Impact of Foreign Affiliation on the Livelihood of Low-Income Rural Households: A Case Study of Pakistan

Thesis submitted in fulfillment of the requirement for the Ph.D. degree in International Development Studies at the Institute of Development Research and Development Policy, Ruhr University Bochum

By

Farah Asif

Supervised by:

Prof. em. Dr. Dieter Bender &

Prof. Dr. Wilhelm Löwenstein

Bochum, October 2014
### Table of Contents

List of Tables.................................................................................................................... v

List of Figures.................................................................................................................. vi

List of Abbreviations....................................................................................................... vii

Acknowledgement .......................................................................................................... Vi

Abstract .......................................................................................................................... x

1  Introduction.................................................................................................................. 1

1.1  Motivation ................................................................................................................ 5

1.2  Scope of the Study..................................................................................................... 9

1.3  Organization of the Study....................................................................................... 10

2  Foreign Affiliation and Poverty: Conceptual Orientation........................................ 11

2.1  Foreign Direct Investment and its Types ............................................................... 11

2.1.1  Foreign Direct Investment and Growth............................................................ 13

2.1.2  Foreign Direct Investment- Growth- Poverty Nexus ......................................... 15

2.1.3  Types of Foreign Direct Investment.................................................................. 17

2.1.4  The Link between Foreign Affiliation and Poverty ......................................... 19

2.1.4.1  Changes in Prices of Exports and Imports.............................................. 19

2.1.4.2  Employment, Income and Prices of Factors of Production .................... 20

2.1.4.3  Government Revenues and Exclusive Programs for Poor ...................... 23

2.2  Conceptualization of Poverty: Definitions and Attributes .................................. 23

2.2.1  Poverty Assessment and Measurement............................................................ 25

2.2.2  Poverty Line....................................................................................................... 26

2.2.3  National Poverty Lines...................................................................................... 27

3  Theoretical Foundation, Research Design and Methodology.................................... 28
3.1 Theoretical Background .......................................................................................28
3.2 Case Study as Experimental Approach of the Empirical Study .........................31
  3.2.1 Counterfactual Impact Evaluation ...............................................................32
  3.2.2 Quasi-perfect Counterfactuals ....................................................................33
3.3 Case Study Design: Questionnaire, Sampling and Survey .................................34
  3.3.1 Questionnaire, Definition of Interview Groups and Sample Size .................35
  3.3.2 Administering the Survey ............................................................................38
  3.3.3 Sampling ......................................................................................................40
4 Profile of the Case Study Area ................................................................................43
  4.1 Profile of Pakistan ............................................................................................43
    4.1.1 Socio-Economic Profile ............................................................................43
    4.1.2 Poverty Trends in Pakistan .......................................................................44
  4.2 Characteristics of Rural Livelihoods ..................................................................45
    4.2.1 Agriculture and Seasonality .....................................................................46
    4.2.2 Gender .......................................................................................................46
  4.3 Field Research Area; Sialkot City ......................................................................47
    4.3.1 The Football Stitching Industry in Sialkot ...............................................48
    4.3.2 Traditional Organization of the Football Stitching Industry .......................50
    4.3.3 Atlanta Agreement ....................................................................................51
    4.3.4 Working Units ............................................................................................52
5 Descriptive Analysis of Low-Income Rural Household’s Data ...............................56
  5.1 Research Variables of the Study .......................................................................56
  5.2 Socio-economic Characteristics of the Rural Community ..................................57
    5.2.1 Availability of Infrastructure in the Community ........................................57
    5.2.2 Availability of Education Facilities in the Community ..............................60
6.3 Ordinary Least Square (OLS) Regression: Four Models .....................................101
6.3.1 Regression 1: Aggregate Data Set.................................................................102
6.3.2 Regression 2: Direct Treatment Group ..........................................................105
6.3.3 Regression 3: Indirect Treatment Group.......................................................108
6.3.4 Regression 4: Control Group ...........................................................................110
6.4 Confidence Interval ..........................................................................................112
6.5 Simulations.........................................................................................................115
6.5.1 Simulation of Average Per Capita Income Using Mean Dependency Ratio ...119
6.5.2 Simulation of Average Per Capita Income Using Lower Bound and Upper
Bound of Mean Dependency Ratio ..............................................................................123
6.6 Comparative Analysis of the Findings .................................................................125
7 Summary and Conclusion ..................................................................................131
Bibliography..............................................................................................................135
Appendices..................................................................................................................151

Appendix I: Analytical Relationship between Research Variables .......................151
Appendix II: Group Differences: (Complete Data Set - to- Direct Treatment Group) ....154
Appendix III: Group Differences: (Complete Data Set - to- Indirect Treatment Group)....154
Appendix IV: Group Differences: (Complete Data Set - to- Control Group) .............155
Appendix V: Group Differences: (Direct Treatment group- to- Indirect Treatment ........155
Appendix VI: Group Differences: (Direct Treatment Group- to- Control Group) ........156
Appendix VII: Questionnaire _ Community................................................................157
Appendix VIII: Questionnaire _ Household .............................................................163
Appendix IX: Questionnaire _ Employees ...............................................................174
Appendix X: Questionnaire _ Working units ............................................................178
List of Tables

Table 1.1: Poverty Indicators ........................................................................................................... 6
Table 3.1: Questionnaires and Sample Size .................................................................................. 35
Table 3.2: Composition of Households and Employees Sample .................................................. 38
Table 5.1: Proportion of Kids Below the Age of 14 Years ............................................................. 71
Table 5.2: Proportion of Females within the Low-Income Rural Households ............................... 72
Table 5.3: Dependency Ratio of Three Data Groups of Low-Income Rural Households ............. 74
Table 5.4: Monthly Average Per Capita Income of the Low-Income Rural Households .......... 74
Table 5.5: Proportion of Household Income Earned from Unskilled Employment Source ....... 78
Table 5.6: Proportion of Working Females in the Low-Income Rural Households ..................... 79
Table 5.7: Average Education Level of the Low-Income Rural Households ............................... 82
Table 6.1: Group Mean Differences of Three Data Groups (Kruskal-Wallis test (H)) ................. 88
Table 6.2: Group Mean Differences of Each Two Data Groups (Mann-Whitney test) ............... 94
Table 6.3: Group Mean Differences of Each Two Data Groups (Mann-Whitney test) ............... 96
Table 6.4: Description of the Variables ....................................................................................... 98
Table 6.5: Collinearity Diagnostic for OLS Regression ............................................................... 100
Table 6.6: Regression 1: Aggregate Data Set; OLS Regression Results ..................................... 103
Table 6.7: Regression 2: Direct Treatment Group; OLS Regression Results ............................. 107
Table 6.8: Regression 3: Indirect Treatment Group; OLS Regression Results ......................... 109
Table 6.9: Regression 4: Control Group; OLS Regression Results ............................................ 111
Table 6.10: Dependency Ratio of Different Data Groups ............................................................ 115
Table 6.11: Original and Simulated Average Per Capita Income .............................................. 117
List of Figures

Figure 5.1: Energy and Water Sources Used by the Aggregate Sample of Rural Households ...............................................................................................................................................63
Figure 5.2: Types of House Material of Low-Income Rural Households .................64
Figure 5.3: Types of Toilet used by Low-Income Rural Households ..........................65
Figure 5.4: Household Size of Three Data Groups ......................................................68
Figure 5.5: Average Age of Low-Income Rural Households ........................................70
Figure 5.6: Employee's Working Categories in Aggregate Data .................................76
Figure 5.7: Employees Working Categories of Three Data Groups ..............................77
Figure 5.8: Age Categories of Employees in Aggregate Data .......................................80
Figure 5.9: Age Categories of Employees in Three Data Groups ...............................81
Figure 6.1: Comparison of Average Education of Households of Three Data Groups ....90
Figure 6.2: Comparison of Per Capita Income of Three Data Groups .........................91
Figure 6.3: Comparison of Dependency Ratio of Three Data Groups .........................92
Figure 6.4: Original and Simulated Average Per Capita Income of Three Data Groups Using Lower Bound, Mean and Upper Bound of Dependency Ratios of Other Groups...118
List of Abbreviations

Acronyms and abbreviations
APCI Average Per Capita Income
CSR Corporate Social Responsibility
DR Dependency Ratio
FPR Female Proportion in the Household
HH Household
HHS Household Size
HHAA Household Average Age
HHAE Household Average Education
HO Model Heckscher Ohlin Model
LPG Liquefied Petroleum Gas
LBAPCI Lower Bound of Average Per Capita Income
LBMDR Lower Bound of Mean Dependency Ratio
OLS Ordinary Least Square
PCI Per Capita Income
PKR Pakistani Rupee
PRWF Proportion of Working Females
VIF Variance Inflation Factor
UNSEI Proportion of income earned from unskilled employment
UBAPCI Upper Bound of Average Per Capita Income
UBMDR Upper Bound of Mean Dependency Ratio
Dedicated to:

**my magnanimous parents**  
Father Hafeez Rasool Goraya (Late) and mother Iqbal Begum  
Whose encouragement, appreciations, well wishes and prayers supported me to achieve the impossible in life,

**my adorable Husband**  
Dr. Asif Bashir for his inspirational guidelines, motivation, support, sacrifices and profound love that helped me through to complete this undertaking &

**my dear sons**  
Fazeel, Faiq and Faraz for their generous contribution of very welcoming distractions from my work which even remained refreshing and exhilarating for me for the next start of my work
Acknowledgement

I am very much indebted to Allah almighty who bestowed upon me the abilities to pursue positive accomplishments in life and His Prophet Muhammad (peace be upon Him) who is source of knowledge and eternal inspiration for mankind.

It is a great pleasure to acknowledge my first supervisor Prof. em. Dieter Bender for his skillful guidance and invaluable help with motivation, patience and understanding in the duration this study. I am greatly indebted to my second supervisor Prof. Dr. Wilhelm Löwenstein, whose excellent analytical skills, critique and inspiration helped me through to achieve one of my biggest objectives in life.

A very supportive and inspiring academic environment at the Institute of Development Research and Development Policy (IEE) helped me through the many ups and downs of this journey. I am especially thankful to Prof. em. Dr. Werner Voss for deepening my understanding of statistical analysis. I owe my heartiest gratitude to thank Prof. Dr. Katja Bender for her advices and support.

I would like to acknowledge with deep appreciation and gratitude the invaluable help of Muhammad Atif and Anita Khawaja without whom my field research would not have been conducted. I am also thankful to Mansoor Undre (UK) for proof reading the English manuscript of this study.

Last but not least, I am particularly indebted to my brothers Nasar Hafeez and Asad Hafeez for their enduring and priceless support throughout my life.

I am very much obliged to my parents in law particularly Father in law Bashir Ahmed Sundhu for his continuous inspiring and encouraging drives to complete this work. I have been blessed with good friends: among those I owe particular thanks to Muhammad Muzammil Mujeed, whose assistance helped me really a lot for the completion of this undertaking.

Farah Asif

IEE, Bochum, June 2015
Abstract

The interplay between the openness and poverty in general and foreign affiliation and the economic status of low-income rural households in Pakistan in particular is revealed by this study. In this regard, taking the theoretical base from H-O and Stolper-Samelson trade theorems, empirically estimation is conducted by utilizing primary data, collected through a self administered survey from four of the rural areas of Pakistan. To explore the empirics of the study systematically, different statistical techniques are employed like group mean differences, OLS regression, confidence interval and simulation.

Long term trade relationships can work only if member countries respect the fundamental human rights explained by corporate social responsibility (CSR) standards. The study focuses on a sports industry in Pakistan that is observing long term affiliation with a Danish firm, where domestic industry has to embrace CSR production standards in order to maintain their long term international trade relations and to stay competent in the global market. For this purpose in the late 1990s, sports industry in Pakistan signed the Atlanta Agreement and established single sex working units in rural areas to realize the child labour free production of hand stitched foot balls.

Thus, foreign affiliation is practically realized through the establishment of working units in the rural areas, which is considered as an additional employment and thus income generating opportunity particularly for the semi-skilled workers in the area. The economic status of low-income rural households is approximated through average PCI of the household, taking it as a dependent variable for the study. The results suggest that enlarging the employment opportunities for less skilled workers and unused potential of the society which are females in the rural area might increase the economic activity in the area which subsequently improves the livelihood of the low-income rural households through increasing their income.


