
<tr>
<td>Most constraints (Entertainment and Political purposes)- Least Permissible – (difficult to get permission)</td>
</tr>
<tr>
<td>Medium level of constraints</td>
</tr>
<tr>
<td>Least constraints- Work Mobility- Highly permissible- (low level of permission required)</td>
</tr>
</tbody>
</table>

Source: Based on the variable map for all informal workers; Own survey data using Winsteps software.

For further validation of this scale and the hierarchical categorisation of domains of mobility, I have also analysed the qualitative interview data to substantiate the findings on the level of permissibility of mobility which is explained below.

It may be noted from the variable map (see Figure 11) that peeling workers do face constraints even for work mobility (PW seen at the bottom end of the scale towards the left) which can be attributed to the social stigma attached to the work. In this context, Leela, a 46 years old peeling worker comments on her inability to move around without permission and her thoughts on gendered mobility:

“I cannot even go to work without his (husband) permission. Initially he opposed a lot from joining peeling work, now because of the need for money to meet children’s education, he has given permission. However, he is always suspicious as peeling...
Women face highest level of constraints in the case of mobility for meeting personal needs of entertainment, meeting friends and movements with political purposes like election meetings. Social and cultural meetings, religious meetings, visits to the doctor are domains of mobility of women which have only medium level of permissibility requirement. Therefore social spaces like religious meetings and places where women can be visible in public spaces, the permissibility is better in comparison to spaces for entertainment and closed meetings for political purposes. In the case of religious meetings, Reeta, a 57 years old fish vendor says:

“My husband doesn’t oppose my attending the Church on Sundays. Sometimes he joins with the family to go to the Church. But for other visits, to my friends or chit fund gathering, I have to seek his permission” (Interview transcript)

In another instance, Sangeetha, a peeling worker, who is 39 years old, comments on mobility and the constraints that she faces as follows:

“I don’t get time to meet my friends, even if I wanted to, my husband will not give permission. He feels that I should always stay at home and that interacting with others will corrupt me somehow. So I just go out to work because we need money and for all other movements outside the household, I have to take permission from him.” (Interview transcript)

The women workers at the top of the scale are the ones with high mobility levels (having TM) (Figure 10), and do not face constraints on mobility in domains which have most constraints like GTC, TMF. Those at the bottom of the scale have low levels of mobility. In the scale of permissibility of mobility, 63% of informal women workers surveyed are at below average measure of mobility reflecting gendered and constrained mobility among women workers.

The validation of the measurement scale of permissibility of mobility of all informal workers is performed using the differential item functioning in section 4.3.5. As explained earlier, it is evident from DIF analysis that there are certain differences between fish vendors and peeling workers which necessitate the construction of two separate scales for peeling workers and fish vendors.
The next section presents the calibration of the measurement scale of mobility of peeling workers and the variable map of peeling workers.

4.4 **Separate calibration of the measurement scales of two groups of informal workers**

In this section, I have examined the validation and construction of the two separate measurement scales of permissibility of mobility for peeling workers and fish vendors.

4.4.1 **Validation and presentation of scale of permissibility of mobility of peeling workers**

The RSM results for the scale of permissibility of mobility of peeling workers are shown in Table 26. It gives the item measure and fit statistics for the scale of permissibility based on the 10 item responses of the 75 women peeling workers. The infit and outfit mean square values greater than 1.4 are interpreted as having less compatibility with the model than expected. The item fit statistics for the scale of permissibility of peeling workers for all the 10 items have good fit with outfit and infit MNSQ less than 1.4 reflecting high level of measurement accuracy and compatibility of the data with the Rasch RSM adopted to construct the scale of permissibility to measure mobility of women workers. (RM is the only item which has high infit MNSQ which has been examined earlier in section 4.3.1.)

<table>
<thead>
<tr>
<th>Item entry</th>
<th>Number and item domains of mobility for which permission is sought</th>
<th>Total Score</th>
<th>Measure</th>
<th>Mode</th>
<th>Infit MNSQ</th>
<th>Outfit MNSQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(Going to Work) GTW</td>
<td>239</td>
<td>-3.2</td>
<td>0.3</td>
<td>1.15</td>
<td>0.79</td>
<td></td>
</tr>
<tr>
<td>2 (Work related activities) WRA</td>
<td>239</td>
<td>-3.2</td>
<td>0.3</td>
<td>1.15</td>
<td>0.79</td>
<td></td>
</tr>
<tr>
<td>3(Going to market) GTM</td>
<td>222</td>
<td>-2</td>
<td>0.2</td>
<td>0.8</td>
<td>0.61</td>
<td></td>
</tr>
<tr>
<td>4(Going to Doctor) GTD</td>
<td>183</td>
<td>0.2</td>
<td>0.2</td>
<td>0.89</td>
<td>0.93</td>
<td></td>
</tr>
<tr>
<td>5(Going to religious meetings) RM</td>
<td>204</td>
<td>-1</td>
<td>0.2</td>
<td>1.72</td>
<td>1.98</td>
<td></td>
</tr>
<tr>
<td>6 (Social and cultural ceremonies) SCM</td>
<td>181</td>
<td>0.3</td>
<td>0.2</td>
<td>1.1</td>
<td>1.27</td>
<td></td>
</tr>
<tr>
<td>7(Natal home visit) NHV</td>
<td>179</td>
<td>0.5</td>
<td>0.2</td>
<td>1.15</td>
<td>1.19</td>
<td></td>
</tr>
<tr>
<td>8(To meet friends) TMF</td>
<td>149</td>
<td>2.5</td>
<td>0.3</td>
<td>0.6</td>
<td>0.48</td>
<td></td>
</tr>
<tr>
<td>9 (Going to Cinema/entertainment) GTC</td>
<td>143</td>
<td>2.9</td>
<td>0.3</td>
<td>0.58</td>
<td>0.55</td>
<td></td>
</tr>
<tr>
<td>10 (Going to election/political meetings) GEM</td>
<td>142</td>
<td>3</td>
<td>0.3</td>
<td>0.57</td>
<td>0.55</td>
<td></td>
</tr>
<tr>
<td>MEAN</td>
<td>188.1</td>
<td>.0</td>
<td>0.3</td>
<td>.97</td>
<td>.91</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>35.3</td>
<td>2.2</td>
<td>.0</td>
<td>.34</td>
<td>.44</td>
<td></td>
</tr>
</tbody>
</table>

Source: Based on Rasch RSM using own survey data and Winsteps software
The diagnostic information generated by the WINSTEPS software helps in analysing the rating scale structure of the RSM. The item fit statistics and the person fit statistics will reflect the fit of the data to the model. The category fit statistics for the scale of permissibility is shown in Table 27. The outfit mean squares greater than 2 indicate more misinformation which compromises the accuracy in measurement.

<table>
<thead>
<tr>
<th>Category Label</th>
<th>Observed count</th>
<th>Average Measure</th>
<th>Threshold</th>
<th>Outfit Mean square</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>268</td>
<td>-3.8</td>
<td>None</td>
<td>0.85</td>
</tr>
<tr>
<td>2</td>
<td>93</td>
<td>-1.1</td>
<td>-1.71</td>
<td>0.73</td>
</tr>
<tr>
<td>3</td>
<td>129</td>
<td>0.8</td>
<td>-0.47</td>
<td>0.65</td>
</tr>
<tr>
<td>4</td>
<td>260</td>
<td>3.6</td>
<td>2.18</td>
<td>1.86</td>
</tr>
</tbody>
</table>

Note: Category: 1-Always; 2- Sometimes; 3- Rarely; 4-Never
Source: Own survey data using Winsteps software

In the case of the model for the ‘scale of permissibility of mobility’ of peeling workers, the average measures and the threshold estimates increase monotonically across the rating scale which implies a well-functioning rating scale structure of the model. This is corroborated by the probability curves for the scale categories shown in Figure 12.
Figure 12: Probability Curves for the Rating Scale of Permissibility of Peeling Workers

<table>
<thead>
<tr>
<th>Category</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>1.0</td>
</tr>
<tr>
<td>O</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>0.8</td>
</tr>
<tr>
<td>I</td>
<td>0.6</td>
</tr>
<tr>
<td>T</td>
<td>0.5</td>
</tr>
<tr>
<td>Y</td>
<td>0.4</td>
</tr>
<tr>
<td>R</td>
<td>0.2</td>
</tr>
<tr>
<td>S</td>
<td>0.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GTC</td>
</tr>
<tr>
<td></td>
<td>GEM</td>
</tr>
<tr>
<td></td>
<td>GTW</td>
</tr>
<tr>
<td></td>
<td>WRA</td>
</tr>
</tbody>
</table>

Source: Own survey data using Winsteps software.

Scale of permissibility of mobility of peeling workers: Analysis of Variable Map

In the person-item map of peeling workers (see Figure 13), on the right hand side of the map, the items or domains of mobility are plotted. It can be seen that the personal and social visits of women workers are the items with lowest permissibility, that is, for which it is difficult to get permission (Going to Cinema –GTC and Going to election meeting-GEM) among majority of women workers. It shows that women workers have very low level of permissibility for mobility in the social and community spaces. While work spaces which is necessary for survival have very high level of permissibility for mobility. ‘Going to work’ (GTW) and ‘work related activities’ (WRA) do not require permission in the case of majority of women workers hence work has highest level of permissibility in the scale. Expanding freedoms or mobility from the work spaces to other social/community spaces for women workers is constrained in the context of informal peeling workers in Kerala fisheries. I have also identified the location of the peeling workers along the logit scale and the position of some of the workers whom I have surveyed and interviewed are plotted on the variable map.
Figure 13: Person-Item Map of Peeling Workers

Source: Based on 75 peeling workers data on mobility using Winsteps software.
4.4.2 Validation and presentation of the scale of permissibility of mobility of fish vendors

The RSM gives the item measure and fit statistics for the scale of permissibility based on the 10 item responses of the 75 women fish vendors. For acceptable infit statistics, the infit values should be in the range from 0.7 to 1.4, as mentioned in the methodology section. The infit mean square (MNSQ) values (see Table 28) are within the range with almost all values less than 1.4 (except GTW, GEM, GTM) reflecting high level of measurement accuracy and compatibility of the data with the Rasch RSM for the measuring scale of mobility of fish vendors. The items are retained in the scale as their elimination may not have improved the scale.

<table>
<thead>
<tr>
<th>Item entry</th>
<th>Number and item domains of mobility for which permission is sought</th>
<th>Total Score</th>
<th>Measure</th>
<th>Model S.E.</th>
<th>Infit MNSQ</th>
<th>Outfit MNSQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(Going to Work) GTW</td>
<td>298</td>
<td>-7.44</td>
<td>.82</td>
<td>1.55</td>
<td>.16</td>
<td></td>
</tr>
<tr>
<td>2 (Work related activities) WRA</td>
<td>294</td>
<td>-5.86</td>
<td>.51</td>
<td>.70</td>
<td>.68</td>
<td></td>
</tr>
<tr>
<td>3(Going to market) GTM</td>
<td>253</td>
<td>-1.99</td>
<td>.23</td>
<td>1.53</td>
<td>1.25</td>
<td></td>
</tr>
<tr>
<td>4(Going to Doctor) GTD</td>
<td>179</td>
<td>.97</td>
<td>.19</td>
<td>0.72</td>
<td>0.73</td>
<td></td>
</tr>
<tr>
<td>5 (Going to religious meetings) RM</td>
<td>226</td>
<td>-.78</td>
<td>.20</td>
<td>1.39</td>
<td>1.24</td>
<td></td>
</tr>
<tr>
<td>6 (Social and cultural ceremonies) SCM</td>
<td>166</td>
<td>1.46</td>
<td>.20</td>
<td>0.92</td>
<td>0.79</td>
<td></td>
</tr>
<tr>
<td>7 (Natal home visit) NHV</td>
<td>136</td>
<td>2.79</td>
<td>.23</td>
<td>0.56</td>
<td>0.44</td>
<td></td>
</tr>
<tr>
<td>8 (To meet friends) TMF</td>
<td>121</td>
<td>3.64</td>
<td>.25</td>
<td>0.57</td>
<td>0.37</td>
<td></td>
</tr>
<tr>
<td>9 (Going to Cinema/entertainment)GTC</td>
<td>110</td>
<td>4.42</td>
<td>.28</td>
<td>0.89</td>
<td>0.45</td>
<td></td>
</tr>
<tr>
<td>10 (Going to election/political meetings) GEM</td>
<td>136</td>
<td>2.79</td>
<td>.23</td>
<td>1.86</td>
<td>1.51</td>
<td></td>
</tr>
<tr>
<td>MEAN</td>
<td>191.9</td>
<td>.00</td>
<td>.31</td>
<td>1.07</td>
<td>0.76</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>67.4</td>
<td>3.82</td>
<td>.19</td>
<td>.45</td>
<td>0.42</td>
<td></td>
</tr>
</tbody>
</table>

Source: Own survey data using Winsteps software.

The number of fish vendors with transformational mobility is low compared to the peeling workers. However the women who have transformational mobility among fish vendors are married women unlike peeling workers who are either widows or separated. The category fit statistics as shown in Table 29 confirms the well-functioning structure of the Likert scale categories used for the Rasch RSM to construct the scale of permissibility of mobility of fish vendors. The outfit MNSQ values are acceptable and the threshold values for each category increases in an ordered manner from one level to another.
Table 29: Category Fit Statistics for the ‘Scale of Permissibility of Mobility’ of Fish Vendors

<table>
<thead>
<tr>
<th>Category Label</th>
<th>Observed count</th>
<th>Average Measure</th>
<th>Threshold</th>
<th>Outfit Mean square</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>263</td>
<td>-3.89</td>
<td>None</td>
<td>1.03</td>
</tr>
<tr>
<td>2</td>
<td>101</td>
<td>-0.88</td>
<td>-1.32</td>
<td>0.56</td>
</tr>
<tr>
<td>3</td>
<td>90</td>
<td>0.78</td>
<td>-0.04</td>
<td>0.67</td>
</tr>
<tr>
<td>4</td>
<td>296</td>
<td>5.25</td>
<td>1.36</td>
<td>1.38</td>
</tr>
</tbody>
</table>

Note: Category: 1-Always; 2-Sometimes; 3-Rarely; 4-Never
Source: Own survey data using Winsteps software.

Figure 14 shows the well-functioning probability curves for the four category rating scale for fish vendors.

Scale of permissibility of mobility of fish vendors: Analysis of variable map

From the person-item map of fish vendors (Figure 15), it can be seen that the domains of mobility which are least permissible for women fish vendors are GTC (Going to Cinema) and TMF (To meet friends) followed by GEM (Going for election meeting) and NHV (Natal
home visit). For fish vendors, mobility for personal needs, namely entertainment and socialising are the least permissible domains of mobility. The person item map of fish vendors in Figure 15 also shows the location of some of the fish vendors whom I have surveyed and interviewed and have varying levels of mobility in the logit scale of permissibility of mobility.
Figure 15: Person-Item Map of Fish Vendors

Source: Based on 75 fish vendors data on mobility using Winsteps software.
4.4.3 Reliability of the two models

The scales of permissibility of mobility of peeling workers and fish vendors have been constructed separately for deriving the Rasch person measures in separate scale of permissibility which I have to use in the csQCA to dichotomise the outcome variable as mentioned in Section 3.8.2. in methodology Chapter III. To assess the reliability of the models, the Rasch RSM advocates specific fit statistics which can be used to assess the reliability of the scale developed to measure ‘mobility’ based on the score responses to the 10 questions. Table 30 gives the reliability indices for both the persons and the items (domains of mobility) for the Rasch models for the peeling workers and fish vendors. The person reliability indices for both the models are at 0.93 which shows that the estimates of the model are able to capture how far the scale is able to differentiate the persons on the basis of their ‘mobility dimension’. The person reliability (R_p) and item reliability (R_i) values are above 0.8 for both the peeling worker’s model and the fish vendor’s model.

| Table 30: Reliability Indices for the Rasch Model for Peeling Workers and Fish Vendors |
|-----------------------------------------------|---------------|---------------|
| Reliability Indices                          | Peeling Workers’ Model | Fish Vendors’ Model |
| Person Reliability (R_p)                     | 0.93           | 0.93          |
| Item Reliability (R_i)                       | 0.98           | 0.99          |
| Cronbach alpha*58, Person Raw Score ‘Test’ Reliability | 0.97           | 0.90          |

Source: Based on own survey data using Winsteps software.

The internal consistency measures for the two models of peeling workers and fish vendors which generated the scale of permissibility of mobility of peeling workers and fish vendors are also good with values above 0.9 reflecting the consistency in measuring the unidimensional construct of mobility.

*58 α ≥ 0.9 Internal consistency is excellent as alpha will generally increase as the intercorrelations among test items increase, and is thus known as an internal consistency estimate of reliability of test scores. Intercorrelations among test items are maximized when all items measure the same construct and Cronbach’s alpha is widely believed to indirectly indicate the degree to which a set of items measures a single unidimensional latent construct.
The separation indices reported in Table 31 shows the spread of persons and items. The true separation index lies between the ‘Real’ estimate and the ‘Model’ estimate. Both the person separation and item separation indices of the two models reveal that there is sufficient discrimination of persons and items made by the scale of permissibility of mobility.

The Rasch models for the construction of scale of permissibility of mobility of peeling workers and fish vendors have shown good model fit for the data and evidence of measuring the unidimensional construct of mobility of women workers. The scale has helped in the hierarchical categorisation of women with high levels of permissibility of mobility (women with high mobility and TM) and those with low levels of permissibility of mobility.

4.4.4 Test of unidimensionality of the two models

The Principal Component Analysis (PCA) of the standardised residuals are used to check if there are sub dimensions or secondary dimensions in the data which is incompatible with the Rasch model. The PCA of residuals helps to verify whether the latent trait of mobility is captured by the model and that the residuals do not exhibit any trait other than the single dimension of ‘mobility’. The unidimensionality assumption is verified using the PCA along with the fit statistics. The results generated by the WINSTEPS programme are shown in Table 32 for the peeling workers’ and fish vendors’ models.
The Rasch dimension explains 78 percent of the variance in the case of peeling workers’ model and 85 percent of the variance in the case of fish vendors’ model. The unexplained variance in the first contrast is slightly higher in the case of peeling workers’ model at 6.3 percent, however the variance explained by the items is at 40 percent which is good in terms of the model capturing the latent trait or dimension in the data. The unexplained variance in the first contrast for the fish vendors’ model is much lower at 3.5 percent and the variance explained by the items are higher at 47 percent. From the standardised residual variance, it can be seen that there is no secondary dimension and the Rasch models are able to measure the latent trait of mobility using the data.

The two separate scales of permissibility of mobility constructed for peeling workers and fish vendors owing to the presence of DIF have shown that there are similarities between the two types of workers in the case of hierarchical categorisation of the domains of mobility according to the levels of permissibility for mobility. It can be seen that the two separate scales for peeling workers and fish vendors also reflect that, the domains of mobility which are least permissible are GTC, TMF and GEM as in the case of the single scale of permissibility of mobility for all the informal workers. However, the separate construction of scales have yielded good fit for the empirical data.

| Table 32: Standardised Residual Variance of the Peeling Workers and Fish Vendors Models |
|-----------------------------------------------|----------------|----------------|
|                                               | Peeling Workers’ Model |               |
|                                               | Empirical (%) | Modeled (%) |
| Total raw variance in observations            | 100           | 100           |
| Raw variance explained by measures            | 78            | 78            |
| Raw variance explained by persons             | 39            | 39            |
| Raw variance explained by items               | 39.9          | 39.9          |
| Raw unexplained variance (total)              | 21.1          | 21.1          |
| Unexplained variance in 1st contrast          | 6.3           | 29.8          |
| Fish Vendors’ Model                           |               |               |
| Total raw variance in observations            | 100           | 100           |
| Raw variance explained by measures            | 85.2          | 86            |
| Raw variance explained by persons             | 38            | 38.4          |
| Raw variance explained by items               | 47.1          | 47.6          |
| Raw unexplained variance (total)              | 14.8          | 14            |
| Unexplained variance in 1st contrast          | 3.5           | 23.7          |
| Source: Own survey data using Winsteps software. |           |               |
4.5 Women with High mobility and Transformational Mobility – A Discussion

The scale of permissibility of mobility based on the 3 Rasch models (one single scale for all workers and 2 separate scales, 1 each for peeling workers and fish vendors) enabled hierarchical categorisation of informal women workers into those women workers with high levels of permissibility of mobility (above the average measure of 0 in the logit scale including those having TM (TM is above the person measure of 2 in the logit scale) and those with low levels of permissibility (below the average measure of 0 in the logit scale) as having constraints on mobility. The comparison of person scores on the two ‘calibrations\(^{49}\)’ show that it doesn’t affect the scale of permissibility of mobility of peeling workers and fish vendors. The person scores of mobility on the separate scales and the single scale are shown in the scatter plot in Figure 16, which reflects a minor divergence at the lower end of the scale.

\(^{49}\) Calibration refers to the development and validation of a measure. This term is used generally in educational testing.
The scatter plot of Rasch mobility measures (person scores) derived on the basis of a single scale for all workers (RSM corresponding to section 4.3.6.) and separate scales for peeling workers (section 4.4.1.) and fish vendors (4.4.2.) is an evidence to show that the measurement scale does not substantially affect the person measures of mobility which corroborates the findings from variable maps as well.

4.5.1 Categorisation of women workers based on Rasch person measures of mobility

The most notable findings that emerge from the RSM for peeling workers are that among the peeling workers, the women with high mobility and permissibility of mobility are widows, women who have separated from their husbands and women whose husbands are alcoholics. In the case of fish vendors, most of the women who have high mobility and transformational mobility, that is those who do not require permission to move outside the household and have freedom to move, belong to the age group above 50 years. Fish vendors who have high mobility (above the average Rasch person measure of 0 in the logit scale) are married, unlike peeling workers with high mobility and TM who are either widows or separated from husbands. Fish vendors who have high mobility and TM (score of 2 and above in the logit scale) belong to the above 50 years age category.

From the analysis of the scale of permissibility of all informal workers, it is evident that there are more number of fish vendors who are above the mean level of mobility in the scale of permissibility as compared to the peeling workers, which can be attributed to their nature of work.
The histogram showing the distribution of fish vendors in Figure 17 clearly depicts the normality in the distribution of fish vendors. Fish vending work improves mobility and their visibility as women doing a particular trade. This is evidenced in more than 50 per cent of fish vendors having above the mean level permissibility of mobility in the scale (0 is the mean level in the logit scale which is depicted by the blue line in the histogram). However in the case of peeling workers there are two distinct groups at the upper and lower ends of the scale reflecting polarity of peeling workers (see Figure 18). The upper end of the histogram reflect the widows and separated women among peeling workers in the sample who have high mobility measure. At the lower end of the histogram, are the workers with low person mobility measure who need permission even to go out for pursuing peeling work.
As peeling workers, women are confined to peeling sheds which have unhealthy environment and socially they are considered to be undertaking demeaning tasks. Peeling workers are not as visible as fish vendors. Being self-employed as fish vendors have greater positive impact on the overall mobility of fish vendors than peeling workers. Peeling workers have only around 41 percent of women with permissibility of mobility above the mean level in the scale of permissibility.

4.5.2 Domains of mobility and levels of permissibility

As seen from the scales of permissibility of mobility (see 4.3.6. and 4.4.1 and 4.4.2.) for informal workers, women face the most constraints on mobility in the domains of entertainment, personal spaces and political purposes namely, GTC, TMF and GEM in the case of single scale and separate scales for peeling workers and fish vendors. Social and cultural meetings, religious meetings and going to doctor are spaces where women in general face medium level of permissibility. Work mobility is highly permissible in the case of fish vendors and even for majority of peeling workers least constraints are in the domains of work and work related activities.
4.5.3 Scale of permissibility of mobility and the mobility ladder

Based on the results from the Rasch model for the informal workers (peeling workers and self-employed fish vendors), a mobility ladder can be visualized which is shown in Figure 19. I have diagrammatically represented the mobility of women as evidenced from the scale of permissibility of mobility in the form a ‘mobility ladder’ for women workers with increasing levels of permission required as one moves up the ladder. At the lowest step of the ladder are the domains of mobility which require the least levels of permission namely work mobility and work related movements outside the household. As one moves up the ladder, it becomes increasingly difficult to get permission with the mobility for entertainment and political participation having the greatest constraints. TM is at the top of the ladder (person score of 2 and above in the logit scale) which represents mobility without any constraints and autonomy in mobility which is capability.
The pathway to transformational mobility which is a capability for women in informal work can be said to be one of step-wise progression. As evidenced from the Rasch analysis ‘mobility to work’ (GTW, WRA) is not constrained for women workers but mobility in social spaces and to meet personal needs are curtailed by patriarchal gender norms which necessitates seeking permission for movements outside the household for women.