JEL classification: F6, F14, F16, A13, M14, O19
“It has been said that arguing against globalization is like arguing against the laws of gravity” Kofi Annan

1 Introduction

The basic idea behind openness is that a single institution cannot launch inventions in isolation.\(^1\) Openness, also perceived as globalization,\(^2\) is a multi-dimensional phenomenon that is accomplished through liberalizing national borders in economic, social, cultural and political contexts.\(^3\)

Openness comprises of both processes and outcomes.\(^4\) The process of openness becomes operational through various forms of trade, including three main channels: opening up the national borders for trade in goods markets, financial markets and factor markets.\(^5\)

The outcome of openness emerges from the reduced barriers to the free flow of goods and services, knowledge and technology and capital and labour, which ultimately results in the increased integration of local, national and regional markets into the global economy.\(^6\)

The present study principally focuses on the impact of openness that becomes operational through the international trade in goods. Thus the discussion about international trade in financial markets and factor markets would be beyond the scope of the study. Within the goods market, free flow of goods across national borders may be realized either through long term trading contracts formulating the *permanent exports or imports* or through spot trading contracts which formulate *accidental exports or imports*.\(^7\)

---

\(^1\) Dahlander and Gann (2010).
\(^2\) Throughout the study the *foreign affiliation* will be mentioned generically as openness and globalization and more specifically as *foreign affiliation*. The term globalization became more prevalent in the second half of 1980s. See also Santarelli and Figini (2002).
\(^3\) Lakshman (2004).
\(^4\) Globalization as a process, mainly for low income countries developed extensively in the 1980’s in the form of current and capital account liberalization. Consequently, globalization became visible as an outcome.
\(^5\) Velde and Morrissey (2002); Husted and Melvin (2013).
\(^7\) Long term trading contracts exist between trustworthy partners and represent long lasting trading relationships which realize the flow of permanent exports or imports. Whereas short term trading contracts last for a shorter span of time, typically less than one year, such type of contracts may be realized only once between trading partners. As accidental exports are produced and exported to trade partners only once, export contracts are given to other domestic or international industries.
Traditionally, the regulation of human rights, social and environmental standards were perceived as different entities from trading affairs. At present this conventional concept has been changed in international trading behavior, and consideration of corporate social responsibility (CSR), including human rights and international social standards, has become a key factor for long lasting trading relationships to exist. In this process, enterprises take the responsibility for their impacts on society and are concerned to protect the environmental, social and ethical human rights of their employees. In the global market, CSR has become evidently important for the competitiveness of enterprises.\(^8\)

Consequently the products produced under the influence of CSR can compete, and thus are accepted in the global market. This poses challenges for the suppliers, as their production processes need to comply with international standards for human rights and the environment in order to secure export contracts from their foreign affiliates. To face the competition of the global market, foreign companies evaluate their supplier’s compliance to CSR standards in the production process. Therefore, the suppliers who are operating in developing countries are also subject to a high degree of scrutiny by their foreign affiliates.\(^9\)

Hence the trading relationships that are established, and last for longer periods of time between suppliers in developing countries and foreign firms, are those where the exports are produced in developing countries in compliance with internationally agreed CSR standards.

Since Adam Smith, more than two centuries ago, it is broadly considered by many economists, that the more integrated nations are more likely to experience accelerated growth rates.\(^10\) This mechanism is accomplished through different mechanisms such as specialization, attaining economies of scale, incentives to adapt new technologies and

---

\(^8\) It is an agreement to follow the rules of social accountability placed by the extended organizations including not only the organizations’ own policies and practices but also those of its supply and distribution chains. It includes that only those products will be accepted by the suppliers and can compete in the market that are produced under environmentally friendly conditions like ensuring the fundamental rights of their employees. See also Vogel (1997), Chan and Ross (2003), Barry and Reddy (2008), Nadvi (2008), Lund-Thomsen and Nadvi (2010a), Lund-Thomsen and Nadvi (2010b), Lund-Thomsen et al. (2012) and UNCTAD (2012).

\(^9\) UNCTAD (2012).

through import competition that breaks down domestic monopolies and realizes greater production at lower costs.\textsuperscript{11}

Openness may generate both static gains, by enhancing productivity through reallocation of resources, as well as dynamic gains through accelerating growth rates in the long run.\textsuperscript{12} Openness, however, cannot always be taken as a quick fix to accelerate growth - rather it contains certain limits and works in certain circumstances to accomplish growth.\textsuperscript{13}

Among the pro-globalizers, however, the majority agree that foreign direct investment (FDI) is the most influential mechanism to reap the benefits of globalization through enhancing investment and employment opportunities and providing direct access to new technology, knowledge and capital accumulation. FDI subsequently develops human capital formation, a competitive business environment, global best ideas and practices and provides basic services in the operating area etc.\textsuperscript{14}

However, the countries with an unstable and insecure investment atmosphere cannot reap the maximum benefits of economic integration led by FDI. This includes countries where the financial markets are underdeveloped, and hence not conducive to attract foreign investors or to motivate the domestic entrepreneurs for investment in response to potential export opportunities.\textsuperscript{15} For instance the flow of FDI in the world increased more than tenfold between 1985 and 2002 (from $58 billion to $633 billion). However, for low-income countries, the share of FDI reduced from 3.3\% to 1.1\%. For world portfolio investment, the share of low-income countries decreased from 0.04\% to less than 0.01\%.\textsuperscript{16}

Economic growth, which realizes an increase in the productive capacity of an economy, is considered essential to reduce poverty.\textsuperscript{17}

\begin{thebibliography}{99}
\bibitem{11} McCulloch \textit{et al.} (2001) and Cline (2004).
\bibitem{12} Siddique and Kemal (2002).
\bibitem{16} Lodge and Wilson (2006).
\end{thebibliography}
According to the World Bank, poverty is a pronounced deprivation in well being, where well being is the command over goods and services. The usual measure of poverty is to compare the income or consumption level of an individual against a certain threshold level.\(^{18}\)

The International Labour Organization (ILO) (1995) takes poverty as a condition where individuals or households are lacking sufficient resources to be able to consume a given basket of minimum goods. This basket may contain either food, clothing, shelter and other fundamentals, which represent moderate poverty, or food only which represents extreme poverty. Hence, poverty incidence can be addressed through measuring certain dimensions of human life: including starvation, poor health, malnourishment, improper shelter, insufficient education, powerlessness and social exclusion.\(^{19}\)

In a cross country study Dollar and Kraay (2002) explore the poverty-growth relationship and suggest that when overall income increases, it brings a proportionate increase in the income of the poor. Their overall findings reveal that once FDI affects growth, then this increased growth subsequently accelerates the incomes of the poor proportionately. Similarly, in another study Dollar and Kraay (2004) find that FDI significantly correlates with growth in the GDP per capita.

Bhagwati (2008), who is one of the proponents of globalization, also advocates that the poverty impacts of globalization operate in two steps. Firstly, `\textit{trade promotes growth}` and secondly, `\textit{growth combats poverty}`. Regarding the interplay of trade, growth and poverty, Bhagwati (2008) explains that the fundamental factor is growth, which directly pulls individuals out of poverty, and indirectly contributes to improve their health and level of education which further enhances their earning capability.

With certain exceptions,\(^{20}\) many of the economists agree upon the growth enhancing role of openness,\(^{21}\) however, disagreement exists amongst the economists about the distribution of this increased growth in a poverty reducing way.\(^{22}\)

---


\(^{19}\) Ministry of Finance (2010).

Chapter 1

Introduction

1.1 Motivation

Openness is considered as the ‘most natural economic relationship’ between the developed and developing countries. Therefore, it is of significant importance to evaluate how, through changing their trade policies, developed countries can help developing countries address poverty.\(^{23}\)

According to Doha Development Agenda,\(^{24}\) one of the leading concerns is to evaluate the impact of world trade reforms on poverty.\(^{25}\) However, the improvements in poverty levels in developing countries, which might be accredited to the presence of multinational corporations, are neither assessed, monitored or well reported.\(^{26}\) Rural economies are under-researched particularly regarding the impact of FDI on rural poverty.\(^{27}\)

Poverty, in nearly all developing countries, is largely a rural phenomenon as more than three quarters of the poor and more than half of the total population are living in rural areas. In addition, 50 – 90 % of households are earning their income from agricultural sources.\(^{28}\) Therefore, the poverty impacts of trade reforms should be more linked to the rural population, where the overwhelming majority of the poor reside.\(^{29}\)

Poverty in Pakistan, like many developing countries, is multidimensional and predominantly exists in the rural areas,\(^{30}\) where 62% of total population is living.\(^{31}\)

---


\(^{23}\) Cline (2004).

\(^{24}\) Doha Development Agenda, launched in Doha, Qatar in 2001. It was targeted to further liberalize trade through promoting the integration of developing countries into the world economies.

\(^{25}\) Hertel et al. (2003).

\(^{26}\) Lodge and Wilson (2006).

\(^{27}\) Chadha and Nataraj (2008) and Zaman et al. (2012).


\(^{29}\) Hertel et al. (2003).


\(^{31}\) Ministry of Finance (2012).
According to UNDP’s Human Development Report 2011, Pakistan is ranked in 146\textsuperscript{th} place with respect to Human Development Index\textsuperscript{32}.

**Table 1.1: Poverty Indicators\textsuperscript{33}**

<table>
<thead>
<tr>
<th>Year</th>
<th>Headcount Ratio</th>
<th>Poverty Gap</th>
<th>Severity of Poverty</th>
<th>Poverty Line (PKR)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rural</td>
<td>Urban</td>
<td>Pakistan</td>
<td>Rural</td>
</tr>
<tr>
<td>1998-99</td>
<td>34.7</td>
<td>20.9</td>
<td>30.6</td>
<td>7.6</td>
</tr>
<tr>
<td>2000-01</td>
<td>39.3</td>
<td>22.7</td>
<td>34.5</td>
<td>8.0</td>
</tr>
<tr>
<td>2004-05</td>
<td>28.1</td>
<td>14.9</td>
<td>23.9</td>
<td>5.6</td>
</tr>
<tr>
<td>2005-06</td>
<td>27.0</td>
<td>13.1</td>
<td>22.3</td>
<td>5.0</td>
</tr>
</tbody>
</table>

Source: Ministry of Finance (2007)

The snapshot of poverty in Pakistan from 1998 to 2006 is depicted in Table 1.1, which explains the incidence of poverty by using headcount ratios. It illustrates a substantial fall in poverty, by one third from 2001 (34.5) to 2006 (22.3), however, this improvement in poverty statistics is much more obvious for the urban poor as opposed to the rural poor. Diffusion of the poor below the poverty line\textsuperscript{34} is represented by the poverty gap which measures the depth, intensity, as well as the severity of poverty. It further helps the policy makers to categorize the low income households as vulnerable, extremely poor and non poor. These two poverty indicators also behave in line with the headcount poverty statistics, as they display a fall in poverty statistics over the period from 1998-99 to 2005-06. For Pakistan, considering the poverty gap and severity of poverty statistics, the reduction in poverty is very obvious for the urban poor relative to the rural poor. The table illustrates that over the given time period and according to these two poverty indicators, the poverty statistics for the urban poor have decreased by more than a half.

\textsuperscript{32} United Nations Development Program (2013).

\textsuperscript{33} The poverty line represents the minimum amount of income to meet the basic needs. Head count poverty means that those households are poor whose income is falling below the poverty line. The poverty gap is the average shortfall from the poverty line taking non poor as having a zero shortfall. This measure is expressed as a percentage of the poverty line. Poverty severity takes the distance of the poor from the poverty line as well as considering income inequality. Higher weight is placed on those who are far from the poverty line. See also World Bank (2012b).

\textsuperscript{34} Pakistani Rupees (PKR) per adult equivalent per month.
Since poverty is widely linked to passive economic growth and unemployment, investment is essential to create new job opportunities which might increase growth and reduce poverty.\(^{35}\)

Openness in general, and FDI in particular, is considered by many economists as a competent strategy to upgrade the livelihood of the poor in low-income countries,\(^{36}\) however, empirical evidence regarding the impact of FDI on poverty reduction is very limited.\(^{37}\)

The present study attempts to evaluate the effectiveness of openness to promote the livelihood of low-income rural households in Pakistan who are most likely to be among the poor. The type of openness that is incorporated in this study is defined as foreign affiliation which is very close to a form of resource-seeking FDI where the flow of capital, technology and knowledge from one country to realize the investment in another country where exports are produced for foreign affiliates by utilizing the abundant and cheap resources of the FDI receiving country.\(^{38}\)

At present, Pakistan is unable to attract FDI with all its characteristics due to it being a low-income country and having an insecure political, legal and economic atmosphere.\(^{39}\) Nevertheless, FDI is functioning in the country with some of its essence, like in the present case study of foreign affiliation that is encompassing all other attributes of resource-seeking FDI except the direct flow of financial capital from abroad.\(^{40}\)

The study is focusing on an industry in Pakistan which developed a trade affiliation with a Danish firm in 1976 to produce hand-stitched footballs by making use of cheap labour in Pakistan and exporting these footballs to Denmark. At the very beginning of their affiliation, Pakistani firms operating in Sialkot had acquired football stitching technology\(^{41}\) from their Danish affiliates, however, the remaining resources like financial capital, labour and raw material were provided by the local economy.

\(^{36}\) Refer to 2.1.1; Foreign Direct Investment and Growth
\(^{37}\) Tambunan (2005).
\(^{38}\) Refer to 2.1.3; Types of Foreign Direct Investment
\(^{39}\) Stable and efficient legal institutional environment is considered as conducive to attract FDI. See also Bengoa and Sanchez-Robles (2003), Dollar (2005), Usman (2009) and Ahmed and Malik (2012).
\(^{40}\) Refer to 2.1.3; Types of Foreign Direct Investment
\(^{41}\) No sophisticated technology and equipment is required to stitch footballs. See also Naseem (2010).
Later on, with the implementation of the Atlanta Agreement\textsuperscript{42}, the prevailing wisdom of corporate social responsibility is that it can also be recognized as technology that can be incorporated in the production process.\textsuperscript{43} Consequently, domestic industry in Pakistan established working units\textsuperscript{44} in a few of the rural areas to realize the production of hand stitched footballs for foreign affiliates according to the perceived technology of corporate social responsibility acquired from the global market. These working units, through involving the rural poor in their capacity as workers\textsuperscript{45}, established a link between foreign affiliation and low-income rural households.

Although the study is not dealing with the poverty issue directly,\textsuperscript{46} it is dealing with low-income rural households, who are at a higher risk of being among the poor. The study broadly evaluates the changes in per capita income, and thus welfare status of the low-income rural households\textsuperscript{47} that is brought about by foreign affiliation. Welfare status or living conditions of the households is approximated by the per capita income (PCI), which is the dependent variable of the study.

Data from four of the rural areas is collected, three of the areas are exposed to the working units, while the fourth area is not exposed to the working unit but exhibits substantially similar characteristics as the other three areas. Data analysis both descriptive and empirical is conducted through comparing these different data groups.\textsuperscript{48}

\textsuperscript{42}This agreement was signed on February 14, 1997, between the International Labour Organization, the Sialkot Chamber of Commerce and UNICEF, under the objective, through improved monitoring, to eliminate child labour in Pakistan’s football industry within 18 months as well as to improve the pay and living conditions of football stitchers in Sialkot. Siegmann (2008). For further details, see section 4.3.3; Atlanta Agreement.

\textsuperscript{43}This technology requires that only those products can compete in global markets that are produced under the influence of corporate social responsibility elements. See also Vogel (1997), Chan and Ross (2003), Barry and Reddy (2008), Nadvi (2008), Lund-Thomsen and Nadvi (2010a), Lund-Thomsen and Nadvi (2010b), UNCTAD (2012), Lund-Thomsen et al. (2012).

\textsuperscript{44}Refer to section 4.3.4; Working Units.

\textsuperscript{45}Economic integration can principally involve the rural poor in their capacity as workers, consumers, recipients of public services and users of universal property. Among the workers, many of them are the self employed or wage earners. See also Bardhan (2007).

\textsuperscript{46}Since dealing with poverty directly calls for employing poverty statistics like poverty line, head count ratio, poverty gap or poverty severity etc. Refer to section 2.2.1; Poverty Assessment and Measurement.

\textsuperscript{47}The living conditions of poor are improved through increase in average income of the household. See also McCulloch et al. (2001).

\textsuperscript{48}Refer to section 3.3.1; Questionnaire, Definition of Interview Groups and Sample Size.
1.2 Scope of the Study

In order to evaluate the effectiveness of foreign affiliation to promote the livelihood of low-income rural households, the study attempts to answer the following research questions:

- **Does foreign affiliation contribute to improving the livelihood of low-income rural households?**
  The foreign affiliation is linked to low-income rural households through working units, which are established by local industries in some of the rural areas of Sialkot, Pakistan to produce the output for their foreign affiliates. These working units provide employment opportunities for semi-skilled rural workers. Employing the data of three of these rural areas, and conducting an empirical study, the impact of foreign affiliation will be evaluated on low-income rural households. Per capita income will be used to determine the welfare status as well as the economic condition of the households.

- **How does easier accessibility of a certain set of employment opportunities effectively increase the income level of households?**
  Based on the empirical results obtained from the first question, data of the dependency ratio of the treatment group is used to simulate the average per capita income of the households in the control group. Since the control group is not exposed to the working unit, this exercise evaluates how the average income of the households in that area would behave if employment opportunities were also be available in the area that is not exposed to the working unit. Hence the results obtained due to the varying dependency ratio will be shown.

- **How can the provision of semi-skilled employment opportunities exclusively for females commit a higher economic activity in low-income rural households?**
  In general, the ratio of working members to non-working members in a household represents economic participation and dependency ratio of the household. Hence the households, where females are also economically active in addition to males, show relatively higher level of economic activity and fewer dependents. The welfare
status of the households where females are economically active is evaluated to analyze the impact of foreign affiliation on low-income rural households.

1.3 Organization of the Study

The study is organized as follows. The introduction will be followed by the theoretical foundation of the study, as chapter 2 explores the diversity of theoretical approaches to openness in general and then foreign affiliation as a special case and poverty that are evident from the contemporary body of literature. This chapter provides a comprehensive analytical account of the possible channels through which the foreign affiliation can influence the income status of low-income rural households.

Based on the theoretical orientation, research design and methodology used for empirical investigation by this particular study is developed in chapter 3, which further shapes the analytical part of the study. The guiding hypotheses, which are empirically tested by the study and the operational etiquettes employed by the study to arrive at the conclusion, are elaborated in this chapter. This chapter justifies the selection of the foreign affiliation as an independent variable for an empirical study on income status of low-income rural households.

Chapter 4 gives the background of the study area, mentioning the strengths and weaknesses of the area that are having potential to absorb the inaugurations and initiations of the openness in terms of foreign affiliation.

The empirical part of the study is presented in chapter 5 and 6, on the basis of which, the results are concluded. Determinants of the income status of a low-income rural household are presented in Chapter 5, which are further tested empirically through using regression techniques in Chapter 6. Finally the study is concluded reflecting upon the theoretical orientation and the applicability of the research findings.
2 Foreign Affiliation and Poverty: Conceptual Orientation

To meet the requirement of this particular study, the broad topics of openness, FDI and poverty are firstly discussed in general and then narrowed down to take the specific forms of foreign affiliation and welfare status of low-income rural households.

Openness can exhibit itself in many ways, like the integration of national economies into the global economy through trade in goods, financial and factor markets. It also establishes new institutions that work across borders with existing ones and manufacture commodities in one location to meet the demands in other locations.

The relationship between openness and poverty is multidimensional in nature, therefore it is necessary to better evaluate in an interdisciplinary context. In general, the extent of openness is measured in literature as the ratio between export-to-GDP and import-to-GDP goods and services in the world. Foreign Direct Investment is taken as a very visible dimension of openness to improve human well being or alleviate poverty, particularly in developing countries.

Since FDI as well as foreign affiliation can address poverty through their growth enhancing effects, it is necessary to decompose this into the following three categories. As the first step, it is necessary to define ‘what’ FDI and foreign affiliation are and ‘how’ they contribute. Secondly, it should be explained ‘how’ it can affect the economy of a country at a macro level through enhancing growth and lastly, ‘how’ this macro affect, if any, can be distributed into societies at a micro level to address the livelihood of low-income households that are most likely the poorest households.

2.1 Foreign Direct Investment and its Types

FDI is direct investment in the production or businesses of a country by a company or individual of another country. FDI could be a very important source of external finance, innovative technology and knowledge particularly for developing countries that are more likely to be deficient in these resources. A large plant that is constructed in a small

\[49\] Economic integration most likely operates through markets. See also Wolf (2004).
\[50\] Nissanke and Thorbecke (2007).
\[51\] Tisdell and Sen (2004), Husted and Melvin (2013) and Blanchard and Johnson (2013).
\[52\] Bhagwati (2008).
developing country, where foreign capital, technology and knowledge are incorporated with domestic resources to produce the output, will extend employment and income generating opportunities in the country. Additionally, governments can generate revenues through taxing the products and activities of the FDI receiving firms.

FDI induced knowledge, spillovers and horizontal (forward and backward) linkages\(^{53}\) between domestic firms and foreign affiliates are expected to lead to employment creation, productivity gains by utilizing more efficient production processes, foster linkages, better managerial competencies and know-how, improve employee training and provide access to international markets. Based on firm level data from Lithuania, Javorcik, (2004) finds positive backward linkages of FDI taking place between foreign affiliates and their local suppliers.

Likewise, if new processes or products are introduced by foreign firms, local firms may reap the benefits of this technological diffusion. Domestic firms may benefit from foreign firms solely through observing their processes as well through ‘spin-offs’ in case domestic employees move from foreign firms to domestic firm. This allows the domestic firm to benefit from their knowledge gained at the foreign firm, and enables them to grasp the innovative experience of foreign firms, which may improve their productivity.

However, these spillovers depend upon the awareness, capability and motivation of domestic firms to absorb the foreign presence.\(^{54}\) The characteristics of the FDI receiving industry may influence the growth effect for the domestic economy. The size of the spillover from foreign firms to the domestic economy depends on the following characteristics: a) the type of factor requirements, such as skilled or unskilled labour; b) the degree to which FDI may inhibit or enhance local investment; c) the extent to which technological know-how is transferred FDI receiving companies; d) the absorptive capacity of the domestic industry for this transferred technology; e) foreign exchange earnings generated through FDI related industries; f) the degree to which foreign presence

\(^{53}\) Backwards linkages are established through interaction between foreign affiliates and their local supplies and forward linkages are established through contacts between foreign supplier of intermediate input and their local customers. See also Javorcik (2004)

\(^{54}\) Meyer and Sinani (2009)
fosters competition within the host economies and g) the extent to which FDI induced competition may distort the host countries’ economic policies.\textsuperscript{55}

### 2.1.1 Foreign Direct Investment and Growth

From the literature, it is largely evident that nations that are more open to trade grow faster than the ones that impede openness.\textsuperscript{56} Even the discrepancies in output per capita of the countries are also considered as linked to openness.\textsuperscript{57} The relationship between openness and growth is highly recognized as operating through export orientation.\textsuperscript{58}

FDI incorporates the inflow of capital, knowledge and technology, therefore host economies are most likely to benefit from FDI induced spillovers. Among the various forms of openness, FDI is considered as very conducive to economic growth as it may complement local resources through enhancing knowledge, technical assistance, investment opportunities, employment opportunities and spillover efficiency to domestic firms.\textsuperscript{59} Based on the literature, Tambunan (2005) concludes that FDI may positively affect poverty through i) increasing labour intensive economic growth triggered by export growth; ii) technological and innovation spillovers flowing from FDI based firms to local firms and iii) through poverty alleviating programs of domestic governments that are financed by tax revenues generated from FDI based industries. The beneficial effect of growth may also depend upon its interaction with the sector of domestic investment.\textsuperscript{60} For instance, FDI flowing into the manufacturing sectors, rather than the primary sectors, may have stronger linkages with the rest of the economy which might lead to GDP growth.

It is also evident that FDI and income growth are not always directly related, rather it might be indirectly related or at least benefits of FDI can be weaker particularly from the

\textsuperscript{55} Nunnenkamp and Spatz (2004, p. 57)


\textsuperscript{57} Berg and Krueger (2002).