To climb up the mobility ladder (see Figure 19), the work mobility is the first step for women. Work mobility does not ensure transformational mobility and higher levels of permissibility of mobility may result only in certain cases. So far, the theoretical arguments about women’s autonomy and agency have focused on the significance of work related mobility in improving women’s freedoms which includes mobility across various domains and autonomy or decision making. From this analysis it can be claimed that work mobility alone is not a sufficient condition for improving women’s overall autonomy in mobility and
that mobility associated with work is not a capability which enhances the overall freedom of movements of women.

In the next section, I analyse the mobility and autonomy of women using the Rasch person measures on mobility with the responses to the survey question on autonomy ladder to establish the linkages between mobility and autonomy.

4.6 Transformational Mobility and Autonomy Ladder: Analysing the Linkages

In this section, I establish the linkages between mobility and the household autonomy of women. I have analysed the linkages between the Rasch person measure of mobility derived from the Rasch RSM and the responses to the two main survey questions on autonomy of women workers, (a) on ‘autonomy ladder’ and (b) on household decision making across 10 domains, as mentioned in the methodology section (see section 3.5.1. in Chapter III).

To measure the autonomy of women workers, first, I have used a reflective question in my survey questionnaire which assess the perception of autonomy of women. To measure the perception of autonomy of women workers, the question asks in which step of an ‘autonomy ladder’ they stand with the steps numbered on a scale of 1 to 10. The objectivity in measuring autonomy in this manner and its relevance in a specific cultural context are explained in the methodology Chapter III.

The following Figure 20 shows the plots of Rasch mobility scores of women workers and the responses to autonomy ladder question (on a scale of 1 to 10) of all the 150 women workers based on the survey data. It can be seen from the chart that there is a direct positive relation between high mobility including TM and the autonomy ladder responses. The lower person measures of mobility in the chart correspond to lower score responses to the autonomy ladder question signifying the positive relationship between mobility of women workers and the perception of autonomy within the household of the women workers. From the figure 20, it is evident that the Rasch mobility scores and the autonomy ladder responses are positively associated in the case of all informal women workers.
Further, I have also examined the women with TM (that is those who have high mobility with Rasch person measures of minimum 2 and above in the logit scale as shown in mobility ladder and the variable maps (Figure 14 and Figure 16) among the peeling workers and the fish vendors and matched their perception of autonomy based on their responses to the autonomy ladder question which can further substantiate the relationship between transformational mobility and the household autonomy of women workers.

Figure 21 shows the autonomy responses of the women with TM on a scale of 1 to 10. All the women workers who reported Rasch measure above 4 based on the measurement scale of mobility are plotted in the figure. They also have higher sense of perception of household autonomy as can be seen from the figure, with 7 being the lowest score response to the autonomy ladder question reported by the women workers with TM. The women who have TM among peeling workers have responded with ‘9 to 10’ in the autonomy ladder. Among fish vendors majority of the women workers have reported 7 and above in the autonomy ladder. Therefore it can be claimed that having TM or autonomy in mobility is the pathway to household autonomy among women workers. Those women who have transformational mobility also have household autonomy and greater decision making within the households.
They perceive themselves as having greater autonomy and greater well-being freedoms and control over their lives and the immediate environment around them.

**Figure 21: FV and PW with TM and their Autonomy ladder responses**

![Graph showing Autonomy ladder responses for Fish Vendors and Peeling workers](image)

Source: Based on own survey data on autonomy ladder on a scale of 1 to 10 plotted in the y-axis.

Among the peeling workers, the 15 women workers who consider themselves at the top step of the autonomy ladder are the ones with TM based on the scale of permissibility of mobility. Among the fish vendors, 10 of the women who have TM, also reported their own perception of household autonomy above 7 in the scale of 1 to 10 in the autonomy ladder. Therefore having TM, that is the ability and freedom to decide about one's own movements signifies higher perception of overall household autonomy among women workers.

Secondly, for measuring autonomy, I have used the direct question on decision making (see section 3.4.1.) across 10 domains to analyse the decision making within household by examining the responses to the survey question (see section 3.4.1. of Chapter III). The respondents are asked as to who makes the major decisions within the household to which the options given are: husband, respondent, senior male, senior female and others. Here, I have used the responses to this main question on decision making within the household to analyse household autonomy among peeling workers and fish vendors. The following Figure 22 shows the plot of the responses to the question on decision making and the percentage of
peeling workers and fish vendors who report the main decision makers of the household as husband, respondent and other categories.

As can be seen from the Figure 22, based on the survey data of informal women workers, among the peeling workers, 61 percent of women report that the main decision making within the households are done by their husbands and among the fish vendors 85 per cent of women report that the major decisions are taken by their husbands within the households. In the case of peeling workers, the presence of separated women and widows who have TM is one reason which result in lower percentage of respondents reporting husbands as the main decision makers. Therefore, senior males and senior females in the households are also reported to be decision makers in the dysfunctional families of peeling workers.

4.7 Concluding Remarks

The Rasch RSM is used for the first time in the development studies discourse to understand the domains of mobility of women workers. Based on primary data, the scale of permissibility of mobility shows that even among women with work mobility, other social and personal domains of mobility remain constrained. The Rasch RSM enables construction of a scale of mobility as a single unidimensional construct. An innovative ‘scale of permissibility of mobility’ is devised to measure mobility of women workers which
hierarchically categorised women workers with high levels of permissibility of mobility (TM above 2 in the logit scale) and low levels of permissibility of mobility (below the average person measure of 0 in logit scale). The measurement model used in this study has shown construct validity. It has high reliability indices, hence can be replicated in multiple cultural contexts. Women with transformational mobility experience mobility without constraints and enjoy freedom of movement in the real sense which is a pathway for greater autonomy within the household and outside the house.

This chapter provides an alternative view to the existing understanding of gendered mobility and informal work. Gendered mobility has multiple domains. Transformational mobility is the highest level of permissibility of mobility which is a state of non-domination and sense of autonomy as regards one’s movements. As evidence based on the empirical models show TM may not be a reality for majority of the women workers whether they are self-employed fish vendors or peeling workers. Though work mobility has greater level of permissibility for women, the social, cultural and personal domains of mobility are highly constrained for majority of women workers. Mobility pertaining to entertainment, visiting friends, relatives and natal home visits are highly constrained for both groups of women workers.

The variable maps for the informal workers and the mobility ladder reflect the hierarchical categorisation of women workers on the basis of their permissibility of mobility, with women with TM at the top of the scale and women with low levels of permissibility of mobility towards the bottom of the scale. Work mobility has not translated into greater mobility across social domains for women workers and transformational mobility cannot be achieved only through work mobility. Therefore mobility is gendered and is confined to work places and is a ‘bounded capability’ which does not enhance freedoms in other social spaces for women. The nature of informal work along with patriarchal structures and gender norms have substantial influence in improving the mobility of women.

The linkages between TM and the household autonomy is also analysed in this chapter. By using the ‘autonomy ladder’ question from the survey data, I have established the positive relationship between TM and the perception of household autonomy of women workers. Women with TM have reported themselves to be at a higher step in the ‘autonomy ladder’ on a scale of 1 to 10. The cross case analysis of the women workers with TM and the responses to the autonomy ladder question points to the fact that there is close relationship between TM and autonomy of women.
In Sen’s Capability Approach, the ‘expansion of freedom is viewed as both the primary end and the principal means of development (Crocker, 2008:92). The work mobility of informal women workers in fisheries in Kerala does not expand the real freedoms, hence work mobility can be termed as ‘bounded capability’ which is a capability limited or bounded by either the social, cultural and gender norms or a combination of all of these. Work mobility can thus be termed as ‘bounded capability’ in the case of informal workers. Mobility is a functioning and not a capability for informal women workers in fisheries in Kerala.

4.8 Summary of the Chapter

Chapter IV introduces a new ‘Scale of Permissibility of mobility’ to measure mobility of women workers. It is an empirically devised scale using the Rasch RSM which can be replicated for other women workers for comparative analysis. With the help of the scale I have measured the polarity and domains of mobility of informal women workers with those having high mobility and TM and those workers having low permissibility of mobility. I have also used separate scales of permissibility of mobility of peeling workers and fish vendors to analyse the ‘constrained mobilities’ of the women workers. By way of using the ‘mobility ladder’ I have analysed the step wise progression of levels of permissibility of mobility of women to reach TM. For both peeling workers and fish vendors, mobility in social spaces to meet entertainment and personal needs have the highest level of constraints. Work mobility has the least level of constraints. Lastly, I juxtaposition the survey responses to questions on household autonomy and autonomy ladder along with the Rasch mobility measure to further explore the linkages between TM and autonomy.

In the next chapter the Rasch person measures of mobility of women workers derived from the RSM for all the informal workers using pooled data will be used for analysing the determinants of years of informal work along with other social and economic factors. The Multiple Regression Analysis (MRA) is used to model the factors which includes the Rasch person measures to capture the determinants of work mobility of women workers.
5 CHAPTER V: DETERMINANTS OF WORK MOBILITY OF WOMEN IN FISHERIES: A MULTIPLE REGRESSION ANALYSIS

There is predominance of women in low paid and low earning informal work like peeling work and fish vending in fisheries. As mentioned in section 1.4 of Chapter I, the second research question of my study is about the factors that determine ‘work mobility’ of informal women workers. In particular, I ask ‘Is overall mobility of women a significant factor that determines work mobility in informal work in fisheries?’ In this chapter, I explore this research question based on the survey data on peeling workers and fish vendors with the help of multiple regression analysis.

The chapter is organised as follows: First, the multiple regression models are specified and the correlates of informal work are explained. Secondly, I have provided the descriptive statistics and correlations between relevant variables. Thirdly, the results of the first multiple regression model on determinants of work mobility with Rasch mobility measure and its diagnostic analysis are presented. Fourthly, the second multiple regression model on determinants of overall mobility and its diagnostic analysis and results are presented. Fifthly, I have presented the analysis of the two multiple regression models and I discuss the results of the models. I conclude the Chapter with the summary of findings of the models.

5.1 Model Specification and Correlates of Informal Work

In this Chapter, I use multiple regression models to investigate the important social, individual and economic factors that determine the number of years of work spent in informal work (in peeling work or fish vending), which is ‘work mobility’ and to determine the factors that influence overall mobility of women workers using the survey data of 150 women workers. The multiple regression analysis offers a fuller explanation of the dependent variable since few phenomena are products of a single cause, and the effect of a particular independent variable is made more certain (Lewis-Beck, 1993). I have used two multiple regression models in this chapter. The first model to analyse the determinants of work mobility in informal work and the second model to analyse the determinants of overall mobility of women workers.
The first multiple regression model (see Model I in Table 33) has the proportion of adult years spent by the women workers in informal work as the dependent variable which I use as a proxy for work mobility (that is mobility associated with informal work). In the sample, Y is regressed on the selected independent variables which reflect the respondent’s characteristics, household characteristics, social background and economic background of the women workers. By regressing years of informal work on various individual, social and economic factors, I cull out the significant factors that determine ‘work mobility’ of informal women workers in fisheries.

The second regression model (Model II in Table 33) aims to determine the overall mobility of women workers and it has the Rasch mobility measure as the dependent variable. The Rasch mobility measure is derived from the Rasch RSM explained in Chapter IV.

The model specification and the dependent variables used in the analysis are given in Table 34. The selected variables are Age, Marital status (Married-1; Single/Widow/separated-0), Own Education (Secondary and below- 1; High school and above-0), Land asset (Owns land-1; No land-0), Caste (OBC -1; Others-0), Lower Spouse education (Husband’s education lower than the respondent-1; High education-0) and the amount of debt.

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50 Child labour is non-existent in peeling work in Kerala; in my sample of women peeling workers and fish vendors, majority of the workers have started the informal work after the age of 18 years. I have computed the years of work by computing the adult years as 18 years and above for all the women workers in the sample.
### Table 33: Multiple Regression Models

<table>
<thead>
<tr>
<th>MODEL- 1</th>
<th>MODEL- 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Y</strong> Work mobility (Proportion of adult years in informal work)</td>
<td>Overall Mobility (Rasch mobility measure of women workers)</td>
</tr>
<tr>
<td><strong>INDEPENDENT VARIABLES (X1 to X10)</strong></td>
<td><strong>Independent Variables</strong></td>
</tr>
<tr>
<td><strong>X1</strong> Age</td>
<td>Age</td>
</tr>
<tr>
<td><strong>X2</strong> Marital status (Married-1; Widow/separated-0)</td>
<td>Marital status (Married-1; Widow/separated-0)</td>
</tr>
<tr>
<td><strong>X3</strong> Own Education (Secondary and below- 1; High school and above-0)</td>
<td>Own Education (Secondary and below- 1; High school and above-0)</td>
</tr>
<tr>
<td><strong>X4</strong> Land asset (Owns land-1; No land-0)</td>
<td>Land asset (Owns land-1; No land-0)</td>
</tr>
<tr>
<td><strong>X5</strong> Caste (OBC -1; Others-0)</td>
<td>Caste (OBC -1; Others-0)</td>
</tr>
<tr>
<td><strong>X6</strong> Lower Spouse education (Husbands education lower-1; High education-0)</td>
<td>Lower Spouse education (Husbands education lower-1; High education-0)</td>
</tr>
<tr>
<td><strong>X7</strong> Amount of debt</td>
<td>Amount of debt</td>
</tr>
<tr>
<td><strong>X8</strong> Work Dummy (Peeling worker-1; Fish Vendor-0)</td>
<td>Work Dummy (Peeling worker-1; Fish Vendor-0)</td>
</tr>
<tr>
<td><strong>X9</strong> Rasch Mobility Measure of women workers</td>
<td>Proportion of adult years in informal work</td>
</tr>
</tbody>
</table>

Source: Author’s own specification based on survey data

The main hypothesis concerning the choice of variables used in the multiple regression models are briefly explained below.

**Age of the respondent** is likely to be positively related to the number of years spent in informal work. In informal work in fisheries, women who are aged 30 years or more are likely to work more than those younger than 30 years. As there is social stigma associated with working in peeling units and fish vending, women start working mostly after getting married, so that there are no restrictions on joining the work to supplement household incomes.

**Marital status** (Married-1; Widow/separated-0): The chance of choosing to work in peeling or fish vending is greater for women who are married than those who are single. Being single and unmarried prevent women from engaging in informal work, especially peeling work which is considered socially demeaning work. Though fish vending work is a traditional occupation, women take up this trade only after getting married. Therefore being married is positively associated with the number of years spent in informal work.
**Own Education** (Secondary and below-1; High school and above-0) is expected to be negatively associated with years of work spent on informal work. **Land asset** (Owns land-1; No land-0) Ownership of assets in the form of land can improve the income of the households and can reduce the number of years spent on peeling or fish vending work. **Caste** (OBC -1; Others-0) Belonging to a lower caste can have a positive association with the number of years of work in low paid peeling work in seafood pre-processing units. Lower the caste, greater the number of years of work in peeling and fish vending. **Lower Spouse education** (Husbands education lower-1; High education-0) The higher level of education of spouse can reduce the number of years women engage in informal work in fisheries since husband with higher education can improve his earnings over time which will reduce the need for women to supplement income of the households. **Amount of debt:** Indebtedness of households will increase the number of years work informal peeling work or fish vending work in fisheries sector. It is expected that this variable is positively correlated with the dependent variable.

Apart from the economic and social characteristics of the women workers, as dependent variables, I use the **Rasch mobility measure** of the women workers based on the scale of permissibility of mobility derived from the Rasch RSM as shown in section 4.3 of Chapter IV. The Rasch mobility measure is a ‘person measure’ of mobility which is derived for each women worker on a logit scale. Using the Rasch mobility measure as one of the dependent variables will help us to determine whether ‘mobility’ is a significant factor which determines the years of informal work. It is expected that the mobility measure will be positively related to the years of informal work. The higher the freedom and ability to move, the greater will be the number of years of informal work in fisheries.

The Rasch mobility measure is also used as the dependent variable in the second multiple regression model. The independent variables in this model are the same as that used in the first regression model except that the ‘proportion of years of informal work’ is a dependent variable in this model. The Rasch person measure and the proportion of years of informal work is hypothesised to have positive association with each other in both the models.

The next section examines the descriptive statistics of the dependent and independent variables used in the multiple regression models.

### 5.2 Descriptive Statistics and Correlation Matrix of the variables

Before analysing the regression model and its results, I present the descriptive statistics of the variables used in the model. Descriptive statistics summarises some of the features of the data.
that pertain to all the 150 women workers. Table 3 provides the descriptive statistics namely, mean and the standard deviation of the variables of the model. It is notable from the table that the average age of the respondents in the sample of informal workers which include both peeling workers and fish vendors is 45.9 years. The mean values of the dummy variables imply the proportion of cases in the category coded as 1.

| Table 34: Descriptive Statistics of the Variables of the Model |
| --- | --- | --- |
| Proportion of years in informal work | 0.52 | 0.32 | 150 |
| Age | 45.94 | 9.18 | 150 |
| Proportion of Married | 0.87 | 0.34 | 150 |
| Proportion of own education | 0.57 | 0.50 | 150 |
| Proportion with asset ownership | 0.67 | 0.47 | 150 |
| Proportion belonging to OBC | 0.71 | 0.45 | 150 |
| Proportion with low spouse education | 0.43 | 0.50 | 150 |
| Work dummy | 0.50 | 0.50 | 150 |
| Rasch mobility measure | 0.49 | 3.84 | 150 |

Note: Mean value of dummy variables shows the proportion of cases in the category which are coded as 1.

Source: Based on own survey data on women workers

Next, I examine the correlations between variables which are given in Table 35. As can be seen from the correlation matrix, the number of years spent in informal work as fish vendors or peeling workers is significantly correlated to the independent variables, namely, age, being married, caste and low education of spouse. The correlation matrix is indicative of the relationship between the variables. As expected, the mobility measure is positively correlated to the proportion of years of informal work by women, age, own education, land ownership, caste and low education of spouse. Marital status and work dummy are negatively correlated to the Rasch mobility measure.

I have examined the correlation coefficients of all the variables that I intend to use in the multiple regression model to check if there is presence of multicollinearity with highly correlated independent variables. By examining the correlation matrix of the variables I have checked whether there is potential cause of concern for multicollinearity problems. When multicollinearity exists it is not possible to arrive at unique solution for the least squares parameter estimates (Lewis-Beck, 1993) and the regression models will not yield best linear
unbiased estimates. As can be seen in the correlation matrix, (see Table 35) none of the variables are highly correlated (correlation above .9) to create problems of multicollinearity. Therefore, regression analysis can be done without suspecting problems of multicollinearity.

| Table 35: Correlation Matrix of Variables of Multiple Regression Model |
|---------------------------------|---------|---------|---------|---------|---------|---------|---------|
| Proportion of years in informal work | Age | Married | Own education | Asset ownership | Caste | Low spouse education | Work Dummy | Rasch mobility score |
| Proportion of years in informal work | 1.00 | | | | | | | |
| Age | 0.21** | 1.00 | | | | | | |
| Married | -0.18* | -0.22*** | 1.00 | | | | | |
| Own education | 0.11 | 0.39*** | -0.22** | 1.00 | | | | |
| Asset ownership | 0.10 | -0.02 | -0.03 | -0.16* | 1.00 | | | |
| Caste | -0.27*** | 0.15 | 0.32*** | 0.07 | -0.10 | 1.00 | | |
| Low spouse education | 0.17 | -0.01 | 0.18 | -0.19* | 0.02 | 0.02 | 1.00 | |
| Work Dummy | 0.12 | -0.13 | -0.24*** | -0.04 | 0.37 | -0.34 | -0.01 | 1.00 |
| Rasch mobility score | 0.25*** | 0.38 | -0.29*** | 0.09 | 0.02 | 0.02 | 0.07 | -0.08 | 1.00 |

Note: *p<0.05; **p<0.01; ***p<0.001
Source: Own computation from survey data on women workers

The next section gives the results of the first multiple regression model of this study which analyses the determinants of work mobility of women.

5.3 Determinants of Work Mobility of Women: Multiple Regression Model I

In this section, I explain the multiple linear regression model to predict the ‘work mobility’ by using the years of informal work that women engage in fisheries as the proxy for ‘work mobility’. This helps in determining the factors that might lead women to choose informal work in the fisheries. As explained in the methodology chapter, quantitative analysis is used to analyse the survey data and multiple linear regression is a quantitative method which can test whether there are significant factors that determine the work mobility of women in fisheries.

I have used step wise multiple regression to cull out the factors which are significant. As explained in the previous section 5.2, I started running the regression analysis with all the 9 variables. I have eliminated the variables which turned out to be least significant to make way
for model simplicity. I have eliminated X7- amount of household debt which turned out to be the least significant and the presence of the variable does not yield better results for the model.

The multiple regression model with 8 independent variables including the Rasch mobility measure as one of the independent variables that determine the work mobility of women workers is given below in Table 36. The R-square value of the model is 0.21 implying that 21 percent of the variation in the dependent variable is explained by the independent factors. However as can be seen in Table 36, age of the respondent, low education of spouse and the Rasch mobility measure are statistically significant predictors of women’s work mobility at 5 percent level of significance. Caste is highly significant (at 1 percent significance level). Caste is negatively associated with work mobility in fisheries peeling work and fish vending pointing to the fact that the lower the caste, the greater the number of years spent in informal work.

<table>
<thead>
<tr>
<th>Table 36: Regression Model- I- Dependent Variable Work Mobility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Coefficients</strong></td>
</tr>
<tr>
<td>Intercept</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Married</td>
</tr>
<tr>
<td>Own education</td>
</tr>
<tr>
<td>Land ownership</td>
</tr>
<tr>
<td>Caste</td>
</tr>
<tr>
<td>Low spouse education</td>
</tr>
<tr>
<td>Work Dummy</td>
</tr>
<tr>
<td>Mobility measure</td>
</tr>
</tbody>
</table>

Note: Coefficients statistically significant at *p< 0.05; **p< 0.01; ***p<0.001
Source: Based on own survey data on women workers

As hypothesised earlier in section 5.2, the lower education of spouse is negatively related to the work mobility of women in informal work in fisheries. As evidenced from the demographics and socio-economic background data on peeling workers and fish vendors, the spouses are mostly boat workers, coolie, fishermen and other harbour workers. As they do not have higher education or scope for improving skills and productivity in their productive spheres of activity, women have to engage in informal peeling and fish vending work to supplement the income of their households. Therefore, when women have higher education than their spouse in the context where spouses themselves are low earners, the work mobility
of women will increase as part of their survival strategy. With higher education than spouses, women can have greater negotiating power to work outside the household. The marital status of women workers, the land ownership, their own education and the work dummy have turned out to be insignificant in the model to determine work mobility.

5.3.1 Diagnostic analysis of Model I

To check the validity of the assumptions on which the multiple regression model is based and to validate the quality of the model I use the residual diagnostic plots. Normality, linearity and homoscedasticity are the three assumptions checked using the residual diagnostic plots. The normal plot of residuals tend to have straight line appearance. The residual plots have a horizontal band appearance which means that the constant variance and the correct functional form holds for the model (Figure 23).

![Figure 23: Plot of Residuals Versus Predicted Proportion of Years in Work](image)

Source: Based on regression model on survey data.

A normal probability plot of the residuals can be used to check whether the residuals are normally distributed and if the resulting plot is approximately linear, we proceed assuming that the error terms are normally distributed. The plot is based on the percentiles versus ordered residuals. The normal probability plot of residuals for the multiple regression model on determinants of work mobility is given in Figure 24.
As can be seen in the Figure 24, the normal plot of the residuals has a straight line appearance which signifies that the assumptions of the regression model holds. The histogram of the residuals is given in Appendix E.

The next section examines the regression model II which is used to determine overall mobility of women workers.

5.4 **Determinants of Overall Mobility of Women - Multiple Regression Model - II**

In section 5.3, I have found using multiple regression model that Rasch mobility measure is a significant determinant of the years of informal work by women. It is positively associated with years of work as expected. It will be meaningful to examine if the factors that determine taking up informal work are similar to the factors that determine the overall mobility measure of women. The Rasch mobility measure captures mobility not only in the case of going to work as explained in section 4.3 of chapter IV, but also movements in various other domains like social, community and personal spaces. After checking the correlations (see section 5.2, Table 35), I have regressed the Rasch mobility measure on the respondent’s proportion of years in informal work, respondents’ age, marital status, own education, land ownership, caste, spouse education and work dummy. The results are shown in the following table (see
The three significant factors as shown by the results of the model which determines mobility of women are the proportion of years in informal work which is ‘work mobility’, the age of the women workers and their marital status.

<table>
<thead>
<tr>
<th>Table 37: Regression Model II: Determinants of Overall Mobility of Women Workers</th>
<th>Coefficients</th>
<th>Standard Error</th>
<th>t Stat</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-3.726</td>
<td>1.957</td>
<td>-1.904</td>
<td>0.059</td>
</tr>
<tr>
<td>Proportion of years in informal work</td>
<td>2.504*</td>
<td>0.963</td>
<td>2.599</td>
<td>0.010</td>
</tr>
<tr>
<td>Age</td>
<td>0.118**</td>
<td>0.036</td>
<td>3.290</td>
<td>0.001</td>
</tr>
<tr>
<td>Married</td>
<td>-3.256*</td>
<td>0.942</td>
<td>-3.458</td>
<td>0.001</td>
</tr>
<tr>
<td>Own education</td>
<td>-0.660</td>
<td>0.637</td>
<td>-1.036</td>
<td>0.302</td>
</tr>
<tr>
<td>Land ownership</td>
<td>0.260</td>
<td>0.648</td>
<td>0.402</td>
<td>0.688</td>
</tr>
<tr>
<td>Caste</td>
<td>0.781</td>
<td>0.719</td>
<td>1.088</td>
<td>0.279</td>
</tr>
<tr>
<td>Low spouse education</td>
<td>1.048</td>
<td>0.589</td>
<td>1.780</td>
<td>0.077</td>
</tr>
<tr>
<td>Work Dummy</td>
<td>-0.924</td>
<td>0.648</td>
<td>-1.425</td>
<td>0.156</td>
</tr>
</tbody>
</table>

Note: Coefficients statistically significant at *p< 0.05; **p< 0.01; ***p<0.001
Source: Based on own survey data on women workers

The model has an R-square value of 0.25 implying that 25 percent of the variation in the dependent variable is being explained by the independent variables in this model. The significance of age, marital status and years of informal work on mobility of women workers are important findings of the model. While the age and the years of informal work are positively associated and are significant determinants of overall mobility, marital status is negatively associated with overall mobility of women workers. Marital status is a significant determinant in the case of overall mobility and as the results show it is negatively related to the Rasch mobility measure. As the marital status is coded as ‘1’ and widows/separated women as ‘0’, being widows/separated women increases overall mobility, therefore marital status is negatively associated with overall mobility. Being married in informal work doesn’t increase overall mobility as evidenced from this regression model results.

5.4.1 Diagnostic analysis of Model II

As mentioned in section 5.3.1., it needs to be checked whether the assumptions of the multiple regression model holds in order for the model to be valid. As in the case of Model 1, I have plotted the residuals to check for validity of the assumptions of regression. The residual plot and the normal probability plot for model II on determinants of overall mobility are given below in Figure 25 and Figure 26.
The residuals are randomly scattered about 0 and the horizontal band appearance reflect constant variance assumption holds in this case.
The normal probability plot of the residuals for the model II on determinants of overall mobility is used to check the normality assumption. It reflects a normal distribution with an upward slopping straight line.

5.5 Discussion on Regression Models of Informal Work

A comparison between the two multiple regression models are given in Table 38. The R squared values are low in the case of both the models. Though the predictive power of the regression models of mobility examined in this chapter are low owing to low R-squared values, they have been able to delineate the significant factors that determine work mobility and overall mobility of women workers in the fisheries. The first model has consistently reported age, caste and lower spouse education as the significant factors determining the years of informal work (work mobility) in my sample of peeling workers and fish vendors of fisheries. I have computed models by eliminating the number of variables which also yielded age, caste and low spouse education as significant factors. The model II on determinants of overall mobility of women indicate the significance of age of the respondent, marital status and the proportion of years on informal work.

<table>
<thead>
<tr>
<th>Regression Model I on Work Mobility</th>
<th>Regression Model II on Overall mobility measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Four Significant Factors</td>
<td>Three Significant Factors</td>
</tr>
<tr>
<td>Age</td>
<td>Age</td>
</tr>
<tr>
<td>Caste</td>
<td>Marital status</td>
</tr>
<tr>
<td>Low spouse education</td>
<td>Proportion of years in informal work</td>
</tr>
<tr>
<td>Rasch mobility measure</td>
<td></td>
</tr>
</tbody>
</table>

Source: Based on regression results of variables from own survey data.

As explained earlier in the model specification, the number of years spent on informal work increase with increase in age of women workers. Owing to the demeaning nature of the work, young unmarried women do not participate in informal work and the married women participate out of necessity. Therefore with increasing age and the simultaneous increase in expenditure of the households after marriage, women start their work in informal peeling and vending work to meet the educational needs of children. It is often the married women past 30 years of age who take up informal work in fisheries to supplement household incomes. In the case of informal workers, participation in informal work is a necessity for majority of the
women as they belong to the low income category. The positive relationship between age and years of informal work is highly significant given the economic and social background of the women workers. With low educational background the workers continue to remain in the low paid informal work than move to another occupation. Unless there are drastic changes in the household economic situation women tend to engage in informal work to meet the household needs.

Lower education of spouse is consistently a significant factor that has emerged in this quantitative analysis of my sample data which is negatively related to the years of informal work by women. This is consistent with the findings of Bhalla and Kaur (2010) who noted in their all India study of labour force participation of women that the ‘male education effect’ in the urban context, which meant that the higher education of spouse, leads to lower participation of woman in paid work. The lower the education of spouse in comparison to the women worker, the lower will be the economic position of the household and the possibility to improve the situation also becomes grim. Therefore it becomes inevitable for the women workers to continue the low paid informal work to supplement incomes in the absence of alternatives in formal segments and due to low ‘own education’, which is not a significant variable in my models.

Caste is another significant determinant as reported in all the multiple regression model on work mobility. Caste is negatively associated with the number of years on informal work signifying the fact that lower the caste in relation to OBC, the greater the duration of time spent on informal work in fisheries. The negative relationship between women’s labour supply and the caste hierarchy is a notable feature of patriarchal societies which give greater weightage to the social concerns of having non-working women in the households, while men are the main earning members (Eswaran et.al, 2013). As can be seen, for the model for overall mobility of women workers, caste is not a significant factor. It is the age and marital status of the respondents that are significant in the case of determinants of overall mobility of women.

In summary, the regression models based on the survey data, have been able to clearly delineate the key factors that determine women taking up informal work in fisheries. The multiple regression models have reported the significance of social factors like caste which is a significant determinant of work mobility and the human capital factors like education level
of spouse and marital status that influence work mobility which is reflected in the engagement of women in informal work in fisheries in my survey sample.

5.6 Summary of the Chapter

In this chapter, the two multiple regression models are used to analyse the factors that determine the years of informal work or work mobility of women in fisheries and the factors that determine the overall mobility of women as measured by the Rasch measure of mobility. The first model on determinant of work mobility has shown that the age of women, caste, Rasch mobility measure and the lower education of spouse are the key factors that determine the number of years that women spent in informal fish vending and peeling work in fisheries. In the second regression model on the determinants of overall mobility of women, the age of the women, marital status and proportion of years in informal work have turned out to be significant factors that determine mobility of women workers. The work dummy is not significant in either of the models.

The regression models in this chapter have aided in segregating the factors that determine the mobility of women workers and the years of paid work outside the household by women in informal work in fisheries. However, the causal mechanisms which result in women attaining transformational mobility or higher levels of mobility through paid work cannot be unearthed with regression analysis. In order to analyse the pathways to transformational mobility, that is women with high levels of Rasch measure of mobility which represent autonomy in terms of their own movements in various domains of social and personal spaces, I use the crisp set Qualitative Comparative Analysis (csQCA) in the following chapter VI. The causal pathways to high mobility and transformational mobility are analysed for both fish vendors and peeling workers to further explore the concept of mobility of women and the pathways to autonomy of women workers.
6 CHAPTER VI: PATHWAYS TO HIGH AND TRANSFORMATIONAL MOBILITY: A QUALITATIVE COMPARATIVE ANALYSIS (QCA)

Social phenomena are the result of multiple causes and conditions. In cultures where mobility is gendered, there are multiple conditions that can influence the mobility of women in social, community and work spaces. In this chapter, using an innovative method of Qualitative Comparative Analysis (QCA) (see 3.8.1. and 3.8.2 in Chapter III) I explore the third research question of my study, that is: ‘What are the causal mechanisms or configurational pathways to ‘high mobility and transformational mobility’ in the context of peeling workers and fish vendors in fisheries?’

This chapter is structured as follows: In the first section I have specified the crisp set QCA (csQCA) models adopted in the analysis of TM of peeling workers followed by the analysis and presentation of the truth table and solution for the csQCA model for peeling workers. Later I examine the csQCA model for fish vendors, its truth table and the solution for the model. For analysing the pathways to high and TM, I use two separate csQCA models since I have used Rasch person measures of mobility for dichotomisation of outcome sets as explained in the methodology section (see section 3.8.2.) Then a comparison is made between the pathways to high mobility and TM of the two models for the two types of informal workers. I have also compared the pathways to the absence of high mobility and TM of peeling workers and fish vendors based on the results of the two models. Lastly, following the mixed method design and for better exposition through triangulation of data, I substantiate the findings of csQCA with qualitative interviews and locate the persons in logit scale of mobility to establish the linkages between mobility and autonomy. I conclude the chapter by providing a summary of the chapter.

6.1 Pathways to High and Transformational Mobility: The Case of Peeling Workers

As explained in Chapter III (see section 3.8.1) on methodology, QCA is a comparative case study method which aims to understand particular social phenomena on a contextual and case oriented manner. The detailed explanation of the csQCA method is given in methodology section 3.8.2. To explore the causal conditions that can result in high mobility and transformational mobility (autonomy in mobility) among peeling workers and fish vendors, I
have used csQCA Models to analyse the causal conditions or causal pathways to high mobility and TM of informal women workers in fisheries. As the peeling workers and self-employed fish vendors have different types of work and have certain differences in the social background, I have adopted two csQCA models separately for each group of workers to analyse their pathways to high mobility and TM.

In the csQCA models, high mobility inclusive of TM is the outcome set. It is the set signifying women having high mobility including TM, so the cases with the presence of high mobility and TM are coded as 1 signifying full membership score. As explained in the methodology, the Rasch mobility measures of persons are used as the basis for coding the cases (above the average measure of permissibility of mobility as 1 and below the average measure of mobility as 0) and 0 signifies non-membership categories. The total number of cases for the analysis are the sample of 75 peeling workers in the csQCA model. The person measure of mobility are logit values as shown in Chapter IV section. Among the 7 causal conditions adopted in the model, see coding explained in Section 3.8.2.). The specification of the model which I use to examine the causal conditions for TM which form the basis of hypothesis for peeling workers are given in table 39.

<table>
<thead>
<tr>
<th>No.</th>
<th>Causal Conditions / Variates</th>
<th>Explanation of conditions</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>WIDSEP</td>
<td>Being a widow or separated women – Widow/separated-1; Married staying with husband-0</td>
<td>Presence of high mobility and TM- (Above the average logit value of 0= 1; Below the average logit value of 0 = 0)</td>
</tr>
<tr>
<td>2</td>
<td>OBC</td>
<td>Belonging to Other Backward Caste – OBC-1; Low caste SC/ST-0</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>HEDU</td>
<td>8th class and above-1; Below HS=0</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>ABVIOL</td>
<td>Absence of spousal/domestic violence-ABVIOL-1; presence of spousal or domestic violence-0</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>ASSETOWN</td>
<td>Ownership of Assets by respondent-ASSETOWN-1; No assets-0</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>LOWEDUSP</td>
<td>Lower education level of husband-LOWEDUSP-1; education higher than the respondent-0</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>AGEPLUS50</td>
<td>Age of respondent above 50-AGEPLUS50- 1; Age below 50-0</td>
<td></td>
</tr>
</tbody>
</table>

**Table 39: Data Matrix for Model – Outcome - TM Among Peeling Workers**

Source: Model specification by author
Table 39 gives the 7 causal conditions which I have defined for the model using the conjunctural theory method as explained in methodology (see 3.8.2.) which can contribute to the outcome TM of peeling workers. All the causal conditions are coded into binary crisp set membership scores with ‘1’ signifying full membership and ‘0’ indicating non-membership in the set.

The main aim of the analysis is to identify the most parsimonious combinations of conditions that can result in the outcome which is TM among peeling workers based on the survey data which will explain the complex causal mechanisms or pathways to TM.

The five important steps in the analysis of the csQCA models as explained in detail in Section 3.8.1. are, in a nutshell:

i. Analysis of the truth table which gives all the logical combinations of conditions
ii. Analysing the necessary conditions
iii. Solution formulae which are a set of equations derived from truth table
iv. Coverage and consistency of solutions
v. Interpretation of the solution formulae

Each of the five steps for the models for peeling workers and fish vendors are discussed in the rest of this chapter. The first part deals with the model for peeling workers which I discuss in the following section. The second part gives the results of the csQCA model for fish vendors.

6.1.1 Truth table and solution formula for peeling workers for presence of outcome

The truth table gives all the logical combinations of conditions that can result in the outcome which is TM. Each row of the truth table gives the various combinations of conditions that can result in the outcome TM for peeling workers. The total number of cases are 75 peeling workers for this model. To generate the truth table a frequency threshold of 1 is set to the data and a consistency threshold of 0.8 to eliminate combinations which do not have any observations in the data. The elimination is done using the fsQCA 2.5 software while generating the truth table.

Based on the truth table the comparative analysis of the combinations of causal conditions (configurations) to generate the solution formula for the Model is done using the fsQCA 2.5 software using Quine-McCluskey minimisation algorithm. The standard analysis of csQCA model gives 3 solutions, namely, complex solution, intermediate solution and parsimonious
solution. The process of Boolean minimisation generates the most parsimonious solution which gives the most parsimonious causal conditions that will result in the outcome. The minimisation rules suggest that “the causal conditions which are superfluous can be removed from the explanation in order to achieve parsimony” (Marx and Dusa, 2011:109). The truth table generated for the csQCA model for the peeling workers to analyse the causal conditions for transformational mobility among women is shown in table 40.

| Table 40: Truth Table for the Outcome –‘High Mobility and TM’ for Peeling Workers |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| widsep | obc | abv | own | low | edus | hedu | age | plus50 | Number of cases | TM | consistency |
| 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1.00 |
| 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1.00 |
| 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1.00 |
| 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1.00 |
| 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1.00 |
| 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1.00 |
| 1 | 1 | 1 | 1 | 0 | 0 | 0 | 4 | 0 | 0.75 |
| 0 | 1 | 1 | 1 | 1 | 1 | 3 | 0 | 0.67 |
| 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0.67 |
| 0 | 1 | 1 | 1 | 0 | 1 | 0 | 8 | 0 | 0.50 |
| 0 | 1 | 1 | 1 | 0 | 0 | 0 | 8 | 0 | 0.50 |
| 1 | 1 | 1 | 1 | 0 | 0 | 1 | 4 | 0 | 0.50 |
| 0 | 1 | 1 | 1 | 0 | 0 | 1 | 4 | 0 | 0.50 |
| 0 | 1 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0.50 |
| 0 | 1 | 1 | 1 | 1 | 0 | 13 | 0 | 0.46 |
| 0 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0.33 |
| 0 | 1 | 1 | 1 | 0 | 0 | 2 | 0 | 0.00 |
| 0 | 0 | 1 | 1 | 1 | 1 | 2 | 0 | 0.00 |
| 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0.00 |
| 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0.00 |
| 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0.00 |
| 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0.00 |
| 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0.00 |
| 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0.00 |
| 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0.00 |

Source: Author’s own survey data; Table generated by fsQCA 2.5 software

As can be seen in the truth table (see Table 40) there are 29 (rows) possible logical combinations for which 7 combinations of causal conditions have presence of the outcome TM (TM=1). The rest of the 22 (rows) causal conditions in the truth table do not have
presence of the outcome TM. After elimination based on threshold frequency value of 1 and consistency value of 0.8, the number of cases as shown in the truth table which have the various combinations of the causal conditions are 7 cases (Number =7) which have the outcome TM. The consistency score less than 0.8 reflect inconsistent configuration for the outcome. The consistency scores above 0.8 shows that the configurational path is sufficient for the outcome. Accordingly, in this truth table for the outcome TM for peeling workers, there are only 7 configurational conditions that satisfy the consistency score above 0.8. The Boolean minimisation of this truth table will give the most parsimonious solution formula. Logical remainders are excluded from the analysis. The next step is to analyse the necessary conditions before deriving the solution formula for the csQCA model of peeling workers.

**Necessary conditions for outcome TM of Peeling workers**

The necessary condition is a super-set of the outcome and is a condition that must be present for the outcome to occur (Ragin, 2009). The Appendix.F shows the conditions tested for the analysis of the necessary conditions for the outcome TM for peeling workers. There are no necessary conditions to report. The condition ‘absence of violence’ (abviol51) has a consistency score of 0.84 when the conditions are tested for necessity (Appendix F) and whether this condition is sufficient for the outcome to occur has to be seen from the following parsimonious solution given below.

**Parsimonious solution for outcome TM of peeling workers**

The main analysis of the truth table offer parsimonious solutions that explain the outcome. The parsimonious solution of the csQCA models are a set of equations or expressions that offer solutions which show the configurations or combinations of conditions that result in the outcome with the greatest degree of parsimony. The most parsimonious solution for the csQCA model is presented below in Table 41.

---

51 I have used lower case letters for the presence of conditions; absence of condition or negation is always denoted by ‘~’.
## Table 41: Parsimonious Solution for Presence of Outcome for Peeling Workers

<table>
<thead>
<tr>
<th>Causal conditions/Pathways to TM</th>
<th>Raw coverage</th>
<th>Unique coverage</th>
<th>Consistency</th>
</tr>
</thead>
<tbody>
<tr>
<td>widsep*lowedusp</td>
<td>0.11</td>
<td>0.05</td>
<td>1.0</td>
</tr>
<tr>
<td>widsep<em>~assetown</em>hedu</td>
<td>0.03</td>
<td>0.03</td>
<td>1.0</td>
</tr>
<tr>
<td>~obc<em>lowedusp</em>~edu</td>
<td>0.08</td>
<td>0.03</td>
<td>1.0</td>
</tr>
<tr>
<td>~obc<em>abviol</em>edu*~ageplus50</td>
<td>0.03</td>
<td>0.03</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>Solution Coverage</strong></td>
<td>0.19</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Solution Consistency</strong></td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note on Boolean notations:
* denotes logical ‘AND’ which implies Boolean multiplication
+ denotes logical ‘OR’ which implies Boolean addition
~ denotes absence of a condition

In table 41, the Boolean expression ‘widsep*lowedusp’ is read as, being widow/separated combined with low education of spouse lead to the presence of outcome high mobility and TM.

The four causal pathways to TM for peeling workers based on the parsimonious solution are:

- Being a widow or separated from husband combined with low education of spouse
- Being a widow or separated woman, having no ownership of asset combined with higher education
- Not belonging to OBC, low education of spouse, absence of own high education
- Not belonging to OBC, not above age50 combined with high education, absence of violence

The raw coverage is not high for any of the four pathways. However the consistency is perfect with a score of 1 which shows the cases which have the causal conditions in solution terms have the outcome high mobility in all the cases. In the first two pathways, the condition ‘being separated women or widows’ is a sufficient condition to have TM which is a point to be noted. Not belonging to OBC is another condition which is common for the third and fourth pathways. The solution coverage is low at 19% but the solution consistency is perfect at 1.0.

The first pathway **widsep*lowedusp → high and TM** (to high and transformational mobility) among peeling workers based on the parsimonious solution generated by the csQCA model is being a widow or separated woman with low education of spouse. This pathway is very contextual, since among the fishing community if the husbands work in the boats, the probability of accidents in the sea are high and with widowhood, the responsibility
of the family makes these women more autonomous. In the case of peeling workers, the absence of a patriarchal head to control woman seems to have led to greater freedoms for movements and decision making within the household. In contrast to the attitude to widows in the northern parts of India, in the South, especially in Kerala widows do not face social stigma and can continue productive activity and look after the family. In the absence of higher education (which is evident in the second pathway), widowhood has forced many women to take up peeling work to look after children and it is a main source of livelihood. The gain in freedoms owing to widowhood arise as the sole responsibility to provide for the family automatically translates into greater freedom of mobility than married women. In the case of nuclear households the impact on mobility for women is much higher in comparison to the joint family households. In my sample study, majority of the households are nuclear households, therefore the death of male member by boat accidents or diseases will result in woman of the household taking up the family responsibilities and thereby gains greater mobility and decision making regarding their own movements, which is transformational mobility. According to this pathway, women being widow or separated and having education level higher than the spouse can lead to greater role in decision making and thereby transformational mobility. The lower the education of spouse in relation to the woman worker, it tends to improve her relative status and decision making capacity within the household. In my study sample, therefore women peeling workers who have education at a higher level than their spouses have transformational mobility.

The second pathway represented by the Boolean solution terms widsep*~assetown*hedu ➔ high and TM signifies that separated/widowed women peeling workers who have high education but have no asset ownership can lead to TM. Being widow does not have any social stigma in the context of Kerala and women do take greater responsibility and decision making in the absence of male patriarchal heads which can lead to TM which is plausible as shown by the second pathway. Even in the absence of ownership of assets, having high education can improve the sense of self-worth and self-esteem which can translate to greater autonomy.

~obc*lowedusp*~hedu ➔ high and TM: The third pathway is not belonging to OBC (which means belonging to SC/ST or forward caste) combined with low education of spouse and absence of high education of respondent. In my sample as explained earlier, it is SC/ST having spouse educated lower than the respondent and with respondent having low education spouse that can have an impact on the decision making role of the women workers.
Not belonging to OBC is a condition in the fourth pathway also. The pathway $\neg \text{obc} \land \text{abviol} \land \text{hedu} \land \text{age}\geq50 \rightarrow \text{high and TM}$ represents the configuration wherein if younger women (age less than 50) who do not belong to OBC have high education and there is no spousal violence in the households, those women will have greater household autonomy and TM.

The QCA philosophy doesn’t support causal symmetry, hence the absence of the conditions that generates the outcome may not result in the absence of the outcome and there may be completely different set of causal conditions that can lead to the absence of the outcome which can reveal the causal complexities of the social phenomenon. Therefore it is important to analyse the causal conditions that can lead to the absence of the outcome which is given in the following section.

6.1.2 Pathways to the absence of TM among peeling workers

The analysis of causal conditions in QCA models is not complete without analysing the configurational conditions that explain the absence of the outcome. The truth table for TM negated model is given in Table 42. There are 26 logical combinations of causal conditions that can explain the outcome TM negated as shown in the truth table (see Table 42).
The number of logical combinations represented by the truth table rows (29) which have the outcome ~TM are 11 with a consistency above 0.8. Among the peeling workers 13 cases have the outcome TM negated. The minimisation of the truth table gives the most parsimonious solution formulae for TM negated of peeling workers.

The analysis of necessary condition for the outcome TM negated in the model for peeling workers show that there are no necessary conditions for the outcome TM negated with all the conditions tested having consistency score below 0.9 (Appendix F).

The most parsimonious solution that explain the causal pathways to the absence of TM are given in Table 43. The six causal pathways for the absence of transformational mobility are
given in the table below (see Table 43). The solution consistency is perfect at 1 while the coverage of the solution is 33%. All the pathways have consistency scores of 1.0. In the third and the sixth pathways, it is worth noting that the low education of spouse among peeling workers is a causal condition that leads to absence of transformational mobility.