\textsuperscript{60} Aykut and Sayek (2007).
Employing the data set for the period 1960-1997 Carkovic and Levine, (2005) analyzed the growth effect of FDI and concluded that FDI did not appear as having robust causal effect on growth. Similarly, Aitken and Harrison (1999), using industrial plant level data for Venezuela, do not confirm a positive relationship between foreign ownership and plant productivity, as they did not find the evidence of technology spillover on domestic firms.

Despite the evidence on the effectiveness of FDI to accelerate growth, particularly for developing and resource deficient countries, it is argued that FDI benefits are do not emerge automatically, rather these are specific to certain circumstances and countries. Blomström and Kokko (1998) argue that FDI can affect growth positively only if the host country is rich. Alfaro et al. (2004), Ang (2009), Durham and Benson (2004) and Nunnenkamp (2002a) recognize the need of sufficiently developed financial markets to enhance economic growth through FDI. Bruno and Campos, (2013) and Nunnenkamp (2002b) document that FDI effects depend upon the level of human capital and financial development at the micro level and on the type of linkages at a micro level. Batten and Vo, (2009) conclude that FDI is conducive to increase growth only in the countries that are more open to trade, exhibit lower levels of population growth and higher levels of human capital. Bengoa and Sanchez-Robles (2003) consider a stable and efficient legal environment as conducive to attract FDI. Busse and Groizard, (2006) argue for the presence of a sound business environment backed by good legislative and regulatory framework. Kose et al., (2009) account for the need for several macroeconomic and structural policies that are required to reap the benefits of financial globalization. Based on industry level evidence, using OECD data, Alfaro and Charlton, (2013) concludes a stronger relationship between FDI and growth for the industries that rely more on external finance. Addison et al. (2006) mention that FDI’s influential effect to address poverty is circumstance and country specific, considering higher growth is more attractive for FDI as `success builds upon success`.

---

2.1.2 Foreign Direct Investment- Growth- Poverty Nexus

There is literature that is supportive of the existence of a strong, direct and straightforward link between economic integration and poverty. In order to analyze the poverty reducing effect of FDI it is important to understand the linkages through which FDI can address poverty.

FDI can contribute to the growth of an economy, which may lead to poverty alleviation. Growth enhancing impacts of FDI are well recognized in literature. According to the Ministry of Finance (2010) growth can address poverty both at a micro and macro level. At a macro level easy access to basic public services like education and health facilities, increases human capital and total factor productivity, which consequently improve the quality of life. At a micro level, growth may combat poverty through creating the employment opportunities, which improve domestic income levels.

Dollar and Kraay (2002) find a strong correlation between FDI as a proportion of GDP and per capita GDP growth. A 1% increase in the FDI-to-GDP ratio would result in a 13% increase in average incomes over the course of a decade. In another study, Dollar and Kraay (2004) also reveal that openness leads to faster growth and poverty reduction in poor countries. The central importance of economic growth to combat poverty is also confirmed by a recent study of Dollar et al., (2013).

McCulloch et al. (2001), who consider openness- a parent image of FDI- as an ally to alleviate poverty, state that there is no evidence that openness or growth hurts low income households. Harrison and McMillan (2007) review existing evidence regarding the linkages of globalization with poverty and also conclude that economic integration should help to reduce poverty in poor countries as they have a relative advantage in producing the goods with intensive use of unskilled labour.

---


Hertel et al. (2003), conclude through the use of a micro simulation methodology for evaluating the impact of global trade reforms for three developing countries - Chile, Malawi and Vietnam. For Chile and Malawi, poverty reduction was observed only in the short term. However, for Vietnam, the opposite holds true where poverty reduction of 12% was observed in the long term. This reduction in poverty for Vietnam was backed by an increase in the export of light manufactured products that were prepared with the intensive use of unskilled labour, which increased the relative returns to unskilled labour.

Although, sustainable economic growth is considered an eventual source of global poverty reduction, growth in itself is not sufficient to deal with poverty and inequality issues. Therefore, income inequality and the poverty reducing effects of this increased growth are questionable as growth patterns associated with increasing income inequality may not be conducive to poverty alleviation.\(^\text{64}\)

Although the poverty reducing effect of growth has been accepted \(^\text{65}\), it broadly depends upon the distributional consequences.

In a cross-country analysis Siddique and Kemal (2002) finds an inverted U shaped relationship between poverty and globalization revealing that at lower levels, globalization worsens poverty while at higher levels it benefits the poor.

Using the time series data for 26 year (1985-2011) for Pakistan, Zaman et al. (2012) find a positive link between FDI and poverty reduction. Results suggest that a 1% increase in FDI is likely to reduce urban poverty by 0.47% and rural poverty by 0.44%. However, income inequality increases poverty at urban levels by 0.61% and at rural levels by 0.72% reflecting the higher intensity of income inequality than the contribution of FDI to combat poverty. It is also argued by Rodrik, (1997) that the welfare effects of growth emerging from market integrations are always associated with distributional consequences as it engenders winners and losers.


2.1.3 Types of Foreign Direct Investment

FDI can take different forms depending on the incentive to instigate it. From the perspective of developing countries, FDI is mainly motivated by one of the following objectives which are concentrated in resource-seeking, market-seeking and efficiency-seeking activities.\(^\text{66}\)

*Resource Seeking FDI*

This type of FDI intends to access the abundant and cheap factors of production of a country, like labour and natural resources. This type of FDI tends to induce the economic activity in the primary sector of the developing nations. Developed countries are capital abundant and unskilled labour deficient, whereas developing countries are unskilled or low skilled labour abundant, however, are deficient in capital and technology. Therefore transferring of capital and technology from developed nations seeking cheap resources in developing countries may offer enduring potential benefits to both of the countries. From the perspective of developing countries it provides them access to the world markets, improves the quality of their products and through incorporating foreign technology increases the factor productivity of the domestic firms.

In many cases developed nations establish production units in the developing countries where output is produced by making use of the foreign capital and technology and cheap domestic resources (e.g. skilled labour) and are exported to the parent company. Therefore, through offering additional employment opportunities, resource seeking FDI may address the economic status of unskilled workers in the host country.\(^\text{67}\)

This type of *foreign affiliation* tends to transfer capital, technology, knowledge and generates foreign exchange earnings but on the other hand it is often concentrated in enclaves that are monopolized by foreign affiliates having very few connections with the wider labour market and local products. Furthermore, local corrupt elites can easily misuse its benefits. (Nunnenkamp and Spatz, 2004)


\(^{67}\) Refer to section 2.1.4.2: Employment, Income and Prices of Factors of Production.
Efficiency Seeking FDI

This type of FDI, as with resource-seeking FDI tends to reduce the costs and is mainly attracted by relative factor advantages at distant locations. For instance, the major determinants of efficiency-seeking FDI are labour costs, low transportation costs and trade barriers. It is very common in the manufacturing sector and is mainly linked to export led development strategies, as it realizes the production for international markets. It mostly transfers the technology and know-how to the developing countries that are compatible with the level of development of the host economies. Host economies can generate the foreign exchange earnings and also benefit from FDI induced spillovers. This type of FDI is expected to have relatively stronger growth impacts on the economy of the host country. (Schulz, 2009)

Market Seeking FDI

This type of FDI is intended to penetrate in the domestic markets of the host country in order to expand the markets. This type of FDI can bring beneficial effects to consumers of the host country by introducing new products and services. It also provides the complementary assets for the host country and improves the production quality. However, it may lead to the crowd out of domestic competitors, particularly if foreign affiliates hold good market power. Moreover, in the long run the balance of payment structure of the economy may deteriorate as market seeking FDI does not generate revenues from exports.

Foreign Affiliation

The type of openness that is incorporated in this study is defined as foreign affiliation which is very close to resource-seeking type of FDI. This foreign affiliation exhibits certain similar characteristics as regular resource-seeking FDI firstly, as the host country incorporates the flow of technology and knowhow from foreign affiliates to realize the production; secondly the output is produced by employing the abundant and cheap factor of production of the host country that is low skilled labour; thirdly, output is produced and exported to the foreign affiliates and lastly, the domestic firm is involved in a long term business ties with their foreign affiliates. Nevertheless, financial capital is not flowing from foreign affiliates to FDI receiving firms, which makes a difference to foreign affiliation from the regular form of resource-seeking form of FDI.
2.1.4 The Link between Foreign Affiliation and Poverty

The foreign affiliation - poverty relationship is not apparent and homogeneous; rather it involves various adaptable channels which could be context specific. The factor, through which foreign affiliation is possibly linked to poverty in practice, includes: changes in prices of trade able goods that might bring consumption effects and changes in labour returns and employment opportunities that might bring income effects. Foreign affiliation can also affect government revenues that could be generated from taxing the trade able goods and these revenues can be used for financing programs exclusively for poor. Some of these effects work instantly, however, others take some time to have an impact thus making the relationship between openness and poverty complex. These links are reviewed as follows.

2.1.4.1 Changes in Prices of Exports and Imports

Foreign affiliation can address the living conditions of poor households firstly, through changing the prices of trade able goods and secondly, through broadening the variety of international commodities available in the domestic market. For instance reduced import prices may increase the real income for poor consumers and higher export prices may increase the income of poor producers. The Heckscher-Ohlin (HO) theorem also explains that through economic integration the imported goods are available for domestic consumers at reduced prices, which might increase the real income of households. This increase can be enhanced if it includes the goods that are of significant importance for the poor and low-income households like essential items related to food, health and clothing etc. As these price changes are transmitted to low income households it establishes a direct link between openness and poor households. According to Lodge and Wilson (2006) multinational Companies bring positive benefits to developing countries not only through improving their

---

69 This concept advocates the welfare effect of opening up through applying the theories of consumer surplus and producer surplus. See also Bardhan (2007) and Mankiw (2011) for the possible relationship between openness and low income households as consumers and workers.
71 It is a trade liberalization theory and is taken as base for the present study. For further details see also section 3.1; Theoretical Background.
72 McCulloch et al. (2001).
standard of living, but also through reduced prices, improved quality, variety of goods, increased productivity and output for suppliers.\(^{73}\)

From a producer’s perspective, *foreign affiliation* can also help the producers through reduced export barriers which subsequently increase the demand and prices of domestically produced products.\(^{74}\) This may trigger higher export production which subsequently stimulates the employment and income of the workers. Depending upon the skill levels of the workers (for example if workers involved in production are unskilled and belonging to the low income households),\(^{75}\) then *foreign affiliation* can be conducive to promoting the living conditions of low income households through increasing their income level.

Although the estimated benefits of price changes emerging from economic integration are very small,\(^{76}\) the opening up of economies for trade is taken as one of the initiatives that expand economic growth through changing the relative prices. Therefore, the net positive effect of growth on poverty is contingent upon the pro-poor price changes,\(^{77}\) for example if the poor are net users of trade able items such as rice.\(^{78}\)

### 2.1.4.2 Employment, Income and Prices of Factors of Production

*Foreign affiliation* led by the law of comparative advantage and the Stolper- Samuelson theorem may significantly affect the income, employment and wages of the poor.\(^{79}\) Thus, the effectiveness of *foreign affiliation* to combat poverty highly depends upon the fact that for ‘what’ an economy affiliates and ‘how’ it may affect the wages of unskilled workers. According to Rosenzweig (2008) the poor are lacking skills and assets that are considered as prerequisite for income generation. Hence the principal endowment for the poor is their labour which is most likely unskilled labour. The income of the poor can be raised firstly

---

\(^{73}\) Lodge and Wilson (2006).

\(^{74}\) The producers, who can produce the output at the prices that are lower than the world prices, become the exporters of commodities as they supply the exports at lower rates, which initially increases the demand for these exports, and then the prices of exports.

\(^{75}\) Poor are usually lacking skills to get higher returns and thus are most likely belonging to low income households.

\(^{76}\) McCulloch *et al.* (2001).

\(^{77}\) Anderson (2004).

\(^{78}\) Bardhan (2007).

\(^{79}\) As for developing countries, the unskilled labour is in abundance and following the law of comparative advantage, the developing countries should export the unskilled-labour intensive commodities. Following the Stolper Samuelson theorem, in this case trade liberalization may increase the real return to the unskilled-labour as the relative price of this export commodity increases in the world market. However, in reality, certain rigidities existing in the labour market may crowd out such affects. See also McCulloch *et al.* (2001) and Goldberg and Pavcnik (2007).
through increasing returns to unskilled labour and secondly from a long run perspective, through accumulating their skills.