<table>
<thead>
<tr>
<th>Causal conditions/Pathways to TM Negated</th>
<th>Raw coverage</th>
<th>Unique coverage</th>
<th>Consistency</th>
</tr>
</thead>
<tbody>
<tr>
<td>~abviol*hedu</td>
<td>0.08</td>
<td>0.05</td>
<td>1.0</td>
</tr>
<tr>
<td>~assetown<em>~hedu</em>~ageplus50</td>
<td>0.10</td>
<td>0.05</td>
<td>1.0</td>
</tr>
<tr>
<td>~obc<em>lowedusp</em>hedu</td>
<td>0.08</td>
<td>0.05</td>
<td>1.0</td>
</tr>
<tr>
<td>widsep<em>assetown</em>hedu</td>
<td>0.02</td>
<td>0.02</td>
<td>1.0</td>
</tr>
<tr>
<td>~obc<em>~lowedusp</em>~hedu</td>
<td>0.02</td>
<td>0.02</td>
<td>1.0</td>
</tr>
<tr>
<td>~widsep<em>obc</em>lowedusp<em>~hedu</em>~ageplus50</td>
<td>0.10</td>
<td>0.05</td>
<td>1.0</td>
</tr>
</tbody>
</table>

**Table 43: Parsimonious Solution for the Outcome TM Negated for Peeling Workers**

**Solution coverage**: 0.33  
**Solution Consistency**: 1.0

*Note on Boolean notations:*
* denotes logical ‘AND’ which implies Boolean multiplication  
+ denotes logical ‘OR’ which implies Boolean addition  
~ denotes absence of a condition

Another notable point in the solution terms of the pathways is that while the presence of own high education when combined with presence of spousal violence (~abviol) (pathway 1) leads to absence of TM, not being aged above 50 can be combined with multiple conditions to generate the causal pathways that can lead to ~TM which signifies that younger women do not have TM. The unique and raw coverage of the pathways are low, though the consistency is good for majority of the pathways.

From the csQCA models for high and TM and ~TM for peeling workers, it can be seen that the low education of spouse can result in TM and absence of TM depending on the combination of conditions in the given context of the peeling worker. Similarly being a widow/separated women can also lead to presence or absence of TM depending on the combinations of causal conditions. As can be seen the causal complexity of the conditions for the presence and absence of the outcome thus become distinct with the help of the QCA analysis.

In the following section, I discuss the csQCA model for the fish vendors.
6.2 Pathways to High and Transformational Mobility: The Case of Fish Vendors

In the csQCA model for fish vendors, there is a mix of cases with diversity in the cases examined. As mentioned in Chapter III, section 3.8.2, contextual understanding of the cases are necessary for coding the causal conditions and in the case of fish vendors, it is appropriate to code married women as 1, as the number of cases of widows and separated women are negligent. Therefore, out of the 7 conditions/variates used in the csQCA model for peeling workers I have used similar codes for variates (causal conditions) of fish vendors except the coding for the marital status of fish vendors, which I have coded as 1 for married (MARID) and 0 for widows and separated women (see Table 44). Appropriate coding of the conditions are necessary for the analysis of causal conditions using QCA, and this requires an in-depth understanding of the cases (coding is explained in detail in Section.3.8.2).

<table>
<thead>
<tr>
<th>Table 44: Data Matrix for Fish Vendors</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
</tr>
<tr>
<td>-----</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>7</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Based on the 7 conditions stated in table 44 the truth table and the configurational conditions generated by the fs QCA model for fish vendors are discussed below.

6.2.1 Truth table and solution formula for fish vendors for presence of outcome

The truth table generated for the crisp set QCA model for the fish vendors to analyse the causal conditions or pathways to transformational mobility can be seen in Table 45. There are 35 logical combinations of causal conditions that are possible with a frequency threshold of 1 and a consistency threshold set at 0.80. There are 17 combinations of conditions with
presence of the outcome and which correspond empirically to 32 cases in the data. There are 18 logical combinations without the outcome. The combination of conditions with the largest number of cases is with the conditions ageplus50, married, belonging to OBC combined with absence of violence and low education spouse. The minimisation of the configurations in the truth table using Boolean algebra and Quine McCluskey algorithm yields the most parsimonious solutions.
<table>
<thead>
<tr>
<th>marid</th>
<th>obc</th>
<th>hedu</th>
<th>asset</th>
<th>own</th>
<th>abviol</th>
<th>low</th>
<th>edusp</th>
<th>age</th>
<th>plus50</th>
<th>number of cases</th>
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</tr>
</tbody>
</table>

Source: Author’s own survey and interview data; Table generated by fsQCA 2.5 software.

There are no necessary conditions (Appendix F) and the conditions that are sufficient for the outcome for this model for fish vendors can be derived from the solution terms derived from the parsimonious solution. The parsimonious solution for the above truth table generated
through standard analysis has given the solution formulae for transformational mobility among fish vendors. The solution is summarised in the following table 46.

<table>
<thead>
<tr>
<th>Causal conditions</th>
<th>Raw coverage</th>
<th>Unique coverage</th>
<th>Consistency</th>
</tr>
</thead>
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<tr>
<td>~marid</td>
<td>0.08</td>
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<td>0.02</td>
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</tr>
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<td>0.06</td>
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<tr>
<td>obc<em>abviol</em>lowedusp</td>
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</tr>
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<td>0.04</td>
<td>0.02</td>
<td>1.0</td>
</tr>
<tr>
<td>obc<em>hedu</em>~assetown<em>lowedusp</em>~ageplus50</td>
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<td>0.02</td>
<td>1.0</td>
</tr>
<tr>
<td>hedu<em>abviol</em>ageplus50</td>
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<td>0.02</td>
<td>1.0</td>
</tr>
<tr>
<td>obc<em>hedu</em>~assetown*abviol</td>
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<td>0.04</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>Solution Coverage</strong></td>
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<tr>
<td><strong>Solution Consistency</strong></td>
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</tbody>
</table>

Note on Boolean notations:
* denotes logical ‘AND’ which implies Boolean multiplication
+ denotes logical ‘OR’ which implies Boolean addition
~ denotes absence of a condition

The eight causal pathways for the outcome TM for fish vendors given by the parsimonious solution are:

- Not being married (~marid → high and tm)
- Not belonging to OBC, absence of violence, asset ownership by women
  (~obc*abviol*assetown → high and tm)
- Age above 50, absence of violence, no asset ownership
  (ageplus50*abviol*~assetown → high and tm)
- Belonging to OBC, absence of violence and low education of spouse
  (obc*abviol*lowedusp → high and tm)
- ~hedu*assetown*abviol*~ageplus50 → high and tm
- obc*hedu*~assetown*lowedusp*~ageplus50 → high and tm
- hedu*abviol*ageplus50 → high and tm
- obc*hedu*~assetown*abviol → high and tm

All the causal pathways have perfect consistency score of 1, however the coverage of empirical cases is low. The fourth pathway has a higher coverage at 38%. The solution also has perfect consistency score which shows that all the cases are consistent with the
configuration pattern and have membership in the outcome. The solution coverage is also good at 68%.

The single condition (~marid) of absence of marriage which in my sample constitute widows and separated women form a very small section and hence a very low unique coverage. A solution term with single condition such as ~MARID, does not explain the outcome and can be ignored in QCA\(^52\). Being a configurational method the interpretation of single conditions may not fit well with the philosophical underpinning of csQCA unless the condition also occur in combination with others in other pathways to make it a necessary condition. The intermediate solution doesn’t yield better result to report. There are no necessary conditions yielded by the model.

The second pathway ~obc*abviol*assetown \(\rightarrow\) high and tm signifies that belonging to a caste other than OBC, which in my sample is mainly SC and ST women (except one forward caste woman who is separated) combined with absence of violence and having asset ownership lead to the presence of TM among women. This pathway has a perfect consistency of 1, though the unique coverage is also low at 2%. This pathway reinforces the theoretical arguments regarding TM of women that ownership of assets and absence of violence are critical components which improve decision making of women in the context of India (Jejeebhoy and Sathar, 2001; 2002). Ownership of assets is an important causal condition that can result in transformational mobility among peeling workers. Similar findings citing the significance of ownership of property by women as an indicator of autonomy and empowerment has been done by scholars in the context of India (Jejeebhoy and Sathar; 2001). The studies on the impact of rural women’s property ownership on decision making and mobility outcomes in the neighbouring state of Karnataka have found that the ‘women’s’ property ownership can largely enhance their ability to travel alone and independently make decisions about processes that play a significant role in their lives’ (Swaminathan et.al.,2012:22). Having ownership of property is said to guarantee autonomy which enables one to lead one’s life not manipulated by other’s decisions (Claassen, 2015). Therefore, the causal condition as revealed by the model reaffirms the importance of access and control over land and other economic resources as an important factor which gives women the freedom

\(^{52}\) On the criteria for interpreting QCA results, Wagemann and Schneider (2007) suggests that QCA being a configurational method it is the interplay between conditions that explains the outcome. Single conditions in isolation, unless the pattern of data strongly suggest the inclusion of the condition as indispensable, single condition of solution term should not be interpreted.
and ability to take decisions regarding their own movements outside the household, i.e. transformational mobility.

According to the third pathway ageplus50*abviol*-assetown → high and tm, the older women aged above 50 years are able to exercise a greater role in decision making within the household and in many instances the patriarchal heads of the households become dependent on women due to their worsening health conditions. In the sample, women aged 50 and above, their spouses were aged above 55 and majority of them were suffering from one or the other debilitating diseases owing to their poor life styles. It can be seen that with declining health, the dependency of men on their spouses increase and this results in greater mobility and decision making by women. Another noteworthy condition that emerges from this pathway is the absence of violence that may have effect on TM of fish vendors. One of the key components of autonomy identified by the studies done on women’s autonomy is the attitude towards violence (Jejeebhoy, 1997, 2002; Mason, 1986; Vlassoff, 1992). Spousal violence is absent among women with greater autonomy and transformational mobility as seen among the fish vendors. Spousal violence and alcoholism are a reflection of ‘symbolic violence’ (Bourdieu, 1977) by patriarchal heads in the context of Kerala. As fish vendors are more physically mobile, they are not dependent on spouses and therefore the patriarchal heads to reinforce their sense of authority mostly resort to domestic violence. Physical harm and violence prevents women to be more autonomous in their decisions regarding movements and hence presence of physical violence and alcoholism prevents women having transformational mobility. The absence of asset ownership which is one of the conditions in the solution term signifies that more than financial independence, it is bodily integrity as reflected by the absence of violence that impacts TM of fish vendors.

The education of spouse being higher than the respondent (lowedusp) in combination with the conditions OBC, having high education, absence of asset and not being above age 50 also leads to the presence of TM. It is notable that the first four pathways and the last two pathways have absence of violence as one of the conditions for TM. It is the fourth pathway obe*abviol*lowedusp → tm which has the largest coverage of cases at 38%. It is the most relevant pathway in this model as it signifies the combination of spouse having lower education than respondent and absence of violence as the pathway to high mobility and TM.

6.2.2 Pathways to the absence of TM among fish vendors
With the assumption of causal asymmetry, csQCA assumes that causal pathways differ for the presence of outcome TM, and for the absence of the outcome ~TM. Therefore the analysis of TM negated for fish vendors yielded the following truth table (see Table 47) for the fish vendors.

<p>| Table 47: Truth Table for the Outcome ‘TM Negated’ for Fish Vendors |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|</p>
<table>
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<tr>
<th>marid</th>
<th>obc</th>
<th>hedu</th>
<th>Asset</th>
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<th>number of cases</th>
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</tbody>
</table>

Source: Author’s own survey and interview data; Table generated by fsQCA 2.5 software
There are 35 logical combinations presented in the truth table with 8 combinations of conditions (rows) having the outcome TM negated. It is noteworthy that there are 11 cases with the outcome ~TM with consistency above 0.8. The analysis of necessary conditions does not yield any necessary condition to report based on truth table analysis (Appendix F). The most parsimonious solution for the truth table is given in Table 48.

<table>
<thead>
<tr>
<th>Causal conditions</th>
<th>Raw coverage</th>
<th>Unique coverage</th>
<th>Consistency</th>
</tr>
</thead>
<tbody>
<tr>
<td>~obc*~abviol</td>
<td>0.11</td>
<td>0.07</td>
<td>1.0</td>
</tr>
<tr>
<td>hedu <em>assetown</em>~abviol *lowedusp</td>
<td>0.07</td>
<td>0.03</td>
<td>1.0</td>
</tr>
<tr>
<td>~hedu<em>~assetown</em>abviol<em>~lowedusp</em>~ageplus50*</td>
<td>0.11</td>
<td>0.11</td>
<td>1.0</td>
</tr>
<tr>
<td>hedu* assetown* abviol<em>~lowedusp</em>~ageplus50</td>
<td>0.11</td>
<td>0.11</td>
<td>1.0</td>
</tr>
<tr>
<td>hedu<em>~abviol</em>ageplus50</td>
<td>0.04</td>
<td>0.04</td>
<td>1.0</td>
</tr>
</tbody>
</table>

**Solution Coverage**

0.39

**Solution Consistency**

1.0

Note on Boolean notations:

* denotes logical ‘AND’ which implies Boolean multiplication
+ denotes logical ‘OR’ which implies Boolean addition
~ denotes absence of a condition

There are five causal pathways to outcome ‘TM negated’ (~TM) for fish vendors and the solution consistency is 1 which is perfect consistency as in the case of other solutions. The solution coverage is at 39%. All the five configurational pathways have perfect consistency scores with the causal combination in the first pathway not belonging (~obc) to OBC combined with presence of violence (~abviol) having perfect consistency score of 1, however the coverage is low at 11%. Women with age above 50 combined with presence of violence and having high education is another pathway with perfect consistency, though the coverage is again low in this instance as well. It is notable that the presence of violence (~abviol) is a causal condition which is present in 3 of the 5 pathways to ~TM among fish vendors. This aspect is a point of discussion later on in Section 6.5.

It will be illuminating to compare and contrasts the various pathways to TM and ~TM of the peeling workers and fish vendors and in the following section I discuss the findings that emerge from the csQCA models for the two types of workers and analyses the patterns of the various conditions in their pathways to transformational mobility.
6.3 A Comparative Analysis of the Pathways to TM: Peeling workers vs Fish Vendors

As mentioned in Section 3.8.1. QCA stands firm in the assumption of ‘equifinality’ which means that multiple paths can lead to the same outcome and therefore rejects any single causality which is permanent (Ragin, 1987; Rihoux and Ragin, 2009). Therefore my aim is not to assert the causality of conditions but to find out the causally relevant conditions in the case of the two types of workers and check for the similarities and contrasts between the cases. The following tabular form (see Table 49) shows the comparison of the various pathways to high and TM and negation of high and TM (~TM) of peeling workers and fish vendors.

The csQCA models for the peeling workers and fish vendors has enabled comparing and contrasting cases which are heterogeneous and thereby exploring the causal diversities and similarities across cases. By analysing the solutions of the csQCA for peeling workers and fish vendors, I try to compare the configurational pathways that result in the presence of TM in the case of peeling workers and fish vendors by comparing the parsimonious solution terms of the two models. Towards this objective I have summarised the solution formulae of both the models of peeling workers and fish vendors in a tabular form (see Table 49).

Causal Asymmetry

QCA does not assume casual symmetry of conditions for the presence of the outcome and the absence of the outcome of the social phenomena. There are multiple conjectural conditions which can result in the presence or absence of transformational mobility. It can be seen from the csQCA models of peeling workers that ‘being a widow’ which is one of the causal condition, when in combination with low education of spouse can lead to TM while being a widow in combination with asset ownership, and having higher own education can lead to the negation of the outcome TM.

Similarly, in the case of fish vendors, women above age 50 years is one of the conditions to TM in the third pathway to TM as shown in Table 49. However, the condition ageplus50 in combination with presence of violence and high education of respondent results in absence of TM as indicated by the fifth pathway to TM negated of fish vendors. Thus the complexity of causal conditions and pathways become evident through csQCA.
### Table 49: Pathways to High Mobility, TM and ~TM: A Comparison of Informal Workers

<table>
<thead>
<tr>
<th>Peeling Workers</th>
<th>Fish Vendors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Causal Pathways to High mobility and TM</strong></td>
<td><strong>Causal Pathways to absence of High mobility and ~TM</strong></td>
</tr>
<tr>
<td>1. widsep*lowedusp</td>
<td>1. ~marid</td>
</tr>
<tr>
<td>2. widsep<em>~assetown</em>hedu</td>
<td>2. ~obc<em>abviol</em>assetown</td>
</tr>
<tr>
<td>3. ~obc<em>lowedusp</em>~hedu</td>
<td>3. ageplus50<em>abviol</em>~assetown</td>
</tr>
<tr>
<td>4. ~obc<em>abviol</em>hedu*~ageplus50</td>
<td>4. obc<em>abviol</em>lowedusp</td>
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<tr>
<td></td>
<td>5. ~hedu<em>assetown</em>abviol*~ageplus50</td>
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<tr>
<td></td>
<td>6. obc<em>hedu</em>~assetown<em>lowedusp</em>~ageplus50</td>
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<tr>
<td></td>
<td>7. hedu<em>abviol</em>ageplus50</td>
</tr>
<tr>
<td></td>
<td>8. obc<em>hedu</em>~assetown*abviol</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Peeling Workers</th>
<th>Fish Vendors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Casual Pathways to absence of High mobility and ~TM</strong></td>
<td><strong>Casual Pathways to absence of High mobility and ~TM</strong></td>
</tr>
<tr>
<td>1. ~abviol*hedu</td>
<td>1. ~obc*~abviol</td>
</tr>
<tr>
<td>2. ~assetown<em>~hedu</em>~ageplus50</td>
<td>2. hedu<em>assetown</em>~abviol*lowedusp</td>
</tr>
<tr>
<td>3. ~obc<em>lowedusp</em>hedu</td>
<td>3. ~hedu<em>assetown</em>abviol<em>lowedusp</em>~ageplus50</td>
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<tr>
<td>4. widsep<em>assetown</em>hedu</td>
<td>4. hedu<em>assetown</em>abviol<em>~lowedusp</em>~ageplus50</td>
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<td>5. ~obc<em>~lowedusp</em>~hedu</td>
<td>5. hedu<em>~abviol</em>ageplus50</td>
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<tr>
<td>6. ~widsep<em>obc</em>lowedusp<em>~hedu</em>~ageplus50</td>
<td>6. hedu<em>~abviol</em>ageplus50</td>
</tr>
</tbody>
</table>

Source: Based on the parsimonious solutions generated by csQCA Models using fs QCA software.

### Methodological Triangulation

By basing the dichotomisation of crisp set code on the logit person measures of mobility derived from the Rasch RSM, I have done methodological triangulation by integrating data to explore the concept of TM combining the result from the Rasch measurement model with csQCA. As Rasch model enables only the measurement of the mobility construct, csQCA enabled the analysis of causal mechanisms that result in TM. Thus as pointed out earlier in the introduction, the analysis of TM surpasses the limitations of quantitative and qualitative methods and enriches the research analysis.

As shown in the Table 49, the asset ownership by women is a condition which is common for both peeling workers and fish vendors in at least one of their respective pathways. In the case of the outcome TM negated, presence of violence (~advio1) is an important causal condition present in one of the pathways to ~TM of peeling workers and three of the pathways to ~TM of fish vendors.

A notable difference between the pathways to high mobility and TM of peeling workers and fish vendors is that among peeling workers being a widow is a condition which result in TM in 2 out of 4 pathways and being younger, (at age less than 50) is one of the conditions in one
of the pathways to TM while in the case of fish vendors, it is older women (ageplus50) in 2 out of 8 pathways, who will have TM as per solution terms of the models.

In the case of fish vendors, the assertion of authority through violence captured by the variate ‘abviol’ absence of violence is an important causal condition for transformational mobility. 6 out of the 8 pathways to TM have absence of violence as a causal condition. The majority of fish vendors belong to patriarchal nuclear households based on survey data. The intra-household hierarchy of power and domination reflects the persistence of patriarchal norms and adherence to these norms by majority of women in the fishing community. Among the fish vendors, where ‘physical mobility’ is greater owing to their type of informal work of vending, the patriarchal household norms are more traditionally observed and ‘physical violence’ is being used as symbolic assertion of authority by male patriarchal heads of the households. The ‘domination through violence’ aspect is discussed further based on the evidence from qualitative interviews in chapter VII (see section 7.6). Therefore, assertion of authority and dominance through spousal violence is common among traditional fishing community to which majority of fish vendors and peeling workers belong.

6.4 Substantiating the csQCA findings based on evidence from Interviews

The qualitative interviews of the peeling workers and fish vendors further illuminate and corroborate the csQCA findings on the patriarchal structure of the households where decisions are mainly taken by the husband who is considered the head of the household. I quote a 39 years old peeling worker (Sangeetha, her location in the logit scale of mobility can be seen in Figure 13 in Chapter IV) on her perception of household autonomy,

“Though I have been working for more than 8 years, I am not allowed to go anywhere without his (husband) permission. Where ever I have to go, I need permission; anyway he is the one who takes all household decisions, even if I disagree, I have to ultimately agree with his decision anyways, isn’t that his right as head of the household to take all decisions?.” (Interview transcript)

The peeling worker has reconciled to the fact that her decisions will not be given due importance and hence accept the patriarchal authority and structure. They adapt themselves to the given structure and tend to accept the decisions taken by their husbands as heads of the households. Majority of the married women peeling workers share these gender norms in household decision making and there are very few women workers who claim to have ‘joint decision making’ within the households. The case of this peeling worker represents the
second causal pathway \{\textasciitilde assetown*\textasciitilde hedu*\textasciitilde ageplus50\rightarrow \textasciitilde TM\} to absence of high mobility and TM.

There are also women who tend to feel that they do participate in decision making within the household although considering the whole situation of household autonomy, as an outsider, it may be intriguing to understand in the first instance. The following is a quote on decision making by one of the peeling workers, 39 years old Shobhana:

\[
\text{“We make all the decisions of the households jointly, I always agree with what my husband says because I think he knows better. He is the one who takes the decision about sending children to college. There is nothing to disagree to all these good decisions. And I also do things which he agrees to; so there is no question of disagreement. Regarding my work, he realised that we cannot survive without my earnings so he allowed me to come for this peeling work” (Interview transcript) }
\]

However, among the peeling workers, the cases of widows and separated women is a study in contrast, as women who have TM and who report themselves to be at the top step of autonomy ladder, the absence of patriarchal head and the responsibility to the family make these women realise their potential and capabilities for autonomy and agency. It is a case of having full responsibilities for the decision making and with that comes the realisation of autonomy. Maniamma, a peeling worker, who is 35 years old and married says,

\[
\text{“I do not require permission to go anywhere, he is not in his senses to even inform as to where I am going. I take all the decisions for the household because of his alcoholism. I have to pay him 200 rupees every day for his drinks. If I don’t pay him, he can be physically abusive. So even if I have to borrow, I have to pay him. Because of his alcoholism, I take all decisions for my children and family.” }
\]

The case of Maniamma is unique. Her husband is unable to make decisions owing to his chronic alcoholism which makes her autonomous by taking the responsibility of the whole household\textsuperscript{53}. But she says that he can be physically abusive as well which reflects the lack of bodily integrity despite being autonomous in this specific situation, though she enjoys well-being freedoms in the sense of capabilities. Therefore these cases suggest that autonomy of women is relational and multidimensional given the specific social and cultural contexts.

\textsuperscript{53} Basu and Jeffrey have noted that when the spouse abdicates all the responsibilities, situation arises wherein the woman has to take full responsibilities. It is decision making because of full responsibilities than having full rights.
Among the fish vendors a notable feature is the presence of spousal violence which prevent women from disagreeing to the decision taken by their husbands. Spousal violence is much higher among fish vendors compared to peeling workers and is reflected in the causal conditions to transformational mobility for fish vendors. Let me quote the case of a 55 year old fish vendor, Judith (see Figure 15 in Chapter IV for her location in the logit scale of mobility) who has been fish vending for almost 20 years of her life.

“For me, the most important thing in my life is fish vending. I have to earn enough to get my daughters married off. We take all household decisions jointly; even if I disagree to his decisions, only sometimes I voice my concerns. Why should I get beaten and lose my health? Because if I lose my health I cannot go for fish vending and earn enough to take care of my children.” (Interview Transcript)

It is the threat of spousal violence that prevents fish vendors like Judith to remain silent and accept the decisions of their husbands. Judith’s pathway is the fifth pathway to negation of TM \{hedu*-abviol*ageplus50\ \rightarrow \sim tm\} given in table 49. Though she doesn’t have any role in household decision making, she tends to feel that decisions are taken jointly by remaining silent and accepting the authority of the head of the household. The threat of spousal violence as symbol of patriarchal authority is a reality among the fish vendors which affects the household autonomy of women.

Thus household autonomy of peeling workers and fish vendors are greatly influenced by the patriarchal structure within the community. The qualitative interviews corroborate the findings of csQCA models by reiterating that the presence of spousal violence adversely affecting the autonomy of women as they live under the threat of physical harm which prevent them from disagreeing to the decision of the heads of the households. The QCA models have also shown that the presence of violence is one of the causal conditions that lead to absence of TM among fish vendors. Thus the csQCA models and the qualitative interviews point to the fact that the pathways to household autonomy of women workers whether they are peeling workers or fish vendors involve complex interactions of patriarchy and adaptive gender norms of women even in the socially progressive state of Kerala. Therefore, the causal conditions that lead to high mobility and TM among women workers reflect the significance of the social, economic and cultural factors that inhibit mobility and autonomy of women.

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54 Sen notes that the achieved dysfunctioning of bodily integrity due to domestic violence is a sign that the victim doesn’t have the capability of being safe from bodily harm in the first place.
6.5 Concluding Remarks

The csQCA models for the peeling workers and the fish vendors in this chapter have highlighted the complex causalities and configurational conditions that can lead to transformational mobility among women in informal work in fisheries. In the case of peeling workers, there are four causal pathways to TM derived by the Boolean minimisation of causal conditions in the csQCA model. The conditions for TM among peeling workers are (a) being a widow or separated from husband combined with low education of spouse (b) being a widow or separated woman, having no ownership of asset combined with higher education (c) Not belonging to OBC, low education of spouse, absence of own high education (d) Not belonging to OBC, not above age50 combined with high education, absence of violence. These conditions reflect the importance of the socio-cultural context of the peeling workers that impacts the transformational mobility of women.

In the case of fish vendors, the csQCA model yields eight causal pathways to transformational mobility. The eight configurational conditions are (a) not being married (b) not belonging to OBC, absence of violence, asset ownership by women (c) age above 50, absence of violence, no asset ownership (d) belonging to OBC, absence of violence, low education of spouse (e) absence of high education, asset ownership, absence of violence, not above age 50 (f) belonging to OBC, having high education, absence of asset ownership, low education of spouse, not above age 50 (g) having high education, absence of violence, age above 50 (h) belonging to OBC, having high education, absence of asset ownership, absence of violence. The solution terms of csQCA models which give the combinations of causal conditions for the occurrence of TM in the case of fish vendors have good coverage of empirical cases at 68% of my survey data and have good consistency scores. All the solution formulae have perfect consistency scores reflecting the well-defined conditions of the model.

Later, I examine the qualitative interviews on mobility and autonomy aspects which further illuminates the findings of the csQCA models by reinforcing the linkages between spousal violence and household autonomy and the adaptive gender norms and household autonomy as prevalent among the fish vendors and peeling workers. Autonomy is found to be relational and multidimensional given the various social conditions in which women’s lives are entrenched in the society.

Thus, even though the informal work facilitates movement outside the household, the patriarchal norms within the household, the lack of asset ownership and the lack of education
restrain and inhibit the capabilities enhancing aspects of informal work and prevent women from having TM. The next chapter will further illuminate the dimensions of informal work through in-depth analysis of qualitative interviews of peeling workers and fish vendors using Classic Grounded Theory (CGT) analysis.

6.6 Summary of the Chapter

In this chapter I have presented the results of csQCA models in the analysis of pathways to TM of peeling workers and fish vendors. Both the models have yielded good consistency scores reflecting well-defined model conditions. The csQCA models of peeling workers and fish vendors have delineated and modelled the social and cultural conditions that can result in TM. It has also shown the complexity of conditions and the causal asymmetry that exists in the absence and presence of outcomes. The models have also proved that methodological triangulation is possible between measurement models and QCA which can further the contribution to knowledge in the study of social phenomena. I have also analysed specific cases and the pathways by using the qualitative interviews to explore the multidimensional aspects of TM and household autonomy. In order to have an in-depth understanding of the mobility and autonomy aspects of women workers, I have selected cases for qualitative interviews (see criteria of selection explained in Section 3.4.2) for Classic Grounded Theory (CGT) analysis.
7 CHAPTER VII: DIMENSIONS OF WORK AND LIVED EXPERIENCES OF INFORMAL WOMEN WORKERS: A GROUNDED THEORY ANALYSIS

In this chapter I use the Classic Grounded Theory (CGT) (Glaserian) approach to understand women’s own perceptions about their lives as informal workers in fisheries and their lives as household members. I have used the grounded theory approach to understand the core concern of the informal women workers from the qualitative interview data. The aim is to analyse what emerges from the data as the core concern or problematic of informal women workers. As part of a mixed method study, this chapter is based on grounded theory which can elaborate on the cases without any pre conceived hypothesis. CGT is a ‘useful methodology for multidisciplinary studies since it ties the varied perspectives together through the conceptualisation of the data and its implicit social organisation of processes and problems’ (Glaser, 1992:18). While the QCA in the previous chapter enabled analysis of conjectural causations that may or may not result in transformational mobility among peeling workers and fish vendors, the aim of this chapter is to seek to understand, ‘what the data reveals as the main concern of the participants’ who are the peeling workers and fish vendors in my study.

This chapter is organised as follows: First, I have given a brief outline of the CGT analysis of interviews and the sample that I adopt in this chapter. Second, I explain the data analysis pertaining to peeling workers and fish vendors from the initial stages of open coding to the emergence of substantive codes. Third, the emergence of core categories and the theoretical codes for both groups of workers are explained. Fourth, the main propositions of the substantive theories that emerge from the interview data of peeling workers and fish vendors are discussed in detail. Fifth, the substantive theories are integrated with the related literature. Sixth, the chapter concludes with the discussion of the findings from the CGT analysis and the summary of the Chapter.

7.1 The Classic Grounded Theory (CGT) Analysis of Informal workers

Grounded theory gives importance to the emergence of ‘basic social processes’ underpinning particular phenomena from the data. The informal work among women in fisheries and its role in the lives of women can be analysed using the grounded theory approach to understand its significance and the main concern of women workers. The aim is to develop a ‘substantive
theory’ or formal theory based on plausible relations between variables that emerge from the qualitative interviews of the peeling workers.

The qualitative interviews of 10 peeling workers and 10 fish vendors, as explained in the methodology section, provided the requisite data base for conducting the grounded theory analysis. The interviews were audio recorded and were conducted at the households and at the work places of the workers. Though the interviews initially began with the semi-structured questionnaires (Appendix. C), I did not prevent participants from giving additional information which they have felt relevant and of core importance to them in their life and work. I have concurrently made field notes and observations during the interviews which have been used later and have immensely helped in the analysis of data.

The data analysis using grounded theory method has been challenging since I had to block my pre conceptions about the participants and their background. However I have trusted in the Glaserian dictum of ‘all is data’ for the interview analysis for the substantive theory to emerge from the data by keeping aside my own perceptions about the informal workers which I have assimilated during the field work. As there are multiple levels of realities, as a researcher I have relied on all types of data to throw open the ‘basic social processes’ that underpin human behaviour to expand contextual meanings and conceptualisation of data at a higher level. It is through multiple levels of abstraction that data have been analysed in the grounded theory and the data analysis starts with the initial open coding process.

7.2 Analysis of Peeling Workers and Fish Vendors: Substantive Coding to Emergent Categories

The process of grounded theory is explained earlier in the methodology chapter (see chapter 3). As explained in the methodology section 3.4.3 of this thesis ‘substantive codes are the categories and their properties that emerge in conceptualising the data from the substantive area being researched’ (Glaser, 2013:7). The open coding helped in generating the categories, and the constant comparison of categories helped in generating the properties of categories and enabled grouping the categories on the basis of similarities and differences. The main substantive codes or themes/categories that emerged from the open coding of the interview data of peeling workers are given in Table 50.
As can be seen from the Table 50, the 8 main themes or categories that emerged from the line by line coding of the interview data are the substantive codes which needs to be further analysed for emergence of the core category. In the case of social stigma, though it was mentioned by the participants, it did not seem to be a concern for many of them hence it is marked as irrelevant. Work being a necessity is a structural issue which is common to all the workers owing to their belonging to a lower income group. In the case of themes numbered (3) to (8) there is an underlying sense of helplessness that emerges from the data. So from this substantive codes I made further comparisons of properties of various categories to analyse which is the core category for the data.

Similarly, in the case of fish vendors, the open coding of the interview data of fish vendors resulted in the emergence of the substantive codes as shown in table 51. The interviews were mostly held at households on Sundays as the markets and door to door vending prevented audio recordings and were too noisy to conduct interviews. The field notes and observations made during my interactions with the fish vendors in the market place and harbour on other days have been useful for further analysis of data.
### Table 51: Substantive Codes and the Emergent Themes for Fish Vendors

<table>
<thead>
<tr>
<th>Cases</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
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<td>1 Main source of livelihood</td>
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<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>2 Visibility and mobility in public spaces</td>
<td>√</td>
<td>√</td>
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<td>3 Acceptance of gender norms and patriarchal structure</td>
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<td>4 Group identity- gender group identification</td>
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<td>6 Active participation in group struggles</td>
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<td>7 Competent and confident to effect changes</td>
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Source: Based on own interview data and the field notes of fish vendors collected and compiled by the author. Note: √- denotes relevance of category; X- not relevant category.

The 7 main themes/categories that emerged from the line by line coding of the interview data are the substantive codes which are given in Table 51. Fish vending is the main source of livelihood and in the case of themes numbered (4) to (7) there is an underlying sense of solidarity and social identity and group identity that emerges from the data. So from this substantive codes I made further comparisons of properties of various categories for each of the 7 substantive codes. The underlying ‘core variable’ which emerged from substantive coding of the interview data of fish vendors is the sense ‘group membership/group identity’ of fish vendors.

### 7.3 Emergence of core categories of Peeling Workers and Fish Vendors

The core category is the one that ‘accounts for a large portion of the variation in a pattern of behaviour and is considered the ‘main theme’ or ‘main concern’ for the participants’ (Glaser, 1978). The following Figure 27, diagrammatically explains the emergence of the core category as a result of substantive coding. The underlying ‘core variable’ which emerged from substantive coding of the interview data of peeling workers is sense of helplessness in situations which have been coded as the core category ‘becoming a subordinated self.'
The core category which emerges from the substantive coding of the interview data of fish vendors is the sense of ‘group identity/ self-categorisation’ among fish vendors which permeates all their activities and provides a valuable account of the group norms that the women fish vendors follow in the cultural context. Self-categorisation and the sense of ‘group identity’ which emerges in the case of fish vendors is shown in Figure 28; the patterns of behaviour and the main concerns raised and the norms followed at the workplace and at the household levels are closely related to their ‘self-categorisation’ and ‘group membership’ as fish vendors. Based on the core category of ‘group identity / self-categorisation’ which emerged from the data on fish vendors, I further analysed the memos and then made constant comparisons of the categories.
As noted by Glaser (2004), the core variable can be any kind of theoretical code—a process, a condition, two dimensions, a consequence, a range and so forth and its primary function is to integrate the theory and render it dense and saturated. “The core variable occurs frequently in the data and comes to be seen as a stable pattern that is more and more related to other variables. It relates meaningfully and easily with other categories. It has clear and grabbing implications for formal theory.” (Glaser, 2004:14).

Once the core category of ‘becoming subordinated self’ emerged in the case of peeling workers and ‘group identity/self-categorisation’ emerged in the case of fish vendors, substantive coding came to an end and selective coding of the categories and properties started to enable constant comparisons of the core category and its relations with other categories and properties that emerged from the data to locate the theoretical codes.

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55 Turner (1985) has used a similar approach in social psychology as a constituent part of social identity approach where he identifies many levels and categories of ‘self’. In a similar vein, I have identified the self-categorisation aspect of fish vendors from the interviews as they value their identities more in the ‘we’ context as vendors than ‘I’ as individuals. However, in my study the ‘vendor’ identity is the category that emerges.
For an integrated theory it is necessary to relate the core category with other categories and understand the underlying conceptual framework that the data can reveal. This is done by delimiting the core category using selective coding and the constant comparative method as explained in the methodology. Once theoretical saturation occur, it is the theoretical codes that enable to see the research, the data and the concepts in new ways to be used in generating theory (Glaser, 1992:29).

7.3.1 Theoretical codes and sorting of memos for discovery of theory

Theoretical codes as explained in the methodology section (see section 3.8.3) form the basis for generating the theory by relating the core category with the various concepts and categories using theoretical sensitivity to explain the action in the substantive area. ‘Theoretical codes are the conceptual models of relationships that are discovered to relate the substantive codes to each theoretically’ (Glaser, 1992:27). It is possible that several theoretical codes may emerge in any one GT study, however focus on one theoretical code which is most relevant will be helpful to capture the relationships between the core category and all other categories. It will be such a theoretical code which can generate a grounded theory which has fit, which is relevant, modifiable and workable.

In the case of peeling workers the main concern or the core category that emerged as a result of substantive coding is ‘becoming subordinated self’ as explained in the Figure 27. To conceptualise the patterns that emerged in the data through theoretical integration I hand sorted all the memos written for the categories and the related categories to core category by constant comparisons. Linking and sorting the memos helped in integrating the concepts to generate the theoretical code which can model the theory appropriate for the substantive area. The main concern of the participants is the core category that has emerged from the data which is ‘becoming subordinated self’. The hand sorting of the memos helped in the emergence of conceptual linkages which led me to consider the ‘Basic Social Process’ (BSP) as the emergent theoretical code in this study.

Generation of a Basic Social Process (BSP) theory occurs around a core category, while core category is always present in a grounded research study, a BSP may not necessarily emerge in grounded study. In my study of peeling workers, ‘subordination ’ is the core concern of peeling workers and it is the state of being subordinate to something; and the state of relying on or being controlled by someone. ‘Becoming a subordinated self’ is a Basic Social Process theoretical code which includes both a social process and a psychological process. Basic
social and psychological process (BSPP) is the theoretical code which has emerged from the sorting of memos of interview data and further sorting of memos led me to consider the social structure (Basic Social Structural Processes) (BSSP) aspects within which BSP processes emerge (Glaser, 2005:11). Hence the theoretical codes of BSPP and BSSP together form the theoretical codes which emerge from this constant comparative method and sorting of memos of interview data of peeling workers.

In the case of fish vendors, based on the core category of ‘group identity / self-categorisation’ I further analysed the memos and then made constant comparisons of the categories. Once the core category emerged, the selective coding started to link the categories with the core category. To analyse the theoretical codes which may emerge, I have resorted to sorting of memos and field notes as explained in the methodology section. There can be overlapping theoretical codes in a particular study and it may be loosely integrated and some of the theoretical codes are based on Glaser’s well-known “Six Cs: Causes, Contexts, Contingencies, Consequences, Covariances, and Conditions” (Glaser, 1978: 74). Other coding families belong to major sociological concepts such as Identity-self family, Unit family, Means goals, Cultural family, Consensus family and others.

In the case of fish vendors, the theoretical code that emerged from the sorting of data, memos and field notes is the code that belongs to ‘identity-self’ family. The self-categorisation and group identity of fish vendors seem to explain the main concerns of the fish vendors and how they resolve their issues are also closely related to their identity as fish vendors at the work setting. The entrepreneurial identity also gets reflected in the management and resolution of problems at the household, even within the dominating patriarchal structure.

From the CGT analysis, there are two substantive theories that have emerged from the qualitative interviews of peeling workers and fish vendors. They are:

- Theory of Subordinating Self of peeling workers
- Theory of Self-Categorisation of fish vendors

I elaborate on the two substantive theories and their main propositions in the following sections. First, I explain the theory of subordinating self of the peeling workers and its main propositions.
7.4 Theory of subordinating self of Peeling Workers

The lived experiences of informal peeling workers are characterised by helplessness which arise from the ‘becoming subordinated self’ that is state of being controlled by others in multiple situations. This main concern of peeling workers that is, becoming subordinated self is the basic social psychological process which accounts for the patterns of behaviour and is reinforced by several factors. They are:

1. Status reconciliation and subordination in workplace
2. Awareness of, and conformity to patriarchal norms
3. Adaptive to social constraints
4. Aspiration failures

7.4.1 Status reconciliation and subordination in the workplace

Helplessness and subordination are evident in the sphere of work in terms of inability to bring about changes in working conditions, and wages. The fear of loss of work prevents women from raising the issues that concern them namely, poor working conditions, irregular casual work, extremely low earnings (below minimum wages) and instability in earnings at the workplace. The women workers reconcile to the realities of work hardships, low wages, and poor working conditions without resistance. The reconciliation of the participants to the low status work at the informal setting resounds in 54 years old peeling worker, Anandavalli’s perception about work which resonates the views of the majority.

“What change can we expect? It is good if the employer raises our daily piece rates, it is at his discretion, other than that, in this work, what change can occur?”

(Interview Transcript)

The women workers face complete segregation of work at the peeling sheds which further prevents their integration with other workers and keeps them in a subordinated position to the supervisors who are all men. The scope for negotiation for women peeling workers for better pay and work conditions is extremely constrained owing to their subordinate position and reconciliation to the low status of the work. The work is strenuous and repetitive for long hours of 8 to 9 hours at a stretch, which fetch only less than minimum wages owing to the absence of contractual obligations. The demeaning work of peeling is further compounded through dehumanising practices on women peeling workers at the workplace perpetuated by
those in positions of authority. I quote Beena, a widow, who has been doing peeling work for the past 8 years:

“We work here from 8 am to 6 pm. ……The rooms are all dirty here, as you can see; there is no neat room even for keeping our lunch boxes and having lunch. We have only one bathroom for more than 40 women; but we cannot complain, if any one complaints today, we will not be allowed to work from tomorrow, hence we are keeping quiet; nobody is concerned, so as women we have to endure all this.” (Interview Transcript)

The dehumanising practices and the non-responsiveness of authority to the needs of informal workers, especially because they are ‘women’ put them in helpless situations leading to status reconciliation and subordination at the work place.

7.4.2 Awareness context and conformity to patriarchal norms

The definition of awareness context is “the total combination of what specific people, groups, organizations, communities or nations know about a specific issue” (Glaser and Strauss, 1964: 669). In the case of informal workers, the presence of awareness of context among women with responsibilities of the family in the given social and cultural context have pressured them to move outside the household and seek informal peeling work. The lack of skills, education, lack of assistance from other agencies and insufficient financial support from husband to support the family are other factors which have compelled women to take up such demeaning work.

“It is more than 8 years now since I started peeling work; I don’t know any other work and because of financial difficulties, I am doing this work. I only want to feed and educate my children. If I don’t work how will I send my children for college education? I undergo all this suffering for my children” (Interview transcript)

The awareness and commitment to the family responsibilities, especially taking care of children and their education is very high among women workers. Family commitment reinforces the patriarchal norms prevalent in the households by women subordinating themselves to men as heads of households to the extent of subjugation of freedoms. Women face multiple levels of constraints in movements, decision making and some women have

56 As noted by Glaser and Strauss (1964), it is a structural concept which can be used to study problem entailing awareness at any structural level of analysis and which Glaser and Strauss used in the context of ‘dying patients’.
accepted spousal violence as an accepted form of expression of control and authority among peeling workers.

"Without my husband’s permission I cannot go anywhere; even for coming here to work in the peeling shed I have to ask him. I always seek permission and I go to only those places which he agrees to; that’s what I should do, right? Who is there to control me other than him? It is better to agree" (Interview Transcript)

Accepting the domination of men seem to be the patriarchal order prevalent in the fisheries community. Majority of women who are aware that they do not have any other alternative avenues of employment and livelivelihoods, follow the accepted norms of the society rather than question the authority though it is stressful situation and make them feel emotionally worse off as can be gauged from the following quotation from Bindu, one of the peeling workers.

"If we have different opinions, it is always he (my husband) who takes the final decision. Though he goes in the boat, more than half of what he earns he drinks away (spends in alcohol). So it is my earnings which meets major expenses of children in the household. Emotionally I am harassed and stressed a lot by him; but we won’t survive without this work. But at least I am not beaten up" (Interview Transcript)

In many cases, women are aware that to a great extent they are financially independent from their husbands because of the earnings from peeling work and the inability of their husbands to support the family owing to their alcohol addiction. However, there is wider acceptance of societal gender norms, and women seem to accept a subordinate inferior position in the family as regards decision making. Financial independence do not reflect greater freedoms even in terms of physical mobility for women peeling workers. By conforming to the patriarchal norms and accepting its various expressions in the form of domestic violence and constraints on mobility, the women workers try to maintain their commitment and responsibility towards the sustenance of family.

7.4.3 Adaptive to social constraints

Becoming adaptive to social constraints are directly linked to the logic of conformity to patriarchal norms and acceptance of inferior status by women in the society. Becoming subordinated self are reflected in the ways and means in which women exercise their freedoms in the social spheres of activity. Freedom to make informed choices or decisions about their own self, which can be termed autonomy are perceived as not available in the
The ability to move outside the household and work in the peeling shed is itself perceived by the society as ‘demeaning’, ‘indecent’ and not suitable for young women. This devaluation of work done by women in the society perpetuates gender segregation at work and lower earnings.

Among the respondents, all women started peeling work in the early 30s, after they were married and had children in order to support the family. The patriarchal domination experienced by women at the household level is in another way extended to the work place and the society at large. The work place is also characterised by the patriarchal hierarchical structure, where peeling workers occupy the most inferior position and are supervised by men. The acceptance of the inferior position of women workers and their internalisation of social constraints are evident in the interactions between peeling workers and the other workers. There is complete segregation of work and the scope for occupational mobility is completely absent for women. It has adversely impacted the self-esteem and self-worth of peeling workers leading to their inability to bring about changes in their social and working conditions despite their valuable contribution to work and family.

“We all come for this work just to survive; for one net measure we get only Rs.30/- and I manage to make around 250/- by working for 9 hours at a stretch; it is very strenuous and I have chronic back pain and shivering sitting like this. But even my asking for a desk, the supervisor won’t listen; these men don’t understand, they will just tell us to leave work and go home if we raise some issue. So it is better to forget pain.” (Interview Transcript)

The economic vulnerability of women workers further pressurise them to accept ‘discrimination’ and at times ‘oppression’ as a ‘group norm’ that as peeling workers they have to follow. This results being adaptive to inferior status at work, low pay and acceptance of authority at workplace.

7.4.4 Aspirations failures

The gender relations and the experiences of peeling workers in the patriarchal social settings and participation in socially stigmatised ‘demeaning’ peeling work have led to segregation at work and social exclusion to a great extent. This has resulted in low self-esteem and low self-worth. Becoming subordinated self is a reflection of reaching an ‘aspirations cul-de sac’ in
the case of peeling workers. Aspirations failure and ‘agency’ are closely related and it is being examined in the following paragraphs.

The double burden of household work and productive work have prevented women workers from apportioning time for collective mobilisation and socialisation. The absence of collective mobilisation and lack of socialisation have affected their capacity to negotiate and bring about changes at the workplace. The women workers lack the ability to negotiate with the companies and peeling sheds (smaller units) who hire them for better pay or working conditions as stated earlier in the interview transcript. As a result the companies and peeling sheds lack the institutional set up or mechanism to redress the grievances of women workers.

“I don’t get time to participate any of the organisations meant for women like kudumbashree/ayalkoottam etc. I barely get time to finish my household chores once I get back home in the evening after work. There is nobody to support so I have to take care of children, household and then this back breaking work from morning till evening” (Interview Transcript)

“I am doing peeling work for more than 20 years; I don’t expect anything to change now, can I? We do the most dirty job here, so we will be paid the lowest and everyone here thinks that it is not a difficult job” (Interview Transcript)

At the individual level and as a group, peeling workers seem to represent the inability to bring about change, which in other words can be termed as ‘agency’. Lack of agency seems to directly lead to aspirations failure as women workers express state of helplessness and subordination to authority at the work place. Not being able to do meaningful work as peeling work is demeaning and looked down upon by the society, women fail to develop ‘collective goals’ to aspire for as workers by subordinating self to the authority.

At different stages of life, women have taken up peeling work, initially to meet the needs of children’s education, later to get them married and after that to meet their own daily expenses. As the work is informal and there is no stability in earnings, the experience of peeling workers are characterised by indebtedness, lack of assets and absence of expectations and aspirations for better life and no hopes for wellbeing in future.

“What good things can happen in my life? For so many years there have not been any change; as allied workers we do not get any benefits from the government; I have to

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57 Women’s neighbourhood groups and self-help groups in Kerala
do this strenuous work to meet our daily expenses. As my husband is now old and unemployed, and my son and daughter are married and gone, till death whatever I can manage with peeling work, we have to manage to clear our debts and meet daily expenses; we don’t even have a house of our own.” (Interview Transcript)

The social attitudes towards peeling workers and the lack of support from any agency or religious institutions, make women peeling workers vulnerable to domestic violence, abuse and at times harassment at the workplace. The sense of social exclusion and marginalisation among peeling workers is aggravated by the adverse environment at home which puts immense pressure to subordinate oneself to the expressions of power by men as in the case of spousal violence. The violence subjugates women and impacts the capacity to aspire for better life and results in ill-being as noted below.