Following the growth enhancing perspective of opening up, if imports of industrialized countries are produced by the poor in developing countries, it may be conducive to reducing global poverty, as the increased income of a poor family eases their budget constraints which might reflect in switching their kids from work to school. This might subsequently enhance their ability to accumulate human capital, which is a prerequisite to find a relatively better job and then earn a higher income. Thereby, foreign presence can only enhance the national welfare if foreign-owned firms pay higher wages to employees than the domestic firms do, otherwise increased GDP will be eaten up by the foreign-owned firms themselves. If fruits are shared with the nationals then the incentives of foreign affiliation can be justified by the government.

The very basic insight of the Stolper-Samelson theorem states that an increase in the price of a commodity stimulates the incentive to expand its production. Hence, foreign affiliation increases the prices and profitability of exportable commodities which results in the expansion of their production. This will increase the return in income of the factors of production that are utilized in the production of those commodities. For instance, increase in the prices of unskilled labour intensive commodities is expected to be followed by increase in the wages of unskilled labour. The profitability of these industries grows, thus they expand the production of unskilled- labour intensive commodities which in turn increases the demand for unskilled labour per unit of other factors of production. Thereby this increase in production raises the net demand for unskilled labour and decreases it for other factors of production. If low income households, which are most likely among the poor, largely depend on unskilled labour earnings, poverty will be lessened due to resulting wage increase. This increase in wages may or may not lift the households out of poverty, as poverty headcount indices changes only if wage increase moves the household from one

---

80 Cline (2004).
81 Bhagwati (2008). Accumulation of human capital of the HH may lead to accelerate the income level.
82 Alfaro (2014)
83 These are the commodities that require relatively higher unskilled labour-to-other factors ratio like capital. See also Krugman and Obstfeld (2003), Salvatore (2012) and Husted and Melvin (2013).
side of the poverty line to the other.\textsuperscript{84} However, this wage increase results in the reduction in the wage gap between skilled and unskilled workers.

Conversely, openness, that increases the demand of skilled workers increases, the wage gap between the wages of skilled and unskilled workers. For instance, Feenstra and Hanson (1997) study the data of Mexico from 1975-1988 and find a positive relationship between FDI and the demand for skilled workers. In FDI concentrated areas the wages of skilled labour increased by 50% which widened the wage gap in the country.

In general, the positive effect of foreign affiliation on growth is highly dependent upon the policy that is adapted to realize this link, for instance in South Africa this relationship holds due to the employment effects of FDI on growth.\textsuperscript{85} The impact of openness, operating through FDI, on poverty reduction has also been explained by Velde (2003) mentioning that there is no direct link between FDI and poverty reduction, but it may benefit the poor indirectly by creating better employment and earnings opportunities for unskilled workers in developing host countries.

During recent years, export-led growth supported employment opportunities for women, particularly in Taiwan, where export industries are established in non-urban areas, employing the labour from rural agricultural households. These industries are offering many jobs to women, especially married women.\textsuperscript{86} In another study, that was conducted by Başlevent and Onaran (2004) for Turkey to evaluate the export-oriented growth scenario for female labour force participation, a positive relationship was found between the export orientation and the female labour force employment and participation.

From the perspective of developing countries, tariff impositions are taken as income and are often used for raising funds for governments. The fiscal position of the government is very important for a fight against poverty. If government is very strong in its financial position, it will offer reforms that through the provision of basic facilities to low-income households, may improve their living conditions.\textsuperscript{87}

\textsuperscript{84} See AlsoMcCulloch \textit{et al.} (2001).
\textsuperscript{85} Hallak and Levinsohn (2008).
\textsuperscript{86} Schultz (2008).
\textsuperscript{87} McCulloch \textit{et al.} (2001).
2.1.4.3 Government Revenues and Exclusive Programs for Poor

Particularly for developing countries, tariff impositions are often used for raising funds for governments. The fiscal position of the government is very important for a fight against poverty. If government is very strong in its financial position, it will offer reforms that through providing basic facilities to low-income households, may improve their living conditions.\(^{88}\)

2.2 Conceptualization of Poverty: Definitions and Attributes

Evidently, poverty is conceptualized as a multidimensional phenomenon in nature.\(^{89}\) Poverty has been defined in different ways, which can be summed up in two main approaches; the quantitative approach that accounts for monetary aspects, and the qualitative approach that complements the conventional monetary approach with qualitative norms like capabilities, opportunities and participatory elements. The categories of poor are different in different societies, as the status of the poor in a relatively rich society is somewhat different than elsewhere.\(^{90}\) Therefore consideration of social norms, in addition to the monetary perspectives of poverty is vital for a complete understanding of the issue.\(^{91}\)

The quantitative approach of defining poverty advocates more command over income and monetary resources and is very common measure of poverty for the national governments of developing countries.\(^{92}\)

Studies of poor households conducted in different countries as well as in various settings, exhibit acceptably consistent attributes of poverty. Poverty is largely attributed to inadequacy of assets which formulate the physical capital of family. It includes land and other material belongings of the household like motorcycles, bicycles, radio, etc.\(^{93}\) In addition to assets, poverty is also reflected as lacking favourable housing attributes like

---

\(^{88}\) McCulloch et al. (2001).
\(^{90}\) Chen and Ravallion (2010).
\(^{91}\) Narayan et al. (2000).
type of house, floor and toilet as well as major energy and water sources utilized by the households.\textsuperscript{94}

At a household level, dependency ratio, household size, the average age of the household and household composition like the number of children and number of females in the household are common measures used to identify poverty. Households with a larger size, a higher number of dependents and children have greater probability of being poor.\textsuperscript{95}

At a community level, underprivileged access to state provided infrastructure and very basic social services is taken as a very obvious measure of poverty like employment opportunities, attributes that facilitate human capital including health, education, training, and social capital including social networking and association with the neighborhood.\textsuperscript{96}

Qualitative poverty approaches include other invisible however important dimensions of poverty other than the poverty definition underlying the quantitative approach. This poverty approach mainly includes the capability approach that was introduced by Sen, who defines poverty in terms of capability deprivation, other than lowness of income only. Qualitative poverty approaches include basic needs, assets ownership, survival, isolation, personal dignity, self-respect, powerlessness, security and vulnerability.\textsuperscript{97}

The capability approach is very relevant for poverty studies, as the poor are lacking key capabilities regarding income, education, health, freedom and empowerment, which further restrict their access to basic services.

\textsuperscript{95} Nguyen (2007), Schreiner (2010), and Vu and Baulch (2011) and Gounder (2012).
2.2.1 Poverty Assessment and Measurement

Regarding the poverty measurement issue, the main concern is to figure out `Who is poor` and to assess `How much is poverty`. The first task is concerned with identifying the poor and the second task is concerned with understanding the magnitude and depth of poverty.\textsuperscript{98}

The choice of methodology to be used for poverty measurement is contingent upon the concept of poverty one employs.\textsuperscript{99} Underlying the quantitative poverty assessment approach, most of the poverty analysts\textsuperscript{100}, employ income and consumption data for poverty measurement. These measures are considered as well correlating with other welfare indicators like literacy and nutritional status that are heavily used to formulate the policy related to poverty and income inequality. However, there are some issues related to the measurement of both of these poverty assessment tools.

Many of the poverty analysts prefer to make use of the expenditure and consumption approach for poverty measurements, as they take expenditures as more consistent over time than income.\textsuperscript{101} In order to acquire a habitual and uniform living standard, households attempt to smoothen their consumption even if income of the household changes.

However, there exist certain difficulties in employing consumption data for poverty analysis. According to the World Bank (2012a), the consumption data is not always available and additionally it is not simple to obtain the expenditure data as it includes the information on both food and non foods commodities. For non food items particularly, a longer memory recall is required ranging from the consumption pattern for one month to one year depending upon the nature of non food items. It is most likely that respondents forget the longer recall period, which may affect the data quality. The poverty measurements based on household expenditure data are also criticized based on the view that it may only reflect the partial picture of the households particularly for the rural households where many aspects are not monetized. Therefore, considering the data difficulties in obtaining reliable data, researchers have developed a proxy variable for

---

\textsuperscript{98} The present study is dealing with the extent of poverty which portrays the changes in wellbeing status of low income households who are most likely among the poor.
\textsuperscript{99} Osmani (2003).
\textsuperscript{100} Ravallion (1996) and Carvalho and White (1997), Green and Hulme (2005) and Sugiyarto (2007).
Chapter 2                                                              Foreign Affiliation & Poverty: Conceptual Orientation

expenditures and thus poverty. The proxy usually involves the easy to collect variables extracted from the household’s typical characteristics that significantly affect poverty. These variables include HH assets ownership, employment status, and the education level of the household head.\footnote{Carvalho and White (1997).}

Nevertheless, measuring poverty through the income approach is also criticized on the ground that in developing countries much valuable consumption is not operated through marketplaces.\footnote{Wisor (2012). Like the people who are related to the agriculture sector are unable to calculate all of their consumption expenditures particularly the ones related to food items which formulate the major share of their expenditures.}

\subsection*{2.2.2 Poverty Line\footnote{It identifies and the poor and portrays the poverty extent in terms of poverty gap and is commonly based on certain food and non food expenditures. See also Sugiyarto (2007).}}

Many of the poverty studies incorporate the poverty line as a key approach to measuring poverty. The poverty line defines the social minimum standard of living to which every individual should be entitled.\footnote{Carvalho and White (1997), Kakwani (2003) and World Bank (2012b).} It differentiates the poor people from non-poor, i.e. those who are below the line are poor and those who are lying above the poverty line are non-poor.

There are two main approaches to define poverty and to practically measure the poverty line.\footnote{Carvalho and White (1997) and Kakwani (2003).} Firstly, absolute or extreme poverty:\footnote{According to World Bank (2012b), new extreme poverty line is set at $1.25 a day in 2005 Purchasing Power Parity terms. Purchasing Power Parity is a method of adjustment that allows international comparison of goods, i.e., identical goods in two different countries has same price when expressed in one currency. See also Blanchard and Johnson (2013).} drawn on the basis of the minimum calorie requirement and implies that everyone on the poverty line enjoys the same standard of living. It does not vary with the average income of the country or overall living standards. It is more relevant to low income countries. Secondly, relative poverty: it is the economic position of an individual relative to the average income in the country or average social living standards. It varies with the level of average income in the country and is more relevant to high income countries.
To construct a poverty line, first, the food poverty line is constructed on the basis of nutritional norms required by individuals and then the food poverty line is supplemented with other indicators of the quality of life like adequate clothing, health, shelter and education etc.

### 2.2.3 National Poverty Lines

Poverty is considered as subjective to social setups and time frame, as according to the poverty definition of Merriam-Webster’s Collegiate Dictionary (1998), poverty is lacking the usual or socially acceptable amount of monetary possessions. According to Kanbur and Squire (1999), this definition reflects that poverty is a relative concept and may differ in nature for different times and countries. For example, what is socially acceptable in India may differ from what is socially acceptable in America, which again may also be different in different times. Therefore, while choosing a strategy of a poverty line to measure poverty for a specific country, it is very important to choose an appropriate poverty line for a country, since rich countries have higher real poverty lines than the poorer nations.

National poverty lines, through reflecting the country’s particular social and economic conditions, indicate the local perceptions of income and consumption requirements for being non poor. As the average income of a country changes, the pre recognized borders between poor and non poor also change, which does not allow a reliable poverty comparison across countries. To reflect the reality and to conduct a meaningful national poverty comparison over time, the national poverty lines should be normalized for inflation and living costs between the survey years.

Even with certain existing similarities in national poverty lines, they cannot be generalized due to differences in social elements and food and non food items across the nations. Different poverty lines are adapted by different nations.