“When my husband resorts to beating after getting drunk, it is beyond limits of tolerance, but I cannot approach anyone (our Church); we don’t get any help or support from any other agency. As wife I have to tolerate all the pain, though sometimes I manage to escape to my daughter’s house nearby, when he is drunk, then he will abuse me verbally.” (Interview Transcript)

Though the presence of alcoholism among men is rampant among the fishing community, women are unable to influence or act against such social issues in the absence of social mobilisation and support for women. The issue of alcoholism impacts the incomes and well-being of women and children substantially among the peeling workers. The disappointment of women resonates in the following statement about alcoholism by one of the respondents.

“If someone can stop alcoholism here, then all the problems will disappear. Even if there is nothing to eat, many of us, women, will have peace of mind. If they (husbands) don’t drink, life is peaceful, but once they are drunk, it is madness…..if he (my husband) doesn’t have money to spend on alcohol, I am forced to give money to him and this happens quite often since he is a coolie and doesn’t get regular income”(Interview Transcript)

Aspiration failures owe its origin to such social issues in the society which is a continuous drain on the resources/incomes of women and a persistent emotional stress in the family. The lack of individual agency at the household level and the lack of ‘collective agency’ as a group owing to multiple personal, social and external factors have made the peeling workers reach an aspirations cul-de sac.
The next section explains the self-categorisation theory of fish vendors.

### 7.5 Self-categorisation as the Substantive Theory of fish vendors

The ‘self-categorisation’ of women fish vendors which emerges as the substantive theory resolves the core concerns of the fish vendors as women in the market place and in the households. Women as fish vendors identify themselves more as the self-employed entrepreneurs and as members belonging to the ‘fish vendors group’ which make up their group and gender identity. The sense of group identity and self-categorisation of women help them in manoeuvring through the complexities of patriarchal structures and norms inherent in the cultural context through various ways and means. The various ways which reinforces the sense of identity as revealed by the respondents in the one to one interviews are discussed below.

1. **Gender group identification and the sense of competence and confidence**
2. **Adaptive norms and manoeuvring through patriarchal domination to suit patriarchal structures**
3. **Solidarity and collective agency of women fish vendors**

#### 7.5.1 Gender group identification - sense of competence and confidence

As women fish vendors, majority of the respondents have a feeling of pride and sense of achievement in pursuing their occupation. While many of the fish vendors have taken up this occupation as a family tradition, there are vendors who are first generation by marrying into fishing/vending communities. The sense of pride in being able to work outside the household as self-employed vendors to meet the household expenses through vending is evident as can be seen in the following quote by a 55 years old fish vendor, Judith.

“All the expenses of my children are met through fish vending. Because of fish vending I always have money with me and I do not have to depend on my husband for each and everything. If I take Rs.500/- worth of fish for vending, I can always make at least Rs.100/- profit every day. With that I can buy things for the household and for my children.” (Interview Transcript)

As fish vendors, the women vendors strongly identify themselves with their occupation. They realise that fish vending has opened up greater opportunities for interaction with the outside world. The sense of importance and self-esteem are felt by both market based and door-to-door vendors. Although fish vendors are dependent on fish merchants who are males to
purchase fish for vending, the women fish vendors are aware that as a group they cannot be exploited for long by the big merchants and have a sense of group identity to deal with the ‘collective issues’ of fish vendors.

“As I am working independently, I can go to the market, purchase fish and do door-to-door vending. I get to talk to many people every day; some of the households even call me on mobile if they need some particular fish, it gives me a sense of importance; they even lend me money in times of need. As fish vendors, we enjoy greater mobility compared to other women, though some fish merchants are shrewd and try to take advantage of us, we get to know their intentions, so as a group, we can protest in case of any kind of exploitation.” (Interview Transcript)

Being self-employed, fish vendors have great sense of competence and confidence in negotiating and bargaining at the work place on a regular basis. The wider interactions with people and their greater mobility in public spaces facilitated by fish vending have inculcated greater negotiating skills among fish vendors. It is reflected in the competence and confidence shown by the women fish vendors in articulating their needs as fish vendors.

7.5.2 Adaptive norms and manoeuvring through patriarchal domination

Women fish vendors manoeuvre and manipulate their ways around some of the patriarchal norms followed in the society. The main decision making power is still held by the male head of the households. Financially, fish vendors are more independent and are able to save from their incomes and are not very dependent on their husbands for everyday household needs.

“The main person taking decisions in our house is my husband. It is the way among us; even if we have disagreements with the decision we have to concede to one’s husband as he is the head of the household. Financially, I try to save money for my kids and sometimes I do not seek his agreement. As I do fish vending myself without depending on him, I can save without his knowledge; he tends to spend a lot on himself by spending on liquor; I do not want to waste my money like that.”(Interview Transcript)

The dominating roles of men in the fishing community is reflected in the presence of spousal violence by men and alcoholism related abuse within households. Though women fish vendors have greater negotiating skills in the workplace, within the households they seem to
accept patriarchal domination and their violent behaviour towards women as acceptable norms of family life. As noted by Kusumam, a 42 years old fish vendor:

“Aspousal violence is common in family life among us. It is all part of life and we have no complaints. We all know that violence will be there for some time and after few years it will stop. They are also working in boats and have stressful life so it is understandable.” (Interview Transcript)

All women fish vendors in the district do head load vending while majority of male fish vendors use motor bikes and bicycles for vending which help them to cover greater distances and make more profit from selling in far off places from the coast. Although women vendors are aware of the advantage of having motor bikes for vending because of adherence to societal norms of means of transport, they have to spend money on public transport or have to resort to head load vending by walking. Mobility of women fish vendors is thus constrained by the lack of choice of means of transport owing to societal restrictions and norms.

“Though men can move around and sell at distant places in their motor bikes, as women we cannot move around in bikes; it can make our life much easier, but people will say something; wearing this dress (pointing to her saree) if I ride a bike, will people remain quiet? There are so many hurdles, so better to use public transport and avoid wagging tongues” (Interview Transcript)

7.5.3 Solidarity and collective agency of women fish vendors

Solidarity among fish vendors to effect changes and improve their working conditions and work environment in their responses to the struggles which they face in the market and workplace in the local context is very much evident among the women vendors in Sakthikulangara who belong to ‘puthenthuruthu’ a small island off the coast of Neendakara.

“We all need a boat or ferry in the early morning to cross the river and reach the market. Nowadays we have to spend Rs. 10 – 40 every day to reach the market by hiring auto rickshaw. We have given a petition to the local MLA (Member of Legislative Assembly) for arranging the ferry for us. Theeradesa Mahila Vedi58 has also decided to take up this issue to higher level to solve our daily struggles.” (Interview Transcript)

58 Women’s wing of Kerala Independent Fish Workers’ Federation (KIFWF).
The collective agency of women fish vendors have resulted in major improvements and achievements in their work environment in Kerala through negotiating with the government by the cooperatives of which women fish vendors are active members. The women vendors through their cooperatives were able to procure special transport facilities for fish vendors in 1991, special wagon was also made available to women fish vendors on passenger trains in southern Kerala. Further the ‘Matsyafed’ (Kerala fisherman’s co-operative) started buses for the conveyance of women fish vendors from landing centres to different fish markets on payment of nominal charges. All these facilities have tremendously improved the working conditions of women fish vendors in Kerala. Lisy, a 38 years old fish vendor says:

“As fish vendor, I can make some money to educate my children and I want to make a good house by the time my kids are to get married. With my savings from vending, I hope to clear my debts and lead a less strenuous life once my kids get a job; fish vending has given me the confidence to face life’s struggles and the strength to live”

(Interview Transcript)

Majority of the fish vendors aspire to make more profits in future and improve their trade to meet the future household needs and investments like purchase of house, children’s marriage, purchase of jewellery. The work experiences of fish vendors reflect a sense of hope and they aspire to further improve their life and working conditions. Though at individual level within the household, the fish vendors do not have autonomy and are similar to the case of peeling workers, as a group of self-employed vendors, they have been able to exercise ‘collective agency’ in order to assert their rights as fish vendors.

Thus in the case of fish vendors, the negotiating skills of fish vending, group identity and greater mobility in public and social spaces have improved their ‘collective agency’ and “taking people seriously as agents entails giving them a chance to be heard, and to be involved in collective evaluations and decisions”. From a capability approach perspective, the case of fish vendors presents collective capabilities whereby they have been able to make themselves heard and negotiate for improved facilities as women workers (Evans, 2003). Though TM and household autonomy at the individual levels are not achievable for the fish vendors given the patriarchal socio-cultural setting, as a group, they have been able to achieve and aspire for better gains in the given conditions. It is noteworthy and is necessary to highlight that within the fisheries sector, two types of informal workers with the single difference in work mobility can have contrasting work experiences and outcomes.
In the next section I discuss the substantive theories of both peeling workers and fish vendors that emerged from the data in the context of informal work and integrate these theories to the related literature.

7.6 Integrating the Theories of Informal Workers with Related Literature: A Discussion

The substantive theory of subordinating self which has emerged in this study on peeling workers has helped in unearthing the major socio-economic and cultural factors that have contributed to the ill-being/low status and low self-esteem of informal peeling workers in fisheries. The interactions of multiple factors which are expressed in the social, economic and individual spheres reinforces the subordinating self and act as barriers to the development of autonomy and agency of women within the socio-cultural context. It can be claimed that the substantive theory of subordinating self is closely related to certain aspects of the Self-determination Theory (SDT) (Deci and Ryan, 1985 and 2000) which tries to relate the socio-cultural environment as one of the factors that undermine the development of human potential and motivation. The lack of ‘agentic’ behaviour among the women workers evidenced from the substantive theory is a “function of the sociocultural conditions in which actors find themselves. The social conditions and processes influence not only what people do but also how they feel while acting and as a consequence of acting (Deci and Ryan, 2008:14).” The women workers as agents do have awareness about their subordinate situation in the social hierarchy both at the household and at the workplace.

According to SDT ‘autonomy, competence and relatedness’ are the three core ‘psychological nutriments’ essential for a person’s wellbeing. The SDT proposes that all humans need to feel competent, autonomous and related to others (Deci and Ryan, 2000).

“Social contexts that facilitate satisfaction of these three basic psychological needs will support people’s inherent activity, promote more optional motivation and yield most positive psychological, developmental and behavioural outcomes. In contrast, social environments that thwart satisfaction of these needs yield less optimal forms of motivation and have deleterious effects on a wide variety of well-being outcomes”(Deci and Ryan, 2008: 15).

The patterns of behaviour as evidenced in the case of peeling workers’ experiences reveal social environment which thwarts the sense of competence, autonomy and feeling of relatedness. The theory of subordinating self reflects the lack of agency which is one of the
key concepts in the capability approach of Amartya Sen. It is agency which enables people to act in a way which helps them to bring about a change, for which they have reason to value (Sen, 1985; Alkire, 2008).

The substantive theory of subordinating self has also captured an underlying dimension of ‘gender’ which interacts with the multiple spheres of activity in the private and social spheres in such a manner as to reaffirm the patriarchal structure and norms embedded in the society which prevents women from developing ‘agentic’ behaviour to bring about changes, which they have reasons to value. The acceptance of gender norms and patriarchal values by the women workers without questioning points to what is termed as ‘doxa’ by Bourdieu in his conceptualisation of society and its structures. Doxa is the ‘universe of the undisputed’ and denotes the aspects of culture and traditions which are arbitrarily accepted and naturalised as societal norms and are reinforced by the hierarchical structures through domination by authority (Bourdieu, 1977). In the case of women workers, though the awareness of context is present, the ‘habitus’ or ‘the structuring structure which organises the practices and the perception of practices’ in the society remain unchanged. Accordingly, ‘the habitus, the ‘durably installed generative principle of regulated improvisations, produces practices which tend to reproduce the regularities immanent in the objective conditions of the production of their generative principle (Bourdieu, 1977:78). In such a case ‘agents are possessed by their habitus more than they possess it, this is because it acts within them as the organizing principle of their actions’ and set limits to the actions of the agents (ibid: 18).

“In a determinate social formation, the stabler the objective structures and the more fully they reproduce themselves in the agents’ dispositions, the greater the extent of the field of doxa, of that which is taken for granted. When, owing to the quasi-perfect fit between the objective structures and the internalized structures which results from the logic of simple reproduction, the established cosmological and political order is perceived not as arbitrary, i.e. as one possible order among others, but as a self-evident and natural order which goes without saying and therefore goes unquestioned, the agents’ aspirations have the same limits as the objective conditions of which they are the product (Bourdieu, 1977:165-166).”
As is evident, the habitus and the doxa together conserve the arbitrary schema of things in the society till such time, crisis\(^\text{59}\) becomes inevitable as a necessary condition for questioning doxa (Bourdieu, 1977). ‘The passage from doxa to discourse, a more critical consciousness becomes possible only when competing ways of being and doing emerge as material and cultural possibilities, so that common sense propositions of culture begin to lose their naturalised character’ (Kabeer, 1999:9). Therefore the social structures exert pressure on women as individuals to sustain and maintain the subordinating self at the household and work place by submitting to the hierarchical and patriarchal authorities. The aspirations of workers are severely limited by the social conditions of which they themselves are a product.

The substantive theory of subordinating self also brings into question the linkages between the absence of individual capabilities and the lack of collective capabilities. ‘Individual capabilities depend on collective capabilities and the organised collectives like unions and women’s groups provide platforms for formulating shared values and preferences and instruments for pursuing them, even in the face of powerful opposition’ (Evans, 2002:56). Evans thus points to the role of collective capabilities to foster individual capabilities in terms of forging shared values, identity and goals. Collective capabilities have both intrinsic and instrumental values to promote freedoms, especially in this context of women workers, freedom from oppression and exploitation under the capitalist mode of production. However, the modes of production, the fragmented nature of workplace and the hierarchical structure of work setting, lack of availability of time for mobilisation and collective action among workers, prevent development of ‘collective capabilities’ among the peeling workers. Therefore the capabilities both at the individual and collective levels fail to develop leading to low self-esteem and self-worth at work place in the case of the peeling workers. It points to how the neoliberal market with its aim of cost cutting strategies deliberate and sustain processes which are detrimental to the development of collective capabilities of workers by informalisation of the production modes and thereby indirectly prevents expansion of individual capabilities and enhancement of freedoms. Though Sen advocate democratic processes and deliberations to promote capabilities and freedoms (Sen, 1999), the greater role played by the market in preventing democratic deliberation cannot be ignored especially in

\(^{59}\) The crisis situation in the case of peeling workers occur when the patriarchal head of the household is absent due to death or separation. Women workers are not subservient to any authority as widows/separated women and she takes full responsibility of her children. The transformational mobility which is experienced by many of the widows as evidenced in the measurement scale of mobility in Chapter 5, which is proof of this.
the context of informal work settings. Thus from the substantive theory of subordinating self, it is conceivable that shared aspirations, goals and interests can go a long way in promoting individual capabilities and hence collective capabilities are important for enhancing freedoms. The collective capabilities can ignite an aspiration contagion’ which could have resulted in better outcomes for women workers in terms of well-being at the work place. Higher self-esteem and self-worth at work place can also generate a ‘spill over effect’ for women’s autonomy and status in their households.

The substantive theory of subordinating self is a pointer to the attempt by women workers to resolve their main concerns at the work place and at the household by accepting and becoming subservient to the authority. . “…..working extensively at eudemonistically meaningless work stifles the flourishing of a worker and diminishes her drive toward self-determination and her sense of self-worth” (Veltman, 2014:281). It is also a situation of ‘adaptive perceptions’ where “the underdog comes to accept the legitimacy of the unequal order and becomes an implicit accomplice” (Sen, 1990:126). Hence it is a multiplicity of factors in the social, structural, individual and collective spheres that have contributed to women workers becoming subordinated self.

In the case of fish vendors, the theory of self-categorisation relates to the precepts of the SDT which put forward the universality of the three components of autonomy, competence and relatedness for the well-being of human existence. As mentioned in the literature review chapter (see section 2.1.1.) meaningful work leads to enhancement of one’s capabilities and leads to human flourishing. In the context of informal work in fisheries, as evidenced from the CGT, self-employed fish vending has greater potential for autonomy and human flourishing in comparison to that of peeling work. Moreover, even in the presence of stifling patriarchal structures both within the household and outside, fish vendors have developed a ‘collective social identity’ which nurture their sense of ‘collective agency’ and help them negotiate for better working conditions.

The negotiating skills of fish vending, group identity and greater mobility in public and social spaces have improved their ‘collective agency’ and “taking people seriously as agents entails giving them a chance to be heard, and to be involved in collective evaluations and decisions”. From a capability approach perspective, the case of fish vendors present collective capabilities whereby they have been able to make themselves heard and negotiate for improved facilities as women workers (Evans, 2003). Though TM and household autonomy
at the individual levels are not achievable for the fish vendors given the patriarchal socio-cultural setting, as a group, they have been able to achieve and aspire for better gains in the given conditions. It is noteworthy and is necessary to highlight that within the fisheries sector, the two types of informal workers with the difference in work mobility can result in contrasting work experiences and outcomes.

The CGT analysis has further reiterated the relations between mobility associated with work, autonomy and agency of women workers and illuminated the contrasting work experiences of peeling workers and fish vendors in informal work. By using informal work as a frame of reference, I have assessed the interconnections between mobility, work, autonomy and agency of women which is an important contribution.

7.7 Concluding Remarks

The two contrasting substantive theories that emerge from CGT in the informal work context of women workers highlight the distinctly different work experiences of informal work for women. The peeling workers are a subordinated group of workers who are fitted/ embedded into a framework of hierarchical rules in a patriarchal setting within the peeling sheds and within the big factory premises. The emergence of two substantive theories, namely, theory of subordinating self’ of peeling workers and the theory of self-categorisation of fish vendors reflect the differences in the nature of work and its impact on autonomy, identity and agency of workers. Whereas peeling workers are invisible and work in fragmented work places which mostly lack the standard work conditions, the fish vendors are visible and more mobile in public spaces and have wider interactions with the outside world beyond their own community spaces. The group identity and strong sense of identity as fish vendors are in contrast to that of peeling workers who reflect low self-esteem and do not feel proud to identify themselves with peeling work.

As both the groups of women workers belong to the marginalised fishing community, there are similarities in the social and family background of peeling workers and fish vendors. However, from the interviews, it becomes evident that the nature or type of informal work and the mobility associated with informal work does have significant influence in the manner in which women workers negotiate in their work environments.

Peeling workers, as allied workers in fisheries tend to experience ‘subordinated’ position in their work place and they consider their work demeaning and degrading. The patriarchal
authority which they face at home is replicated at the work place making the gender and autonomy dimension of their work critical.

In the case of fish vendors, however, there are significant achievements brought about by their collective agency through cooperatives and group negotiation with the government for transport facilities and facilities in markets and harbours. The group identity and greater mobility of fish vendors as self-employed workers have nurtured solidarity among them as distinct self-employed workers.

At the household level however, the well-being freedoms of women are curtailed in the case of both peeling workers and fish vendors. The presence of spousal violence, alcoholism and male domination in nuclear marital household are reflected in the interviews of both types of workers. Work is a necessity to meet household survival expenses of both peeling workers and fish vendors. Though they are the main earners in the household, their role is considered supplementary by the male headed households.

7.8 Summary of the Chapter

In this chapter I have presented the Classic Grounded Theory (CGT) analysis of the qualitative interviews of 10 peeling workers and 10 fish vendors using the Classic Grounded Theory (CGT). The CGT has resulted in the emergence of two substantive theories, namely, ‘theory of subordinating self’ of peeling workers and ‘theory of self-categorisation’ of fish vendors. I have discussed the main propositions of the two theories in detail and explained it using excerpts from interview transcripts. The theories have explicated the contrasting work experiences, mobility, and household autonomy and agency aspects of women workers. As marginalised informal workers, both peeling workers and fish vendors face patriarchal domination at the household levels as is evident from the interviews. Work itself has an impact on their autonomy and individual agency at the work place. In the case of fish vendors, the solidarity and collective agency to effect changes is notable, while in the case of peeling workers, there is aspirations failure and subordination in the workplace. CGT analysis of interviews have illuminated the autonomy and agency aspects of informal women workers.

In the next chapter, I present a synthesis of the important empirical findings of my thesis and examine the major theoretical and methodological contributions.
8 CHAPTER VIII: CONCLUSION

In this concluding chapter of my thesis, firstly, I have briefly explained the motive behind undertaking this study and summarised the main research findings. Secondly, I have systematically stated the empirical findings that emerge from each of the research question that I set out to explore in each chapter of the thesis. Thirdly, I highlight the main contributions of my thesis towards (a) Theoretical knowledge and (b). Methodological development. Fourthly, I have stated the policy implications of my research findings. Lastly, I state my concluding remarks.

In this thesis, I explore mobility of women in its various dimensions in a given socio-cultural context of Kerala in India. Along with explicating the various domains of mobility, I have analysed its linkages with autonomy of women. Mobility or freedom and ability to move has an intrinsic and instrumental value to promote human development. Several scholars have used ‘mobility’ as an indicator of autonomy, empowerment, and agency aspects of women’s well-being (Jejeebhoy, 2000; Uteng, 2006; Kabeer, 2011; Alkire, 2009). Therefore the argument has been that the movement outside the household by women for work is an indicator of autonomy as put forward by the scholars. In this thesis, I argue that movement outside the household for work (work mobility) in the case of informal work by women does not necessarily indicate ‘autonomy’ and is not ‘capability enhancing’. In societies where mobility is gendered, movement outside the household for productive activity alone does not expand the opportunities to enhance capabilities of women. Hence, I put forward the argument that ‘mobility associated with work may not always improve wellbeing freedoms and capabilities of women’.

Mobility of women is a capability only if it is ‘Transformational Mobility’ (TM) which enhances the freedoms or opportunities in the real sense. Thus I have further examined mobility by re-theorising and re-conceptualising mobility and introducing ‘transformational mobility’ (autonomy in mobility) TM as one of the important ‘capabilities’ using Sen’s Capability Approach framework. By introducing the concept of ‘transformational mobility’ which I define as the freedom and ability to move outside the household without constraints from others, my thesis provides an alternative understanding of the concept of mobility of women and empirically proves that transformational mobility which is a capability is not always present among informal women workers, whether they are self-employed or piece rate workers in global production chains. Despite the positive development indicators for women
and a history of collective unionisation in industrial relations in Kerala, the underlying patriarchal social structures and gender norms at the household and workplace settings act as barriers to capability enhancing opportunities for informal women workers. This indicates that mobility is gendered and constrained for women in marginalised communities even in progressive social settings like Kerala.

In the context of micro level informal women workers, who are self-employed fish vendors and piece rate peeling workers in fisheries in Kerala, the thesis explores the four main questions (see table 52). The main contribution of my study is the re-conceptualisation of mobility (TM) as capability by operationalising the CA. It has helped in defining work mobility as a functioning and a survival necessity for poor informal workers. In the context of informal work, work experiences can further suppress autonomy and prevent agency of women. The summary of the research findings that emerge from each of the question explored in this study are given in table 52.
Table 52: Summary of Research Findings

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Main findings</th>
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| Can mobility be measured as a single construct for women workers? Are there multiple domains of mobility as experienced by fish vendors and peeling workers in fisheries? | 1. A ‘Scale of Permissibility of mobility’ is devised which measures mobility of women workers as a single construct.  
2. Mobility has multiple domains for women. The scale measured the domains of mobility of informal women workers with those having high mobility and TM and those not having high mobility and TM.  
3. Mobility in social/public spaces and entertainment and personal needs have the greatest level of constraints.  
4. Work mobility has the least level of constraints though some peeling workers face constraints on work mobility as well. |
| What are the factors that determine ‘work mobility’ and ‘overall mobility’ of informal women workers? | 1. Age of women, caste, Rasch mobility measure and the lower education of spouse are the key factors that determine the work mobility of informal workers.  
2. Age of the women, marital status and proportion of years in informal work are significant factors that determine overall mobility of women workers.  
3. Work dummy is not significant in any of the models. |
| What are the causal mechanisms or configurational pathways to ‘transformational mobility’ in the context of fish vendors and peeling workers in fisheries? | 1. The csQCA models of peeling workers and fish vendors have delineated and modelled the social and cultural conditions that can result in TM.  
2. Lower spouse education and absence of violence are notable conditions that can, in combination with other conditions, result in high mobility and TM.  
3. The models reflect the complexity of conditions and the causal asymmetry that exists in the pathways to the absence and presence of high mobility and TM.  
4. The models have also proved that methodological triangulation is possible between measurement models and QCA in the study of social phenomena. |
| What substantive theories emerge from the work and life experiences of women as fish vendors and peeling workers in the cultural context of Kerala? | Two substantive theories emerge from the experiences of peeling workers and fish vendors. They are:  
1. Theory of Subordinating Self of peeling workers- Its main propositions are: status reconciliation and subordination at work place; awareness context and conformity to patriarchal norms; adaptive to social constraints; aspirations failures.  
2. Theory of Self-Categorisation of fish vendors - Its main propositions are: Gender group identification, sense of competence and confidence; adaptive norms and manoeuvring through patriarchal domination; solidarity and collective agency. |
In the next section I have elaborated on the empirical findings of the study.