---

109 Poverty is different for different societies and is different in different timings. As it changes over time as the average income changes and new conceptions about minimum requirement develop.
110 Chen and Ravallion (2010).
111 World Bank (2012b).
Theoretical Foundation, Research Design and Methodology

3.1 Theoretical Background

This study incorporates two theorems – the H-O theorem and the Stolper-Samelson theorem\textsuperscript{112} as the theoretical base. The mainstream view of openness affiliation conception is based on the Heckscher-Ohlin Theorem,\textsuperscript{113} which was developed by two Swedish economists, Eli Heckscher and Bertil Ohlin, and is also known as the H-O theory. This model has developed thinking about the re-distributional impact of opening up, even though theoretical shortcomings of the model are recognized.\textsuperscript{114} This theory holds that a nation will export the commodity whose production requires the intensive use of the nation’s relatively abundant and cheap factor and import the commodity whose production requires the intensive use of the nation’s relatively scarce and expensive factor. The labor-rich nations export relatively labor-intensive commodities and import the relatively capital-intensive commodities. The basic insight behind this theory is that all the participants get benefit from trade.\textsuperscript{115}

The low-income countries are characterized as low skilled labour abundant nations, and the developed countries as capital abundant nations, thus opening up for low-income countries should be based on the reallocation of resources towards the export and production of low-skilled labour intensive goods for developed countries, which should subsequently lead to increased demand for unskilled labour, further stimulating growth and alleviating poverty.

Another very important and relevant theorem that arises from the Heckscher-Ohlin theory of trade is the Stolper-Samuelson Theorem\textsuperscript{116} stating that an increase in the price of any good will further stimulate its demand and incentive to produce it. This will increase the derived demand and returns to those factors of production that are involved in the production process. Likewise, if the demand and price of goods increases, that are produced

\textsuperscript{112} These approaches are used by many export oriented studies. See also Shaikh (2011).

\textsuperscript{113} Salvatore (2012) and Krugman et al. (2012). The basic insight behind this theorem is that a country will have comparative advantage in the production of a commodity, which requires the intensive use of its abundant factor of production and have comparative disadvantage in the production of a commodity which requires intensive use of its scarce factor of production.

\textsuperscript{114} The model relies upon very strict assumptions like perfect competition, perfect labour and capital mobility within the country and fixed technology. See also Goldberg and Pavcnik (2007).

\textsuperscript{115} Montalbano et al. (2007) and Goldberg and Pavcnik (2007).

\textsuperscript{116} Salvatore (2012).
with the intensive use of unskilled labour, then the wages of unskilled labor are expected to rise. If low-income households constitute a higher number of unskilled wage earners, their economic position is most likely to be strengthened as a consequence of this wage increase.\textsuperscript{117}

If foreign affiliation induces an increase in demand and prices of commodities that are produced with the intensive use of unskilled labour, which subsequently increases the demand as well as wages of unskilled labour, then it can improve the welfare status of households that contain a higher number of unskilled wage earners. The households constituting a higher proportion of unskilled workers are most likely to be among the low-income households, as the returns to unskilled workers are very low.

Therefore, if foreign affiliation results in an increase in the demand and wages of unskilled labour, it tends to narrow down the wage gap between the skilled and unskilled labour. However, if trade liberalization increases the demand and wages for skilled labour, it will increase income inequality through widening the wage gap between the skilled and unskilled workers.\textsuperscript{118}

However, this relationship cannot be generalized for all of the developing countries.\textsuperscript{119} Feenstra and Hanson (1996) document that the least skilled workers of developing countries may not be used as intensive factor of production of exportable items.

**Implications of Foreign Affiliation in Addressing Poverty**

It is widely recognized that, in the presence of a basic level of development and appropriate host country policies, foreign affiliation might be beneficial for a country in generating employment, diffusion of knowledge and technology, accumulating human capital through the training of employees, contributing to international economic integration, establishing competitive business networks, incorporating the Corporate Social Responsibility (CSR) standards that might improve the working environment and productivity and increased tax

\textsuperscript{117}McCulloch et al. (2001).  
\textsuperscript{118}Kalwij and Verschoor (2007) and Feenstra and Hanson (1997). It might also be the case that if trade liberalization results in increasing the demand of skilled labour in developing countries. For instance if demand of software engineers in developing countries is enhanced by multinational companies offering them very handsome amount of income, it will increase the wage gap between the skilled and unskilled workers.  
\textsuperscript{119}Rodrik (1997).
revenues originating from domestic industries that are affiliated with their foreign counterparts. All these factors are expected to accelerate economic growth and employment generation, which is taken as a very effective tool for upgrading the welfare status or reducing poverty in developing countries. Since growing foreign affiliation provides potential benefits to all the participants, particularly, from the perspective of developing countries, it is of significant importance to integrate with the global economy, which enlarges their horizon of goods, capital, knowledge and technology.

There are different platforms through which developing countries can interact with the developed world and possibly benefit from them. Amongst others, one way of integration could be pursued as taking its foundations from the H-O theory of trade, which requires that trade between developed and developing countries can be realized, based on the law of comparative advantage. The developing countries should produce and export the commodities which require the intensive use of their abundant and thus cheap factor of production, which is unskilled labour. Developed countries should produce and export the capital intensive goods, as capital is in abundance in the developed nations. To realize this trade relationship one approach, amongst others, could be to establish long term affiliation of developing countries with developed nations. Long term trade relationships can work only if member countries respect the fundamental human rights standards as per CSR rules and regulations.

Hence, once the developing countries affiliate with the developed world, they face a competitive atmosphere, where they have to fulfill the demands of the global market. Developed countries are only accepting output that is produced in compulsion with CSR standards, therefore, to compete in the global market developing countries have to adapt the internationally recognized production practices.

Consequently, increases in the demand and prices of exports of developing countries not only stimulate the derived demand and returns to unskilled labour but better working conditions are also provided to the workers to fulfill the preconditions of selling their exports to the foreign affiliates. Thus foreign affiliation can address the livelihood of low

---

120 Refer to section 3.1: Theoretical Background.
121 Refer to section 2.1.3; Types of Foreign Direct Investment.
122 Nadvi (2008), For further details see also Section 4.3.2; Traditional Organization of the Football Stitching Industry and 4.3.3 Atlanta Agreement.
income households on two grounds, firstly through increasing the wage rate of unskilled workers and secondly through providing them a better working environment which can potentially raise labour productivity.

3.2 Case Study as Experimental Approach of the Empirical Study

This study incorporates the case study as a research strategy. It is considered as an intensive study of a single case which serves the purpose of explaining the population behavior\(^{123}\) in the specific area and is considered as an approach for cross validating the findings of household surveys. Although case studies have been criticized on certain methodological grounds,\(^{124}\) they are still considered as key for scientific research.\(^{125}\)

According to Yin (2003) the case study should be given due consideration firstly when the focus of the study is on `how` or `why` questions and secondly, if the researcher cannot control the situation and manipulate the attitude of study objects. A third consideration is if the target of the study is a phenomenon that is contextual to real life. Therefore, the case study method, can be considered as a `comprehensive research strategy` with a particular rationale of design, different data collection methods and particular approaches of data analysis.\(^{126}\) Moreover, the author believes that the case study research exhibits certain weaknesses and strengths depending upon certain features. This trade off, however, depends on basic research objectives like; a) if the study is based on hypothesis testing, b) the importance of internal and external validity, c) importance of causal effects and inferences and d) the inference, type of population and available data, degree of variation concerning the key parameters etc.\(^{127}\)

\(^{123}\) Gerring (2009).
\(^{124}\) Flyvbjerg (2006).
\(^{125}\) Shakya (2009).
\(^{126}\) Yin (2003).
\(^{127}\) Gerring (2009).
3.2.1 Counterfactual Impact Evaluation

To evaluate the impact of foreign affiliation on the economic status of low income households, the comparative analysis is mainly adapted by this study as experimental approach. Following such an experimental condition, it is required for comparison purposes to formulate two groups, which share similar socio-economic characteristics and are as similar as possible. Within such an analytical framework, a specific condition is employed by the researcher for one of the groups. This particular group is known as the ‘treatment group’ and the one which does not receive any treatment is called the ‘control group’. The final analysis involves the comparison of the two groups with respect to a particular outcome that is of primary interest for the study.

According to Shadish et al. (2002) the potential of an experiment lies in explaining the consequences resulting from intentionally changing treatments; as he Shadish et al. (2002) defines the experiment as “a study in which an intervention is deliberately introduced to observe its effect”.

A methodological stream dealing with such kind of development work includes the counterfactual impact evaluation. Certain similar as well as contradicting definitions of impact evaluation are given in the literature, which are broadly identical as they are following an analogous method, like they consider impact evaluation as the changes that could be accredited to the intervention under examination. For example, White (2006) defines impact analysis as counterfactual analysis that demonstrates the impact of interference on the ultimate results. According to Marcano and Ruprah (2009) the impact evaluation measures the result which is exclusively accredited to the treatment imposed on study object.

---

128 Refer to 3.3.1 Questionnaire, Definition of Interview Groups and Sample Size.
129 For the present study, it is impact of foreign affiliation on the well being of low-income rural households.
130 Shadish et al. (2002).
131 Counterfactual is a hypothetical situation which indicates that what would have happened to the studying objects without the treatment. For the present study, households and employees are the unit of analysis. However, the same unit of analysis cannot be studied in the distinct analysis. There are different households in both groups. Those who are treated are part of treatment group and those who are not treated are part of control group.
132 It describes the extent to which the targets that are attributed to development policy are achieved in a country. See also Gopa Consulting Group (2011).
The impact evaluation approach estimates the perceived changes in output due to the *treatment* as the difference in average output between the treated beneficiaries (*treatment group*) and a corresponding group of similar members (*control group*).

A frequent aspect of all experiments is controlling the *treatment*, although the experiment can be controlled in different ways.\(^{133}\) In order to isolate the net effect of the *treatment* and ensure the *internal validity*, a very careful selection of the counterfactual is required.\(^{134}\) Internal validity means that perceived differences between the two groups are attributable to the *treatment* only and alternative interpretations of the dependent variable have been ruled out through controlling the experimental conditions.\(^{135}\)

### 3.2.2 Quasi-perfect Counterfactuals

Corresponding to the challenges of the study, a quasi-perfect experimental research design is selected, which identifies quasi-perfect counterfactuals.\(^{136}\) The quasi-perfect counterfactuals are different from the perfect counterfactuals as the latter is meant for perfect identical groups showing the same situation at the time of *treatment*. In the practical world, however, it is inconceivable to find two identical groups which fulfill the criteria of perfect counterfactuals. The quasi-perfect counterfactual is not meant for absolutely identical groups at the time of *treatment* but those that over time share similar properties and show similar development.\(^{137}\)

This is a technique, in which the *treatment* is not assigned to the study objects randomly, thus the idea of randomization seems inappropriate to form parallel groups. Even in a randomized experimental design, it is hardly possible to formulate the *treatment* and *control group* out of the entire population. Thus the optimal way is to construct the counterfactuals through partial randomization. According to this technique, depending upon some observable similar features, both *treatment* and control bases are preselected.

---

\(^{133}\) Shadish *et al.* (2002). The resultant effect of *treatment* obviously depends upon the fact that how *treatment* is introduced and regulated.

\(^{134}\) Yin (2003), Gerring (2009) and Gopa Consulting Group (2011).

\(^{135}\) As control variable is chosen as having more or less similar characteristics as like the *treatment group* except the *treatment* itself. See also Neuman (2003).

\(^{136}\) See also Shadish *et al.* (2002) and Rama (2002).

broadly. In the next step, both treatment and control groups are further selected randomly out of the relatively narrower bases.

The case study has certain common features with quasi-experimental research design; as both are suitable for causal analysis and mainly focus on internal validity. However, case study methods differ from the quasi experimental approach on the ground in that they explore the contextual phenomenon through employing multiple evidences and combinations of approaches.

Considering the nature of the present study, the counterfactual impact evaluation is the most appropriate approach to analyzing the impact evaluation of foreign affiliation on the living conditions of low-income rural households. Arguably, within the study object, the scientific experiments are based on composing two groups of survey respondents. These two groups are selected on the grounds of having broadly similar socio-economic conditions. Hence the construction of a control group is also very crucial issue, since a majority of researchers accepts the construction of counterfactuals as a fundamental element of impact evaluation.

For the present study, the treatment group includes the households that are living in the area exposed to the working unit which represents foreign affiliation and the control group is the one that is not exposed to the foreign affiliation although has largely similar characteristics as the treatment group.

### 3.3 Case Study Design: Questionnaire, Sampling and Survey

Household surveys have been the key device in measuring and analyzing poverty since the second half of the 1980’s. Some of the researchers take it as the single most important source to be used for poverty assessments. Many researchers, like Hertel and Reimer (2005) and Winters et al. (2004) have thoroughly inquired the underlying relationships between trade and poverty through making use of surveys.