8.1 Empirical Findings

First, I shall highlight the synthesis of the empirical findings which relate to each Chapter of my thesis which provides the answers to the main questions that I set out to explore in this study.

8.1.1 Construction of a measurement scale of mobility of women

*Can mobility be measured as a single construct for women workers? Are there multiple domains of mobility as experienced by fish vendors and peeling workers in fisheries?*

The construction of the scale of permissibility of mobility using Rasch RSM provided a measurement scale of mobility (latent trait) of women workers engaged in the two types of informal work, namely, peeling work and fish vending, in fisheries. The scale enabled to test the unidimensionality of my construct of mobility of women and derive the Rasch mobility measure for women workers. The scale of mobility aided in analysing the multiple domains of mobility with differential levels of permissibility as experienced by women. The comparative analysis of the scale of permissibility constructed using the RSM for the two types of informal women workers in fisheries shows that women face constraints on mobility in social and personal spaces in the cultural context of Kerala. Work mobility does not expand the real freedoms, hence work mobility can be termed as ‘bounded capability’ which is a capability ‘limited or bounded’ by the social, cultural and gender norms or a combination of all of these. The mobility ladder which is based on the scale of permissibility of mobility empirically proves that women workers have step-wise progression in various domains of mobility to reach TM which is a state of non-domination. Mobility of women through paid work outside the household (work mobility) does not necessarily expand the capability sets by contributing to greater freedoms and TM. Therefore, not all work mobility of women signifies transformational mobility.

The cross case analysis of women with TM and women who have reported higher scores in the autonomy ladder among the peeling workers and fish vendors reveals the positive relationship between TM and autonomy of women. Those women workers who have TM according to the scale of permissibility of mobility also report higher scores in the autonomy ladder. Therefore TM is a pathway to autonomy of women workers and merely having work mobility need not ensure autonomy of women.
8.1.2 Determinants of work mobility

*What are the factors that determine ‘work mobility’ of informal women workers? Is the overall mobility level of women a significant factor that determines work mobility of informal workers?*

The regression models which I used to analyse the determinants of work mobility have shown that the work mobility of informal women workers, both fish vendors and peeling workers are significantly determined by factors such as the age of the respondents, their caste, low education of spouse and the overall Rasch mobility measure. Caste is a significant determinant of informal work in fisheries, whether as fish vendor or as peeling worker. This shows the significance of caste associated with particular kinds of work still prevalent in the marginalised fishing communities despite the social advancement in Kerala. The overall Rasch mobility measure is also significant in determining work mobility of women along with the age of women and the low education of spouse.

The determinants of overall mobility of women workers are their age, marital status and work mobility. Age is positively associated with mobility and low education of spouse is negatively associated with mobility of women. With increase in age of women, mobility increases and with spouse having lower education than the women workers, their mobility increases. The empirical findings confirm the significance of the women’s stage in life and the importance of human capital factors like education which influences the mobility of women. The regression models confirm the significance of individual characteristics, social and human capital factors that influence mobility of women in a given cultural context.

8.1.3 Configurational pathways to TM

*What are the causal mechanisms or configurational pathways to ‘transformational mobility’ in the context of fish vendors and peeling workers in fisheries?*

The complex causalities and configurational conditions that lead to transformational mobility among women in informal work in fisheries are uncovered by the crisp set Qualitative Comparative Analysis (csQCA). In the case of peeling workers, there are four causal pathways to TM derived by the Boolean minimisation of causal conditions in the csQCA model. The conditions for TM among peeling workers are (a) being a widow or separated from husband combined with low education of spouse (b) being a widow or separated woman, having no ownership of asset combined with high education (c) Not belonging to
OBC, low education of spouse, absence of own high education (d) Not belonging to OBC, not above age 50 combined with high education and absence of violence. These conditions reflect the importance of the socio-cultural context of the peeling workers that impacts the transformational mobility of women.

In the case of fish vendors, the csQCA model yields eight causal pathways to transformational mobility. The eight configurational conditions are (a) not being married (b) not belonging to OBC, absence of violence, asset ownership by women (c) age above 50, absence of violence, no asset ownership (d) belonging to OBC, absence of violence, low education of spouse (e) absence of high education, asset ownership, absence of violence, not above age 50 (f) belonging to OBC, having high education, absence of asset ownership, low education of spouse, not above age 50 (g) having high education, absence of violence, age above 50 (h) belonging to OBC, having high education, absence of asset ownership, absence of violence.

The csQCA models reflect the similarities and differences between the two types of informal workers in their pathways to TM. Among the peeling workers, women who are separated and widows are notably having TM. While among fish vendors absence of violence is a notable feature that can lead to TM in a nuclear marital household. The causal mechanisms to TM prove the presence of patriarchal norms and structures which inhibit and constrain the mobility of women and their pathways to TM in the case of both peeling workers and fish vendors.

8.1.4 Substantive theories of informal workers

What are the theories that emerge from the experiences of peeling workers and fish vendors which reflect transformational mobility as capability?

The classic grounded theory has helped in unravelling the emergence of the substantive theory of subordinating self of the peeling workers. The theory explicates the interactions of multiple factors as expressed in the social, economic and individual spheres reinforcing the subordinating self and acting as barriers to the development of autonomy and agency of peeling workers. The agency aspect which is one of the key concepts in the CA (Capability Approach) also emerges from this theory of subordinating self of peeling workers wherein the women peeling workers lack the negotiating power, competence and are submissive to authority to bring on changes in their own working conditions and life. Thus the theory
captures the dimensions of interactions of gender in the private and social spheres in such a manner which prevents them from developing ‘agentic’ behaviour to bring about changes, which they have reasons to value. The theory of subordinating self also points to the lack of agency at the collective levels in the case of peeling workers. The mobility associated with work has not improved the well-being freedoms for peeling workers as their ‘domains of activity’ are peeling sheds which are fragmented work places with very poor working conditions. This has adversely affected the self-esteem and aspirations of peeling workers who are controlled by a patriarchal male dominated supervisory set up within these peeling sheds.

In contrast, among the fish vendors, the theory of self-categorisation which emerges from the grounded theory analysis of interview data reflects the sense of group identity of women which help them in manoeuvring through the complexities of patriarchal structures and norms inherent in the cultural context of fishing community. Women fish vendors identify themselves as self-employed entrepreneurs and have strong sense of group and gender identity. Even though the individual agency is not manifested at the household level which is discernible from the presence of spousal violence and absence of TM, the collective agency of women fish vendors is notable with substantial achievements brought by their collective action in their work environment through negotiating with the government and through the cooperatives of women fish vendors. The sense of identity, better bargaining skills, manoeuvrability, visibility in public spaces and wider interactions have enabled women fish vendors to have collective agency and develop self-esteem, aspirations and the capability to manoeuvre through patriarchal structures as a group.

In the following section I discuss the main contributions of my thesis towards the development of theory and methodology in the discipline of development studies.

8.2 Theoretical Contribution

There are two substantial contributions which my study has made to the development of theory. They are:

(i) Mobility as capability and operationalisation of CA
(ii) The discovery of two substantive theories of informal workers

8.2.1 Mobility as capability and operationalisation of CA
The most important theoretical contribution of my thesis is the re-conceptualisation of mobility (TM) as capability by operationalising the Capability Approach (CA). Adopting CA helped in recognising work mobility as a ‘functioning’ for women which is a survival necessity for poor informal workers. It is only TM (transformational mobility) which is ‘capability’ and enhances the opportunities and improves the well-being freedoms of women workers. By conceptualising TM as capability, I have unravelled the linkages between mobility and autonomy of women in the context of informal work. Though mobility as capability has been acknowledged by scholars in the lists of capabilities (Robeyns, 2003; Nussbaum, 2005), not much in-depth research has been done to analyse its multiple domains in the context of gender. The studies in the areas of gender-mobility-capability can have important consequences for research in gender and justice which can help in analysing issues of social exclusion, gender discrimination and inequalities (Kronlid, 2006).

The CA adopted in this study is not atomistic or individualistic in analysing women workers but rather analyses their mobility and autonomy in a relational sense given the cultural context of Kerala. I have captured the domains of gendered mobility as experienced by women in the socio-cultural context of India which reflects ‘bounded capabilities’ that is, capability bounded by social norms and patriarchal authority. By using the mobility ladder and examining the social and spatial mobility of women workers to reach TM as capability, I have brought forth the intrinsic importance of mobility for women and how patriarchal structures can dominate the mobility spaces of women. To view ‘development as freedom’ (Sen, 1999) it is important to recognise the value of transformational mobility of women workers which enhances the freedoms and choices for women within the household and that which can lead to autonomy and agency outside the household. Though paid work can be said to improve agency (Sen, 1999), my study proves that paid work and the associated mobility is ‘bounded capability’ in the context of low paid informal work which does not necessarily promote agency. Thus my study enhances the understanding of mobility of women associated with paid work and the related domains while introducing the new concept of TM with the help of CA. Further research can be done to enhance the understanding of capabilities in the evaluative space of informal work by examining for instance, capability to aspire of women workers which will add more value to the operationalisation of CA.

8.2.2 Substantive theories of informal workers

The two substantive theories that emerge from the grounded theory analysis of interview data contribute to the understanding of wage workers and self-employed workers in informal work.
settings. The theory of subordinating self of peeling workers who are piece rate workers is a substantive theory which identifies the multiple levels of ‘subordination’ reinforcing interactions that women undergo both within and outside the household which prevent development of agency. The theory reflects the oppression and exploitation that arise in patriarchal settings along with the absence of aspirations, lack of collective agency and conformity to structures that perpetuate subordination.

The self-categorisation theory of fish vendors is the second substantive theory which enhances the understanding of self-employed women. The theory identifies the significance of ‘group identity’, sense of self-esteem and identity to promote the development of collective agency which can improve conditions at work even in the absence of individual agency. The greater mobility and the consequent visibility in public spaces facilitated by the nature of their work have improved their aspirations and confidence to voice their concerns collectively as a group. These theories will be of interest to scholars who would like to research on women workers in different work settings, for instance, women in formal versus informal work, service sector versus manufacturing sector, and examine how the autonomy and agency of women workers are played out in multiple ways.

8.3 Contributions to Methodological Development

Methodologically this thesis has contributed to the development of mixed methods research design. The operationalisation of capability approach has been made possible by adopting innovative methods for measurement and analysis of mobility of women by integrating both quantitative and qualitative methods which advanced, supplemented and corroborated the understanding of the concept of transformational mobility.

8.3.1 Methodological triangulation

Another contribution of my thesis is the critical realist approach in its ‘depth realist’ version that I have adopted in this mixed methods study. The critical realists’ world operates in a multi-dimensional open system with effects that occur due to the interactions between social structures, mechanisms and human agency (McEvoy and Richards, 2006). To develop deeper levels of explanation and understanding which is the main aim of critical depth realist approach (ibid, 2006) I have adopted ‘methodological triangulation’ by combining quantitative and qualitative methods.
Data integration is one of the core criteria which is at the heart of mixed method research design (Cresswell et al., 2003) and it is critical where the data from different methods are integrated for analytical exposition. I have employed mixed method design not just for adopting different methods for ‘convergent validity, but also for ‘analytic density’ (or richness) by putting different methods in dialogue (Fielding, 2012) through data integration. Towards this, I have integrated the Rasch person measures by basing the person measure from the measurement model to generate the dichotomous crisp set of TM for csQCA. Then the crisp set of TM is analysed using QCA which uncovers the causal mechanisms and the multiple pathways that lead to TM among peeling workers and fish vendors. This methodological triangulation in my study has provided the depth of understanding along with illustrating the use of data integration by combining the measurement model and QCA with the depth realist ontological and epistemological stance.

The analysis I present in the thesis is based on both the survey data (N=150) and the qualitative interviews (N=20) of informal women workers. The quantitative analysis of survey data has aided in constructing the measuring scale of mobility of women and the analysis of the determinants of mobility of women workers and also the base for the selection of cases for qualitative interviews. The qualitative analysis of interviews has resulted in the discovery of two substantive theories of peeling workers and fish vendors, namely, theory of subordinating self and theory of self-categorisation. Qualitative interviews have also thrown light on the constraints faced by women in various domains of mobility and the levels of permissibility as experienced by women workers.

The mixed method research design along with depth realism facilitated the use of qualitative interviews to substantiate the quantitative findings. The qualitative interviews provided further insights into the relational nature of autonomy of women and its multidimensional aspects. The triangulation of survey and interview data has also served the purpose of confirming the empirical findings based on quantitative analysis and completeness of the research by providing detailed observations for making retroductive inferences about the causal mechanisms based on qualitative analysis.

8.3.2 An innovative scale to measure mobility of women

An important contribution of my study of mobility to methodology is the development of the scale for the measurement of mobility of women workers which I have constructed using the Rasch RSM. Rasch RSM is a method applied for the first time in the measurement of
mobility of women as a single construct in the development studies discipline. Based on a survey of informal women workers in fisheries, who are hard to reach communities, in Kerala, the measure of mobility of women has assisted to examine whether work mobility is a ‘capability’ for women in terms of expanding freedoms and to understand the various domains of gendered mobility. It is a scale which can be replicated for women workers in different social and cultural contexts as well.

8.3.3 Qualitative Comparative Analysis

In the analysis of social phenomena there has always been a tug of war between the followers of quantitative and qualitative methods. In this study I have adopted an innovative and promising comparative case study method that is the csQCA (crisp set Qualitative Comparative Analysis) which is both ‘case oriented’ and ‘variable oriented’ at the same time. The QCA of pathways to high mobility and TM is an important methodological contribution of my study and will be of value for those scholars interested in mixed methods research. Based on systematic analysis using Boolean set theoretic logic, csQCA brings forth the complexity of causal conditions in the analysis of pathways to high mobility and TM of women in a contextual and case oriented manner. The csQCA Models unearthed the complex configurations or causal mechanisms that lead to the presence of TM among informal women workers in contrast to the regression techniques which single out factors which determines particular outcome. In addition, the causal asymmetry which is revealed by the csQCA models further elaborates the causal pathways to the absence as well as the presence of TM.

The csQCA highlighted the significance of social and human capital factors, namely, low education of spouse, widowhood, asset ownership by women, absence of spousal violence and other conditions as causal pathways to TM in a case oriented manner which further the understanding of transformational mobility.

8.4 Policy Implication of Research Findings

In this thesis I have analysed the concept of mobility of women workers and the relationship between mobility and autonomy in the light of two types of informal women workers in fisheries. The use of the capability approach framework furthered the understanding and meaning of mobility by taking it to the existential level as a capability which enhances freedoms in the real sense. The research findings that emerge on the basis of the analysis of mobility in terms of devising measurement scale, modelling determinants of work mobility in
informal settings, analysis of causal pathways to TM and substantive theories of informal workers have implications for policy for women workers at the micro and macro levels. The main implications of my research findings are as follows:

8.4.1 Work mobility do not always lead to autonomy of women

First, mobility is gendered. The measurement scale of mobility of women reflects differential and gendered mobility in the context of women workers. The domains of mobility which are most permissible and least permissible for women workers highlight the constraints on mobility for women. I have explored mobility not only as a ‘functioning’ but also as ‘potential mobilities’ that women can undertake as a ‘capability’ that can enhance opportunities using TM. The various steps to TM of women in the mobility ladder reflect the social and cultural barriers that women face within the patriarchal household settings. Therefore, differentiated mobility or gendered mobility is a reality for women workers. This mobility aspect can be further developed, replicated and used for comparative analysis in multiple contexts. Gender as a social construct is constituted by the narratives of mobility and immobility (Uteng and Cresswell, 2006). There are social and cultural barriers to mobility of women in community, work and public spaces as evidenced in my study. Though the contribution of women in economic development is being recognised widely and the engagement of women in labour market is a desired outcome, the socially constructed gender norms act as constraints on mobility which prevent participation in labour market and public life.

Second, having work mobility by itself does not indicate greater overall mobility or well-being freedoms. Moreover as seen in the case of informal workers, work mobility has not resulted in autonomy and agency. Work being a survival necessity for the women of marginalised fishing community in Kerala, understanding their lack of autonomy in relation to work can illuminate the ways in which oppression of women erodes their wellbeing and stifles their capabilities (Veltman, 2014). Therefore, using work mobility or movement outside household for paid work by women as an indicator of autonomy is suspect. Work mobility is a necessity for livelihood for women in low income households and it is not necessarily an indicator of autonomy and agency. Promoting meaningful work can improve the autonomy and agency of women and towards this the nature and quality of work is preeminent.

8.4.2 Caste and education as key determinants of informal work
In fisheries work, caste emerges as a significant determinant of work mobility of women. The other factors are age of women, education level of spouse and Rasch mobility measure. Caste orientation of informal work is still prevalent as evidenced in the study and majority of women workers who dominate the low paid informal work belong to the OBC. Therefore the findings reiterate the marginalised status of informal women workers and the intersectionality between gender and caste which play a crucial role in determining the type of work chosen by women in fisheries.

The marginalised communities are likely to be socially excluded and thereby the caste-occupation link remain strong in the absence of education and skill development. Education is a significant factor which has improved the status of lower castes in many instances, and the contemporary situation can be said to be one where there is a permutation of an earlier caste structure where the link between caste and occupation remain strong in some castes, and weak in others (Subedi, 2013). However, the low levels of education of informal women workers proves detrimental to their ability to de-link from the low paid work in fisheries.

The human capital factors like education and skills are important determinants of informal work by women. Majority of the women who are in informal work have very low levels of education which prevent skill development and make them continue to undertake low paid exploitative and degrading work like peeling work. Therefore, providing facilities for education and skill development can help transform the lives of the informal women workers. Among the self-employed fish vendors the levels of education are very low with 5% illiterate respondents and more than 50% respondents having below higher secondary school education in my sample. As noted by scholars, ‘self-employment cannot be seen as a testimony to the entrepreneurial spirit of people always, it is rather a symptom or reflection of the dramatic failure of the economies in which they live to provide them with something better’ (Banerjee and Duflo, 2011:226).

8.4.3 Peeling workers as vulnerable workers in post-harvest fisheries

The market oriented changes in modes of production, the fragmented nature of workplace, the hierarchical structure of work setting and the lack of availability of time for mobilisation and collective action among workers prevent the development of agency among the peeling workers who can be categorised as ‘vulnerable workers’. Low paid wages, unhealthy

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60 Peeling workers are vulnerable in multiple aspects. As per ILO definition, vulnerable workers are unable to access statutory minimum standards of work and labour rights, have sustained low earnings,
conditions of work and gender norms and sex segregation at work are the notable features that reflect the lack of individual and collective agency at informal work settings of peeling work. Many women workers suffer from aspiration failures as well. The predominance of women in peeling work make them vulnerable to the hierarchical structure of the companies which replicate the patriarchal structure embedded in the society (see section 3.5.1. on peeling workers). The degrading nature of work and the social stigma of peeling work leads to further subjugation and the workers lack self-esteem and self-respect which adversely affects their bargaining power vis-à-vis their employers.

As allied workers in informal post-harvest fisheries, the coverage of peeling workers by the State’s social protection and other welfare schemes remains negligible in fisheries. Therefore, to reduce vulnerability of peeling workers, policies need to be devised to strengthen the bargaining position of workers vis-à-vis employers, to set up co-operatives as in the case of fish vendors to assist in developing collective agency and sense of group identity to assert their rights as key workers in the production chains.

From the policy perspective it is important to take cognisance of the vulnerability of low skilled women workers and the lack of supportive societal structures in the socio-cultural context for women to have an enabling environment to develop and exercise their autonomy and agency. Along with setting regulatory standards and norms with strict compliance measures in informal work settings, support structures for enabling ‘collective agency’ and skill development for women workers with the help of cooperatives will go a long way in improving women’s wellbeing freedoms and agency.

8.4.4 Facilitating collective agency of informal women workers

Promoting collective agency is the key to improve informal work settings for women workers in the absence of individual agency and autonomy. The comparative analysis of self-employed fish vendors and casual peeling workers reveals that self-employed fish vendors are better off in terms of working conditions and are effective as a group in bringing about changes in their work place owing to collective agency. In the case of informal peeling workers, their affiliation to the domestic and global production chains in the seafood

lack social protection measures and lack access to non-statutory benefits like sickness leave etc. Saunders (2003) defines ‘vulnerable workers as those whose participation in the labour market leaves their well-being at risk, because they have difficulty accessing work that is decently paid and/or offers conditions of work that meet basic social norms.’
processing industry has not translated into better working conditions, and they remain as vulnerable workers.

The macro policies of export promotion and cost cutting strategies of pre-processing industry have resulted in worsening of working conditions as companies have outsourced peeling work to informal units and smaller companies which avoid and remain outside the ambit of the labour regulatory framework. The fragmented work places, the demeaning nature of work and the absence of employer-employee relations prevent peeling workers from developing collective agency. Therefore, the peeling workers as allied workers of fisheries remain marginalised by the market and the state.

In contrast, the self-employed fish vendors have been able to set up fish vendor’s cooperatives with the support of the government through continuous and sustained demands for recognition of their rights as vendors. As noted in chapter VII (see section 7.5.), the group identity and collective agency of women fish vendors have aided them in improving their working conditions. The collective agency of fish vendors has facilitated improvements in the working conditions and has effected changes in policy towards fish vendors identified as an important group of self-employed women vendors. These findings reinforce the claims that the self-employment of women has stronger correlation with indicators of agency than the informal wage employment of women. The transformative potential for women workers is greater in formal and semi-formal employment than the informal forms of work settings as noted in various studies (Kabeer et.al, 2011).

Paid work outside the household, that is work mobility, need not enhance the capabilities of women workers. It depends on the nature of work, the collective efforts of workers and the support by the government to initiate measures to implement labour rights. Therefore, it is imperative to understand the complex interactions of gender, caste, socio-cultural factors and the market mechanisms to devise policies to assist vulnerable workers like peeling workers to improve their agency and thereby their working conditions and well-being.

8.5 Concluding Remarks

The main aim of my thesis has been to analyse mobility associated with informal work and whether it is transformational for women in terms of improving autonomy in mobility and household autonomy. The main conclusions that I derive from my thesis based on the findings are stated below.
Firstly, work mobility that is mobility associated with informal work does not necessarily improve autonomy in mobility and well-being freedoms for women. Mobility or ‘freedom and ability to move’ is gendered and women face constraints on mobility even in socially advanced cultural settings like Kerala. Mobility is just a functioning and not a capability which enhances the opportunities for women workers. Mobility associated with work is ‘constrained mobility’ for women in informal work and is ‘bounded capability’ which does not enhance freedoms.

Secondly, transformational mobility (TM) is a capability and it is distinctly absent among majority of informal women workers. Transformational mobility is a capability, which is necessary to improve well-being freedoms of women. Work mobility is not a sufficient condition to ensure high mobility and TM. The pathways to TM are complex and reflects the intricate combinations of conditions. The combinations of conditions reflect the significance of asset ownership, absence of patriarchal authority, age of women, marital status and education as significant conditions that can lead to TM. Patriarchal domination through spousal violence is one of the major restraints on the pathway to TM.

Thirdly, there are various social and cultural factors that influence the mobility of women in a given socio-cultural setting and that which inhibit or constrain the mobility of women. In this study, it is found that the individual, household and social factors like age, caste and lower education of spouse are the main determinants of mobility of women. Elderly women have greater mobility in comparison to the younger women workers. Lower education of spouse is another factor that improves mobility of women.

Fourthly, the perception of autonomy of women workers is closely related to their TM. There exists positive relationship between TM and autonomy of women workers. Autonomy in mobility which is TM, is a pathway to household autonomy. Greater mobility in social, community and public spaces without patriarchal domination confer greater sense of autonomy as evidenced in the case of widows and separated women.

Fifthly, the experiences of self-employed fish vendors and peeling workers are a study in contrast in terms of their divergent work experiences. The nature and type of informal work have a significant influence on the negotiating power of women in their work environments. In the case of peeling workers, the patriarchal structures are replicated in the work place and reinforce the gender relations embedded in the society. The subordinated position of peeling workers at the bottom end of the production chain results in sustained low earnings, lack of
bargaining power and exploitation. Thus work mobility does not entail autonomy. The lack of agency is a critical feature of peeling workers’ experience. On the other hand, the self-employed fish vendors, have greater mobility and their interactions in the public and social spaces have improved their group identity and collective agency which have enabled them to negotiate for better working conditions. Therefore, the nature of work and the type of work mobility are critical components for the development of agency to effect changes. In the absence of individual agency in patriarchal social settings, it can be the collective agency of women that can bring about the desired changes in working conditions, as in the case of fish vendors.

The conceptualisation of mobility of women by introducing the new concept of transformational mobility (TM) has provided an alternative theoretical understanding of gendered mobility in a given cultural context. Despite the advocacy for greater participation of women in paid work outside the household to improve autonomy and agency, work mobility does not enhance capabilities and well-being freedoms in all the cases. The complex interactions of caste, lack of human capital and gender in patriarchal work settings result in subordinated position of women within the household and at the work place. Expansion of capabilities through work mobility can be ensured in the absence of oppression, exploitation and enhanced opportunities for betterment of living and working conditions. For women workers who are marginalised by state and market in a patriarchal social structure, collective action becomes necessary for the expansion of capabilities in the context of informal work.


Sugden, R. (2006). ‘What we desire, what we have reason to desire and whatever we might desire: Mill and Sen on the value of opportunity’, *Utilitas*, Vol 18(01), pp. 33-51


10.1 Appendix A: Location Map of Sakthikulangara village in Kerala, India

Source: http://www.kollam.nic.in/
10.2 Appendix B: Questionnaire for Peeling Workers

A. Demographic and other particulars of the Worker

1. Name of the worker: 
2. Age as on the date of survey: 
3. Sex (Male-1; Female-2): 
4. Address of the Residence and the place of work: 
5. Marital Status (Unmarried –1; Married–2; Widowed –3; Divorced–4; Separated-5): 
6. Religion (Hindu –1; Christian- 2; Muslim-3; Others (specify)- 4): 
7. Category (General –1; SC –2; ST –3; OBC- 4; Others (specify) –5) (specify the caste name): 
8. Educational Status: 
   (Illiterate –1; Below Primary-2; Primary –3; Middle-4; Higher Secondary-5; Pre Degree- 6; Graduate and above-7) 
9. Technical Educational qualification, if any (Certificate-1; Diploma-2; Degree-3; Others (specify)-4): 

B. Details of Family Background of the worker

10. Details of the Family:

<table>
<thead>
<tr>
<th>Name of the members of the household</th>
<th>Relationship with the worker</th>
<th>Age</th>
<th>Sex</th>
<th>Main Occupation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

*Some of the Questions on mobility and domestic violence have been taken from Hasan & Menon (2004); some questions are also based on SWAF project questionnaires.

11. Monthly earnings of members of the household:

<table>
<thead>
<tr>
<th>No. of male earning members</th>
<th>No. of female earning members</th>
<th>Monthly earnings (in Rs.) of male members</th>
<th>Monthly earnings (in Rs.) of female members</th>
<th>Any other income- monthly rent/business/ (in Rs.)</th>
<th>Gross Monthly Household earnings (in Rs.)</th>
<th>Net Monthly Household earnings (in Rs.)</th>
</tr>
</thead>
</table>
12. Monthly/Annual Household Expenditure:

<table>
<thead>
<tr>
<th>Items</th>
<th>Quantity</th>
<th>Value in Rs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food (monthly)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-food (monthly)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total monthly Household Expenditure (in Rs.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational expenses (Annual)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical expenses (Annual)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durable goods (annual)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entertainment (annual)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Ceremonies (annual)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any other (Specify)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13. Type of Assets owned by the Household and Pattern of ownership

<table>
<thead>
<tr>
<th>Type of property (Use code)</th>
<th>Number/Acres</th>
<th>Sources of Acquisition (Use code)</th>
<th>Approximate Value# (in Rs.)</th>
<th>Specify the Ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

# market value of the asset as on the date of survey

Codes:

Col.1: House – 1; Land – 2; Cattle/Livestock – 3; Jewelry – 4 ; Others (specify)- 5

Col.3: Ancestral – 1; Purchased / Constructed – 2; Allotted by Government at subsidized rates – 3; Allotted by government on hire-purchase basis – 4; Others (specify) – 5

14. Indebtedness:

<table>
<thead>
<tr>
<th>No. of loans</th>
<th>Total amount</th>
<th>Nature of Loan</th>
<th>Purpose of Loan</th>
<th>Source of Loan</th>
<th>Mode of repayment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Borrowed initially</td>
<td>Outstanding</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>
C. Details of Employment

15. Length of service at the unit (in Years, Months) : 

16. Whether direct or contract worker (Direct – 1; Contract – 2) : 

17. How did you get the job? (Through contractors-1; Own efforts-2; Through cooperatives-3; Others (specify)-4)

18. Details of wage rate of the worker:

<table>
<thead>
<tr>
<th>Scale/ Rate</th>
<th>Are you skilled or unskilled?</th>
<th>Pay Period (Use code)</th>
<th>Are the payments regular?</th>
<th>Total Earnings for the pay period immediately preceding the date of visit (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Code for Col.2: Skilled-1; Unskilled-2
Code for Col.3: Daily-1; Weekly-2; Fortnightly-3; Monthly-4; Others (specify)-5
Code for Col.4: Yes-1; No-2

19. Do you get any incentives either in cash or in kind besides wages? If yes, specify : 

20. Do you get wages as per minimum wage rates? (Yes-1; No-2) : 

21. When did you last receive increment in wages? : 

22. How often do you receive increments? :
23. Is there differences between wages paid for male and female workers for the same task?  
(Yes-1; No-2): 

24. Duration of work in the unit:

<table>
<thead>
<tr>
<th>Type of tasks performed</th>
<th>Timings Of Shifts</th>
<th>Daily Hours of work</th>
<th>Spread over</th>
<th>Duration of rest interval</th>
<th>Weekly hours of work</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>From To</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

25. Types of tasks undertaken in the unit

<table>
<thead>
<tr>
<th>Mention the types of Tasks performed in the unit</th>
<th>Only By males</th>
<th>Only By females</th>
<th>Whether males or female workers are preferred?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Males-1; Females-2)</td>
</tr>
<tr>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>

26. Do you get any training for upgrading your skills? (Yes-1; No-2) If yes, specify: 

27. Do you get leaves and holidays with pay? (Yes-1; No-2): 

28. Do you think introduction of machines will affect your job in the unit? (Yes-1; No-2): 

D. Domestic and Personal Life:

29. Do you feel stress at home or at workplace? (At home-1; At workplace-2; Both-3; None-4): 

30. Does your husband provide help willingly in your domestic work? (Yes-1; No-2): 

31. Does the family approve of your working outside? (Yes-1; No-2): 
32. Average time spent daily on the following household tasks:

<table>
<thead>
<tr>
<th>Types of Household tasks</th>
<th>Average time spent daily (in hours) by</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Respondent</td>
</tr>
<tr>
<td>Codes</td>
<td>1</td>
</tr>
<tr>
<td>i. Cleaning</td>
<td></td>
</tr>
<tr>
<td>ii. Laundry</td>
<td></td>
</tr>
<tr>
<td>iii. Buying vegetables etc.</td>
<td></td>
</tr>
<tr>
<td>iv. Cooking</td>
<td></td>
</tr>
<tr>
<td>v. Personal care</td>
<td></td>
</tr>
<tr>
<td>vi. Childcare</td>
<td></td>
</tr>
<tr>
<td>vii. Miscellaneous (carrying water)</td>
<td></td>
</tr>
</tbody>
</table>

33. Do you combine your income with that of your spouse & retain some for personal expenses? (Yes-1; No-2)

34. Do you face any domestic violence at home? (Yes-1; No-2)

35. Did you marry by paying dowry to the family? (Yes-1; No-2)

36. Do you follow any family planning method? (Yes-1; No-2)

37. Do you trust each other for handling income and expenditure? (Yes-1; No-2)

38. Are you able to save from your income?, if yes, is it based on your own decision? (Yes-1; No-2)

39. Is it that circumstances have made you take up work and personally you wish to devote your time on family?

**E. Mobility**

40. Do you require permission to go outside the house? (Yes-1; No-2)

<table>
<thead>
<tr>
<th>If Yes, do you require permission to go outside the house for the following purpose?</th>
<th>Always-1</th>
<th>Someti mes-2</th>
<th>Rarely-3</th>
<th>Not at all-4</th>
</tr>
</thead>
</table>

### Basic Tasks
- Going to work
- For work-related activities
- Going to market

### Business type tasks
- Going to doctor/health centre
- For religious meeting
- For social or cultural meeting

### Family/Social Visits
- For natal home visit
- To meet friends

### Special Occasional Visits
- For demonstration
- Going to cinema/theatre
- Going to election meeting

<table>
<thead>
<tr>
<th>Items/Codes</th>
<th>Respondent</th>
<th>Husband</th>
<th>Senior Male</th>
<th>Senior Female</th>
<th>Others</th>
<th>No one</th>
</tr>
</thead>
<tbody>
<tr>
<td>Codes</td>
<td>i. Going to work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>ii. For work-related activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>iii. Going to market</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>iv. Going to doctor/health centre</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>v. For religious meeting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>vi. For social or cultural meeting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>vii. For natal home visit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>viii. To meet friends</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ix. Going to cinema/theatre</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>x. Going to election meeting/ For political demonstration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### F. Decision Making in the Family

42. In your family, who makes the major decisions on the following?

<table>
<thead>
<tr>
<th>Items/Codes</th>
<th>Respondent</th>
<th>Husband</th>
<th>Senior Male</th>
<th>Senior Female</th>
<th>Others</th>
<th>No one</th>
<th>Greatest Say in decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Codes</td>
<td>i. Who decides how overall household income is spent?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>
ii. Who decides on children’s education?
iii. Major purchases – house, property, gold etc.
iv. Major investment – in business, savings
v. Decision regarding occupation/work
vi. Size of the family
vii. Decision regarding marriage in the family
viii. Ceremonies – death, birth
ix. Travel
x. Treatment of illness

43. In the following items, are you consulted usually with regard to decisions related to them?

<table>
<thead>
<tr>
<th>Items on which you are consulted</th>
<th>Yes-1</th>
<th>No-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. Household expenditure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii. Children’s education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>iii. Major purchases-land, property, gold</td>
<td></td>
<td></td>
</tr>
<tr>
<td>iv. Major investment-business, savings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>v. Marriage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>vi. Birth ceremonies/Death ceremonies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>vii. Size of the family</td>
<td></td>
<td></td>
</tr>
<tr>
<td>viii. Treatment of major illness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ix. Travel</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

G. Background Information on Husband

44. How old was your husband on last birthday?
45. Did your husband ever attend school? (Yes-1;No-2)

46. What is the highest level of education completed by your husband?

47. What kind of work your husband mainly did in the past one year?

<table>
<thead>
<tr>
<th>Types of work done by your husband</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fisherman</td>
<td>1</td>
</tr>
<tr>
<td>Port worker</td>
<td>2</td>
</tr>
<tr>
<td>Coolie (Daily wage earner)</td>
<td>3</td>
</tr>
<tr>
<td>Agricultural labourer</td>
<td>4</td>
</tr>
<tr>
<td>Unskilled labourer</td>
<td>5</td>
</tr>
<tr>
<td>Skilled labour (specify)</td>
<td>6</td>
</tr>
<tr>
<td>Other service sector job</td>
<td>7</td>
</tr>
<tr>
<td>(specify)</td>
<td></td>
</tr>
</tbody>
</table>

48. Comment on any other work related or domestic life related issue which you would like to raise from the point of view of women workers

49. “Some people feel that they have completely free choice and control over their lives, while other people feel that what they do has no real effect on what happens to them. Imagine a ten step ladder where on the bottom, the first step, stand people who are completely without free choice and control over the way their lives turn out, and on the highest step, the tenth, stand those with the most free choice and control.”

   a. On which step are you today?

   _1___2____3____4____5____6_____7____8____9____10_   TEN STEP LADDER

Date of Survey: 
Signature of Interviewee:
10.3 Appendix C: Questionnaire for Fish Vendors

A. Demographic and other particulars of the Vendor

1. Name of the worker:

2. Age as on the date of survey:

3. Address of the Residence and the place of work:

4. Marital Status (Unmarried –1; Married-2; Widowed –3; Divorced-4; Separated-5):

5. Religion (Hindu –1; Christian- 2; Muslim-3; Others (specify)- 4):

6. Category (General – 1; SC – 2; ST –3; OBC- 4; Others (specify) –5) (specify the caste name):

7. Educational Status:
   (Illiterate –1; Below Primary-2; Primary –3; Middle-4; Higher Secordary-5; Pre Degree- 6;Graduate and above-7)

8. Technical Educational qualification, if any (Certificate-1; Diploma-2; Degree-3; Others (specify)-4):

B. Details of Family Background of the worker

9. Details of the Family:

<table>
<thead>
<tr>
<th>Name of the members of the household</th>
<th>Relationship with the worker</th>
<th>Age</th>
<th>Sex</th>
<th>Main Occupation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

*Some of the Questions on mobility and domestic violence have been taken from Hasan & Menon (2004); questions are also based on SWAF project questionnaires.*

---

61 Some of the Questions on mobility and domestic violence have been taken from Hasan & Menon (2004); questions are also based on SWAF project questionnaires.
10. Monthly earnings of members of the household:

<table>
<thead>
<tr>
<th>No. of male earning members</th>
<th>No. of female earning members</th>
<th>Monthly earnings (in Rs.) of male members</th>
<th>Monthly earnings (in Rs.) of female members</th>
<th>Any other income-monthly rent/business/</th>
<th>Gross Monthly Household earnings (in Rs.)</th>
<th>Net Monthly Household earnings (in Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11. Monthly/Annual Household Expenditure:

<table>
<thead>
<tr>
<th>Items</th>
<th>Quantity</th>
<th>Value in Rs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food (monthly)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-food (monthly)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total monthly Household Expenditure (in Rs.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational expenses (Annual)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical expenses (Annual)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durable goods (annual)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entertainment (annual)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Ceremonies (annual)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any other (Specify)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12. Type of Assets owned by the Household and Pattern of ownership

<table>
<thead>
<tr>
<th>Type of property (Use code)</th>
<th>Number/Acres</th>
<th>Sources of Acquisition (Use code)</th>
<th>Approximate Value# (in Rs.)</th>
<th>Specify the Ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

# market value of the asset as on the date of survey

Codes:
- Col.1: House –1; Land – 2; Cattle/Livestock – 3; Jewelry – 4 ; Others (specify)- 5
- Col.3: Ancestral – 1; Purchased / Constructed – 2; Allotted by Government at subsidized rates – 3; Allotted by government on hire-purchase basis – 4;
- Others (specify) – 5

13. Indebtedness:
C. Details of Working Conditions and other Facilities for Fish Vendors

14. Are there transport facilities to market?

15. For how long (in years/months) have you been vending fish?

16. Did your mother do fish vending work (traditionally)?

17. If yes, means of transport used during the last one month :
   a. Primary mode
   b. Secondary
   c. Others

18. How many houses do you cover per day?

19. What is the mode of transport while selling to households?

20. What is the average kilometres covered per day?

21. Do you get fish on credit from wholesale merchants?

22. What is the average margin/profit from everyday sale?

23. Does it cover the daily expenses of the household?

24. Are there off-season schemes for fish vendors by the Government?

D. Domestic and Personal Life:

25. Does your husband provide help willingly in your domestic work?(Yes-1; No-2)
26. Does the family approve of your working outside? (Yes-1; No-2)

27. Do you follow any family planning method? : 
(Yes-1; No-2)

28. Do you have voice in deciding the size of the Family? (Yes-1; No-2)

29. Average time spent daily on the following household tasks:

<table>
<thead>
<tr>
<th>Types of Household tasks</th>
<th>Average time spent daily (in hours) by Respondent</th>
<th>Husband</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Codes</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>i.Cleaning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii.Laundry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iii.Buying vegetables etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iv.Cooking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>v.Personal care</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vi.Childcare</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vii.Miscellaneous (carrying water)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

30. Do you combine your income with that of your spouse? (Yes-1: No-2) : 

31. Do you face any domestic violence at home? 
(Yes-1; No-2)

32. Did you marry by paying dowry to the family? 
(Yes-1; No-2) :

33. Do you trust each other for handling income and expenditure? (Yes-1; No-2) :

34. Are you able to save from your income? (Yes-1; No-2) :

E. Mobility

35. Do you require permission to go outside the house?

<table>
<thead>
<tr>
<th>If Yes, do you require permission to go outside the house for the following purpose?</th>
<th>Always-1</th>
<th>Sometimess-3</th>
<th>Rarely-3</th>
<th>Not at all-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Tasks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Going to work</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>For work-related activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Going to market</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business type tasks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Going to doctor/health centre</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>For religious meeting</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
36. If yes to any Question in No.40, whose permission is required?

<table>
<thead>
<tr>
<th>Items/Codes</th>
<th>Respondent</th>
<th>Husband</th>
<th>Other Senior Male</th>
<th>Senior Female</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Codes</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>i. Going to work</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii. For work-related activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iii. Going to market</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>iv. Going to doctor/health centre</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>v. For religious meeting</td>
<td></td>
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<td></td>
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<tr>
<td>vi. For social or cultural meeting</td>
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<tr>
<td>vii. For natal home visit</td>
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<tr>
<td>viii. To meet friends</td>
<td></td>
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<tr>
<td>ix. Going to cinema/theatre</td>
<td></td>
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<tr>
<td>x. Going to election meeting/ For political demonstration</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

F. Decision Making in the Family

37. In your family, who makes the major decisions on the following?

<table>
<thead>
<tr>
<th>Items/Codes</th>
<th>Respondent</th>
<th>Husband</th>
<th>Senior Male</th>
<th>Senior Female</th>
<th>Others</th>
<th>Greatest Say in decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Codes</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>CODE</td>
</tr>
<tr>
<td>i. Who decides how overall household income is spent?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii. Who decides on children’s education?</td>
<td></td>
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<tr>
<td>iii. Major purchases – house, property, gold etc.</td>
<td></td>
<td></td>
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<tr>
<td>iv. Major investment –</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
in business, savings
v. Decision regarding occupation/work
vi. Size of the family
vii. Decision regarding marriage in the family
viii. Ceremonies - death, birth
ix. Travel
x. Treatment of illness

38. In the following items, are you consulted usually with regard to decisions related to them?

<table>
<thead>
<tr>
<th>Items on which you are consulted</th>
<th>Always-4</th>
<th>Sometimes-3</th>
<th>Rarely-2</th>
<th>Not at all-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. Household expenditure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii. Children’s education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iii. Major purchases - land, property, gold</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iv. Major investment - business, savings</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>v. Marriage</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vi. Birth ceremonies/ Death ceremonies</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vii. Size of the family</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>viii. Treatment of major illness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ix. Travel</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

G. Background Information on Husband

39. How old was your husband on last birthday?

40. Did your husband ever attend school? (Yes-1, No-2)

41. What is the highest level of education completed by your husband?

42. What kind of work your husband mainly did in the past one year?

<table>
<thead>
<tr>
<th>Types of work done by your husband</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fisherman</td>
<td>1</td>
</tr>
<tr>
<td>Port worker</td>
<td>2</td>
</tr>
<tr>
<td>Coolie (Daily wage earner)</td>
<td>3</td>
</tr>
<tr>
<td>Agricultural labourer</td>
<td>4</td>
</tr>
<tr>
<td>Unskilled labourer</td>
<td>5</td>
</tr>
</tbody>
</table>
43. Comment on any other work related or domestic life related issue which you would like to raise from the point of view of women workers

_______________________________________________________________________

_______________________________________________________________________

44. “Some people feel that they have completely free choice and control over their lives, while other people feel that what they do has no real effect on what happens to them. Imagine a ten step ladder where on the bottom, the first step, stand people who are completely without free choice and control over the way their lives turn out, and on the highest step, the tenth, stand those with the most free choice and control.”

a. On which step are you today?

_1____2____3____4____5____6____7____8____9____10__ TEN STEP LADDER

Date of Survey: Signature of Interviewee:
### 10.4 Appendix D: Semi Structured Questionnaire for Interview and Profile of Cases

1. How important is the informal work of *peeling/fish vending* for your living?
2. Do you think the fish vending/peeling work is having a positive effect on your status both within the household and outside?
3. Kindly explain the important changes you would like to have in your work and work environment.
4. Would you like to pursue the changes that you would like to see? If yes, how?
5. Is your movement outside the household (mobility) always controlled by someone? Explain.
6. Do you think your informal work has helped in increasing your mobility for other personal and social purposes outside the household?
7. How decisions are taken in the household? OR Who in your family usually has the final say on the important decisions taken as regards children, marriage, purchase of house etc? Please explain the process of decision making.
8. Do you think it is acceptable for men to use violence if there are disagreements with their wife? Do you tolerate violence by your husband against you?

#### Profile of Cases

<table>
<thead>
<tr>
<th>Peeling Workers</th>
<th>Age</th>
<th>Marital Status</th>
<th>Education</th>
<th>Religion</th>
<th>Caste</th>
<th>No. of Years in peeling work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sangeetha</td>
<td>39</td>
<td>2</td>
<td>6</td>
<td>1</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Shobhana</td>
<td>39</td>
<td>2</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Beena</td>
<td>38</td>
<td>3</td>
<td>5</td>
<td>2</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Stella</td>
<td>48</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Maniamma</td>
<td>35</td>
<td>2</td>
<td>5</td>
<td>2</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Leela Peter</td>
<td>46</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>Rema</td>
<td>52</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Omana</td>
<td>46</td>
<td>2</td>
<td>5</td>
<td>2</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Bindu</td>
<td>41</td>
<td>2</td>
<td>5</td>
<td>2</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>Anandavalli</td>
<td>54</td>
<td>2</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fish Vendors</th>
<th>No. of years in fish vending</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stella</td>
<td>57</td>
</tr>
<tr>
<td>Laila</td>
<td>55</td>
</tr>
<tr>
<td>Beatrice</td>
<td>45</td>
</tr>
<tr>
<td>Gracy</td>
<td>67</td>
</tr>
<tr>
<td>Judith</td>
<td>55</td>
</tr>
<tr>
<td>Maggie</td>
<td>60</td>
</tr>
<tr>
<td>Reeta</td>
<td>57</td>
</tr>
<tr>
<td>Kusumam</td>
<td>42</td>
</tr>
<tr>
<td>Lisy</td>
<td>38</td>
</tr>
<tr>
<td>Judith</td>
<td>42</td>
</tr>
</tbody>
</table>

Note: *To maintain confidentiality, all names used are pseudonyms.* Code: Marital Status: 2- Married; 3- Widow; Education: Illiterate-1; Below Primary-2; Primary-4; Middle school-4; High school-5; 10 +2- 6; Religion: Hindu-1; Christian-2; Caste: OBC-4; SC-2.
10.5 Appendix E: Histogram of residuals of Model I

![Histogram of residuals of Model I - Determinants of Work mobility](image-url)
### 10.6 Appendix. F: Analysis of Necessary Conditions of csQCA Models

**Necessary Conditions for outcome TM for Peeling workers**

<table>
<thead>
<tr>
<th>Causal condition</th>
<th>Consistency</th>
<th>Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>ageplus50</td>
<td>0.36</td>
<td>0.59</td>
</tr>
<tr>
<td>widsep</td>
<td>0.27</td>
<td>0.66</td>
</tr>
<tr>
<td>obc</td>
<td>0.89</td>
<td>0.47</td>
</tr>
<tr>
<td>abviol</td>
<td>0.84</td>
<td>0.51</td>
</tr>
<tr>
<td>assetown</td>
<td>0.86</td>
<td>0.49</td>
</tr>
<tr>
<td>lowedusp</td>
<td>0.42</td>
<td>0.47</td>
</tr>
<tr>
<td>hedu</td>
<td>0.42</td>
<td>0.44</td>
</tr>
</tbody>
</table>

**Necessary Conditions for outcome TM Negated for Peeling workers**

<table>
<thead>
<tr>
<th>Absence of Causal condition</th>
<th>Consistency</th>
<th>Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>~ageplus50</td>
<td>0.77</td>
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Analysis of Necessary Conditions of TM and TM negated of Fish Vendors csQCA Model

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<tr>
<th>Necessary conditions for outcome TM of Fish Vendors</th>
<th>Causal condition</th>
<th>Consistency</th>
<th>Coverage</th>
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<th>Absence of causal condition</th>
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