---

138 A broad base for both of the groups is selected on the basis of certain similar sharing characteristics between the groups like, income, education, skills, employment etc.).
140 Shakya (2009).
142 Narayan et al. (2000).
In order to reveal the contextual judgment about the impact of *foreign affiliation* on the livelihood of *low-income rural households*, a household survey that is based on certain self-administered questionnaires is utilized in this study.

### 3.3.1 Questionnaire, Definition of Interview Groups and Sample Size

The survey is conducted through face-to-face interviews, and is based on an interviewer-administered questionnaire; the different questionnaires\(^\text{144}\) were prepared for extracting distinct information. Questionnaires were developed based on certain indicators, which are extracted from literature, explaining the underlying determinants of the well being of households.\(^\text{145}\) The unit of observation is the household\(^\text{146}\) as well as one of the employees within the same household.

Following the nature of the indicator, each indicator was translated into questions. To complement the study requirements, different questionnaires were filled in different numbers and from different sources as presented in Table 3.1. Among the workers of the *working units*, a random sample of 120 households and employees were drawn. To match the sample size of the corresponding groups, 120 households and 120 employees were also interviewed in the other two groups.

#### Table 3.1: Questionnaires and Sample Size

<table>
<thead>
<tr>
<th>Survey Questionnaires</th>
<th>Conducted through</th>
<th>Questions</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community questionnaire</td>
<td>Focused group discussion</td>
<td>Open ended questions</td>
<td>4</td>
</tr>
<tr>
<td>Working unit questionnaire</td>
<td>Working center officials</td>
<td>Open ended questions</td>
<td>4</td>
</tr>
<tr>
<td>Households questionnaire</td>
<td>Household head/member</td>
<td>Open and closed ended questions</td>
<td>360</td>
</tr>
<tr>
<td>Employees questionnaire</td>
<td>Employees or Household head / member</td>
<td>Open and closed ended questions</td>
<td>360</td>
</tr>
</tbody>
</table>

---

144 Refer to Appendix VII, Appendix VIII, Appendix IX and Appendix X.
145 Refer to Section Appendix I.
146 The most of the household surveys use the household as unit of observation. See also Ravallion (1992).
The information within the questionnaires was organized as following:

a) With reference to the household structure, questions included household size and composition, sex, age, employment, educational and health status of the household members, working and non working male and female members’ ratio within the household.

b) Questions related to the living conditions and income status of the households. Indicators used to measure the income status of the household are the construction materials of the house, type of toilet and energy used by the household, amenities within the household and assets of the household.

c) Questions regarding the perceptions of the households about the improvement in their socio-economic conditions including food security, health, education and housing etc.

d) Two separate questionnaires were prepared for the household and for one of household members who is employed. For the direct treatment group, the interviewed employee should be working in the working unit. Regarding the employees information, the questions included sex, age, marital status, health and education level etc.

e) The community based information included the infrastructure available in the area, like roads, schools, electricity, sanitation services. It also includes the strengths of the area like natural capital, social capital and employment opportunities available in the area. In addition, information about perceptions in the improved strengths and infrastructure of the area was also captured.

f) The working unit information included questions like ratio of production and non-production workers, the input availability in the area, facilities available for employees at the working unit like, electricity, clean drinking water, better sitting arrangement and possibility to work overtime, as well as the facilities offered for the employees by the working units like health, education, housing and transport etc.

In general, the questions asked of all three data groups were the same, with the exception of a few questions asked about the presence and absence of the working units. This included those on who are living in the area that are exposed to the working unit and are asked questions about the possible benefit accruing from the presence of the working unit. Those
that are living in an area where there are no working opportunities like *working units* are asked about the significance of such a *working unit*.

**Definition of Interview Groups and Sample size**

The household and employee data has been collected from four rural areas comprising two main groups; *treatment group* and *control group*. Three areas are part of the *treatment group* and the fourth one is part of the *control group*. In the *treatment* area, only limited number of households could be interviewed, particularly for the *direct treatment group* only those households were interviewed that were directly involved in the *working unit*. Within the *treatment group* there are two sub groups the *direct treatment group* and *indirect treatment group*. All together, the aggregate data has been split into three groups, which are categorized as:

I ) **Treatment group**: Rural areas that are exposed to the *working units*.

Within the *treatment group*, there are two sub groups, as following:

*Group A (GA): Direct treatment group*

Respondents, are living in the areas that are exposed to the *working units*, and are directly affected by the *working units* as at least one of the household members is working in the *working units*. In this data group, 120 questionnaires has been completed from each of the individual households  as well as one of the employees from the same household who is working in the *working unit*. This statistic comprises 7% of the households in the *treatment* village.

*Group B (GB): Indirect treatment group:*

Respondents are living in the destinations that are exposed to the *working units*, but are not directly affected by the *working units*, as none of the household member is working in the *working unit*. However, these household might be indirectly affected by the *working units* due to its presence in the area. In this data group, 120 questionnaires has been filled from each of the individual households and one of the employee from the same household, comprising 7% of the households in the *treatment* villages.
II) **Control group:** Rural areas that are not exposed to the *working units*.

**Group C (GC): Control group**

This is rural areas that share similar characteristics as the *treatment group* and are supposed to be as similar as possible to the *treatment area*, but are not exposed to the *working unit*. In this data group, 120 questionnaires has been completed for each individual household itself and one of the employees from the same household. It constitutes 22% of the households in the *control group* village.

The total sample size is 360 households, the composition of data groups within the total sample is given in the Table 3.2.

<table>
<thead>
<tr>
<th>Data Groups</th>
<th>Sample size</th>
<th>Villages</th>
<th>Total Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct treatment group</td>
<td>40 (8%)</td>
<td>Dhana wali</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dhalam Blagan</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ghural Gojra</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Waein</td>
<td></td>
</tr>
<tr>
<td>Indirect treatment group</td>
<td>40 (8%)</td>
<td>Dhana wali</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dhalam Blagan</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ghural Gojra</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Waein</td>
<td></td>
</tr>
<tr>
<td>Control group</td>
<td>120 (22%)</td>
<td></td>
<td>120</td>
</tr>
</tbody>
</table>

All the interviews were conducted in person by the researcher, her partner and three additional local enumerators. In the short span of time, a team of five worked efficiently to conduct the survey and draw a comprehensive picture of the rural livelihood of *low-income rural households* and the role of *foreign affiliation* in upgrading the living conditions of these households. The respondents are one of the family members, most preferably the employed family members who could give information about the entire family as well as themselves. However, due to availability constraints, some of the questionnaires were also filled by family members.

The respondents were mostly interviewed in their local language Punjabi, and some in the national language Urdu. In general, the respondents cooperated well with the interviewers.

### 3.3.2 Administering the Survey

Admittedly, regarding the primary data, the data quality heavily depends upon the ability of data collection. For this reason, the interviewers were thoroughly briefed about the
objective of the study, the nature of questions and about the interview techniques. To fulfill the study objective, the concern of accurate and reliable answers was highlighted to the interviewers. On practical grounds, the interviewers were trained for two days through observing the interviews conducted by the researcher. On the third day, under the supervision of the researcher, model interviews were conducted by the interviewers and plausible mistakes were corrected. In addition to that, throughout the whole survey, if interviewers have some ambiguities about certain questions, they were guided by the researcher.

The community questionnaires and working units’ questionnaires were done by the researchers herself. Community questionnaires were done through focus group discussions, in order to draw a picture of the weaknesses and strengths at community level. For this purpose, some members from the villages were invited for discussion.\footnote{147}

Working unit information was collected from the working unit officials. Most of the information was collected from the head office which is the main operating body. However, some of the information was also confirmed by the corresponding working units. Study objectives and survey requirements were explained to managing authorities in all the working units in order to take them into confidence and to get their support as well as to ensure the maximum participation of workers in the interviewing process.

All the above collected information will be further used for the statistical analysis of aggregate household data, which is a deductive approach, as it scrutinizes the research hypotheses developed on the basis of theoretical background.

**Pretest**

The household and employees questionnaires were first pretested and altered according to their workability and understandability before starting the formal survey.\footnote{148} The pre-test also helped in calculating the time and ensured sequential ordering of questions from easy to difficult. A time period of 60 to 70 minutes was estimated to take information from a

\footnote{147} The informants belong to different ages, ranging from middle age to old age, who could give better information about the undergoing changes in the area.

\footnote{148} It was judged in the pretest that ‘how the questions should be asked’ like it was realized during the pretest that sometimes altering the statement of the same question can improve the understandability of the question for the respondent.
household, consisting of both household and employees questionnaire. Depending upon the ability of the respondents, on average a respondent took 60 to 80 minutes to provide the required information about a household and employee.\(^{149}\)

### 3.3.3 Sampling

Following the experimental approach of the study, conducting a survey is considered as the most usual and beneficial approach for such a comparative study.\(^{150}\) The survey is conducted in both the *treatment area* as well as in the *control area*.

To draw the sample, four rural areas were selected for the survey in one of the districts of Punjab, Pakistan named as `Sialkot` These areas were expected to have more or less similar socio-economic characteristics. The next step was the selection of a unit of analysis both within the *treatment group* and *control group*.

Originally a sample size of 100 respondents in each group was planned. However, due to a good response rate, a sample of the 120 households as well as 120 employees was collected in each sub group.

Interviewing the employees of the *working unit* worked very efficiently as they were interviewed in their working place, where their availability was not a problem. Moreover, nearly all of the employees were interviewed during the football stitching process, which did not waste their productive work time.

**Sampling Techniques**

The study is aimed at figuring out the impact of *foreign affiliation* on *low-income rural households* in some areas of rural Pakistan, where *foreign affiliation* can be linked to the rural poor through established *working units*. Different sampling techniques are used to draw the sample for different data groups, however, following the objective of the study and considering the timeline and cost constraints faced by the survey procedure, an

---

\(^{149}\) The young and literate respondents were a bit more precise in answering the questions, whereas the response of older respondents was not that precise as for them it took longer to think about and confirm certain questions.

\(^{150}\) It allows the researcher to design the survey instruments as well as the timings of data collection according to the requirement of the study. See also White (2006).
intrinsically stratified sampling procedure was adapted,\textsuperscript{151} which is considered as a convenient technique for obtaining separate estimates for each sub-domain within the overall population.\textsuperscript{152}

For the treatment group, the two-stage stratified cluster random sampling procedure is followed.\textsuperscript{153} As a first step, the stratification was done, i.e. the rural areas (strata) were identified where working units are established. On the basis of convenience, three of these rural areas were selected for the survey.

For direct treatment group, `clusters` including the population involved in working units are defined. Within these clusters, the workers of the working unit, which are directly being affected by the working unit, are randomly chosen for the interview. It was relatively easy to randomly draw the sample from the working unit employees and their corresponding households. All the employees of the working units were interviewed at their workplace.

Indirect treatment groups consist of the individuals living in the working units' destinations but are not directly involved in the working units. For this indirect treatment group, the households are required to be sampled from a cluster of low income groups. However, for the area under study, no lists reflecting the income level or welfare of households were available. Preparing such lists by the researcher was impossible due to time and cost constraints.

Since no concrete information indicating the households’ economic strength was available, for the indirect treatment group, the sample was drawn more on the `snowball sampling, referral sampling` and `judgmental` approach.\textsuperscript{154} The selection of such households was mainly indicated by the working unit employees. Some of them were asked to indicate the households who are living with more or less similar per capita income or broadly speaking who are facing similar socio-economic conditions to them. Moreover, it is customary in

\textsuperscript{151} It allows the sampling procedure to be partitioned into certain subdomains and data can be sampled within those preselected subdomains.
\textsuperscript{152} Levy and Lemeshow (2008).
\textsuperscript{153} Kalton (1983) and Levy and Lemeshow (2008).
\textsuperscript{154} See also Sue and Ritter (2007).
Snowball sampling or referral sampling is appropriate to be used for a research where target population is difficult to identify. Initially a small pool of informants is located, they are asked to nominate other participants to whom they know through their social network and who are meeting the eligibility criteria. Referral sampling also stands for the same meaning that potential participants are referred through other informants.
many of these areas that people belonging to broadly similar socio-economic groups are populated in one slum. Most of the households that were interviewed under the *indirect treatment group* were living in the neighborhood of the households belonging to the *direct treatment group*. Nevertheless, even after the indication of the *low-income rural households* by the neighborhood and other village residents, selection was made in a judgmental way.155

For the *control group*, as a first step a matched sampling procedure is followed.156 Matched sampling includes selection of units from large reservoir of *control groups* that is similar to the *treatment group* in many respects. Usually *control groups* are quite larger than the *treatment groups* because *treatment* is applied to relatively smaller groups in many studies.157 Thus the matched pair of two study objects was prepared as; the *treatment group*, exposed to the *working unit* and the *control group* not exposed to the *working unit*. The matching of groups in rural area was done by selecting a rural area that was supposedly sharing similar socio-economic characteristics as the *treatment group*.

155 The welfare level or income level of a household can be judged (with very few exceptions) from the dwellings type, type of material the household is made up of and the area of the household etc.
156 Matched sampling is used to analyze the casual effects of some *treatment* or intervention, particularly when it is impossible to conduct randomized experiments due to whatever reasons.
4 Profile of the Case Study Area

This study was conducted to evaluate the impact of foreign affiliation on the wellbeing of low-income rural households in Pakistan. As already mentioned in the previous chapters, the relationship between foreign affiliation and the rural poor is established through production of hand stitched footballs in some of the rural areas of Pakistan which are exported to foreign affiliates. To accomplish the study objective, a self administered survey was conducted in February-March 2010, in four rural areas in the Punjab Province of Pakistan.

4.1 Profile of Pakistan

Pakistan is located in South Asia and is known formally as the `Islamic Republic of Pakistan`. According to the Ministry of Finance (2012), Pakistan is the sixth most populous country in the world and second largest country in South Asia, with a population of 184.35 million in 2012-2013 and a population growth rate of 2%. The median age in Pakistan is 22 years. In Pakistan, the majority of the population (62%) reside in rural areas with 38% of population living in urban centers.

4.1.1 Socio-Economic Profile

Pakistan is ranked amongst the low income countries according to the World Bank statistics, having a GDP per capita of $1,189. However, with regards to the Human Development Index, presented in the UNDP’s Human Development Report 2011, Pakistan is ranked in 146th place.\textsuperscript{158}

Pakistan is a capital deficient country, and has to rely heavily on foreign capital inflows in order to bridge the saving investment gap.\textsuperscript{159} Due to the lack of public investment in education,\textsuperscript{160} illiteracy in Pakistan is very high,\textsuperscript{161} serving as a big hindrance to development and poverty reduction. According to the statistics of Pakistan Social and Living Standard Measurement (PSLM), the literacy rate (for population $\geq 10$ years) is 58%

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{158} UNDP (2013).
\item \textsuperscript{159} Siddique and Kemal (2006).
\item \textsuperscript{160} Public investment in education was less than 1\% of GDP in 2002-2003, however Government changed the trend in 2004 – 05, and increased the trend for higher education up to 84\%.
\item \textsuperscript{161} In 2004 the official literacy rate of Pakistan is 54\%, whereas for India, it is 70\%. For Pakistan the female literacy rate is even lower, as it is 42\% for females and 66\% for males.
\end{itemize}
\end{footnotesize}
during 2011-2012, with much higher rates for urban areas (75%) than for the rural areas (49%). With regard to gender, the male literacy rate is much higher (70%) than the female literacy rate (47%).  

For Pakistan, the working age population comprises 60% of the total population. The country is equipped with sufficient human resources; however, due to inadequate human resources development programs these resources are underutilized. During 2010-11, out of the total labour force (57.24 million), 3.40 million people were unemployed, however, the unemployment rate decreased from 7.7% in 2003-04 to 5.9% in 2010-2011.  

According to 2003-2004 statistics, the unemployment rate was highest amongst the rural population and the extremely poor community comprising 10.4% and 10.96% respectively. For this reason, the Pakistan poverty reduction strategies have focused to offer rural employment opportunities through Khushal Pakistan Program.  

Similarly, female work participation in Pakistan is much lower than that for males. According to the World development report 2012 of the World Bank, 28% of females in Pakistan participate in the labour force, whereas, the participation rate of males in the labour force is more than 82%. Due to cultural attitudes and social norms towards women in the work place, female labour force participation rates are persistently lower in South Asia at around 31.8%.  

4.1.2 Poverty Trends in Pakistan  

The economy of Pakistan is facing massive poverty, which is an alarming and the most pressing issue to be dealt with by the international community. Almost a decade ago the decisions were made to increase expenditure on anti-poverty programs from 5.4% of GDP in 2003-04 to 6.8% of GDP in 2007-2008.
According to the statistics of 2008, in Pakistan 21% of the population is living on less than $1.25 a day with a poverty gap of 3.5%, whereas 60.2% of population is living on less than $2 per day with a poverty gap of 17.9%.  

For Pakistan, the Poverty line is constructed by aggregating the expenditures for consuming a calorie intake of 2350 calories per day per adult, along with non food consumption expenditures. According to the Ministry of Finance (2009a), from 1989 onwards in developing countries, including Asia and the Pacific, a significant reduction has been observed in the severity and depth of poverty. From Pakistan’s perspective, however, different trends in poverty status has been observed such as considering the headcount ratio and comparing with 1998-99 (30.6%), poverty increased in 2000-01 (34.5%) and then again declined in 2005-06 (22.3%).

4.2 Characteristics of Rural Livelihoods

Poverty is predominantly a rural phenomenon and is mainly characterized as being trapped with poor options. Particularly, remote areas are deficient in enjoying the diversified set of opportunities, which restrict them from being well developed and stand side by side with urban areas. These choices and options available to human beings are closely associated with the individuals as well as community level assets or characteristics. Thus, addressing poverty requires the broadening of choices and opportunities.

In general, four types of assets jointly represent the viability of rural livelihoods, such as natural capital, physical capital, human capital and financial capital.

Therefore, the policies that are designed to reduce poverty in rural areas should be well informed on the availability of these sources of capital in the area and their possible interactions. For example, it is recognized that the poor exhibit fairly low level of human capital, which also serve as a hindrance for them to avail better employment opportunities. Thus the poor can be facilitated through providing them the ways to enhance their skills

---

168 World Bank (2012b).
172 Ellis (2000b).
and human capital that could be subsequently helpful for hunting good employment opportunities. Having different alternatives and opportunities for income generation can minimize the difference among the households’ destitutions and income status. Some of the characteristics of the rural areas of developing countries that are relevant for the present study are discussed below.

4.2.1 Agriculture and Seasonality

Similar to other developing countries, poverty is widespread in rural areas of Pakistan, which is mainly characterized by the relative scarcity of employment opportunities available for the rural poor. In rural areas, the widely recognized source of income is linked to the agricultural sector, and Pakistan is of no exception. In the agricultural sector disguised unemployment is also very common.

Moreover, due to being mainly involved in the agricultural sector and receiving most of the income from this source, the income of the rural households is context specific. In the agricultural sector, the level crop production and harvesting heavily depends on specific time of year. Again these activities are very sensitive to the environmental factors such as rain intensity and duration, temperature variations etc. This seasonality in the agricultural sector may cause peaks and troughs for demand and utilization of labour in the labour market.

4.2.2 Gender

Within rural livelihoods, discrimination on the basis of gender is common and thus the poverty incidence of rural households is linked to rural females in many respects. Male and females have different access to assets, resources and opportunities. Women have relatively less command over the decision making process, and allocation of belongings

---

174 Ellis (1999).
175 Usman (2009).
177 It is the situation where too many workers are filling too few jobs.
178 Ellis (2000a).
179 Kabeer (1997).
and resources. Moreover, according to Muslim tradition, females are supposed to be restricted to domestic activities, and are not respected if they have to work in an environment with exposure to male colleagues. Provision of employment opportunities exclusively for females where they do not have to work with male colleagues may encourage them to participate in the labour force. Generally in South Asia, female participation in the labour force is lower due to existing social norms and cultural attitudes towards women in the working place.

In the labour market, particularly in the agricultural sector, females encounter a limited range of job opportunities and are paid relatively less than their male counterparts. In general, women in rural Pakistan receive no payment or appreciation if they work on their own field. However, when they are working on someone else’s fields, they receive very little payment. Therefore in rural areas, it is required that the activities should be promoted within the locality of the village and that these are conveniently accessible for females.

4.3 Field Research Area; Sialkot City

Socio-Economic Profile and Reason for Selecting Sialkot as the Case Study Area

Sialkot District, one of the 36 Districts of Punjab, is situated in the Northeast of the Punjab Province. Sialkot, which is the capital city of the Sialkot district, is bounded on the North by Jummu, the Northwest by Gujrat, on the west by Gujranwala and on the South by the city of Narowal. The land in Sialkot is smooth and fertile, however, the Monsoon rainfalls quite often result in floods.

According to the Pakistan Bureau of Statistics in 1998, Sialkot District expanded by 3016 Sq. kilometers, with 74% of the population living in rural areas and the remaining 26% living in towns. The average household size was 7.0 during 1981-1998, with a sex ratio of

---

180 Molteno et al. (2000).
181 Majority of working females expressed during the interview that we are permitted to come to the working unit due to the fact that we have to work within the boundaries of the working units and we have not to interact with the male workers. Otherwise our family head particularly father or elder brother would not allow us to go out of house for doing paid job.
183 Ellis (1999), Ellis (2000a) and Usman (2009).
184 Usman (2009).
185 Ellis (1999).
105.2 males per 100 females.\textsuperscript{186} Regarding connectivity to the rest of the world, Sialkot city has a dry port, which was the first such private sector dry port in Asia and an international airport, which was the first such private sector airport of Pakistan.

After Lahore and Faisalabad, Sialkot is the 3\textsuperscript{rd} largest economic hub in the Punjab. A branch of the Lahore Stock Exchange operates in Sialkot, named as, the Sialkot Trading Floor. Sialkot is considered Pakistan’s second largest source of foreign exchange earnings that are realized from exports and remittances sent by overseas Pakistanis.\textsuperscript{187}

Through exports the city earns approximately US $1 billion per year and it is estimated that more than 400,000 individuals are either directly or indirectly involved in export activities. Amongst export items, the sports goods sector compromises the biggest share with total exports of US $350 million per year.

Sialkot has gained a long standing world-wide reputation for expertise in the manufacture and export of sports items and accessories over the last 100 years. Sialkot is involved in the production and export of quite versatile products ranging from sports goods to textile and engineering products. Many global brands and companies together with domestic industries have established \textit{working units} to produce goods utilizing the cheap labour in the area. This establishes a link between the openness and economic status of individuals in that area. Taking this link as an opportunity for evaluating the impact of \textit{foreign affiliation} on the living conditions of this labour community it is most likely unskilled or semiskilled labour and belongs to poor households.\textsuperscript{188}

\textbf{4.3.1 The Football Stitching Industry in Sialkot}

Within sports items, Sialkot is well renowned for the production and export of soccer balls.\textsuperscript{189} Sialkot caters for 70\% of the total global demand for hand stitched footballs, representing a volume of 40 million balls with a value of US $210 million per annum. The stitching process of a hand stitched football does not require any kind of sophisticated skills, rather it can be considering a low skilled or semi-skilled expertise. A workforce of

\textsuperscript{186} Government of Punjab (2011).
\textsuperscript{187} Government of Punjab (2011).
\textsuperscript{188} Unskilled labour is usually less paid and comes under the low income group of society.
\textsuperscript{189} Nadvi (2008).
approximately 60,000 is involved in the production of these balls that are exported globally by more than 1000 manufacturers, the majority of which are classified as Small Manufacturing Entrepreneurs.\textsuperscript{190}

Sialkot gained fame in 1982 by producing the ‘Tango Balls’ that were used in the FIFA Football World Cup. After 32 years, the Sialkot again produced the ‘Brazuca Balls’ that were used in the 2014 FIFA World cup.\textsuperscript{191}

Many of the football stitching industries that are working in Sialkot produce footballs for the global markets. Anwar Khawaja Industries\textsuperscript{192} (AKI) is also one of these industries and is pursuing its business in the hand stitched football industry.

AKI was founded in Pakistan in 1952 and became the first FIFA producers in Pakistan in 1967. Though it is not the biggest industry in the area, it has shown impressive growth and has matured over time with respect to quality, products and volume. After being incorporated in 1964, this organization earned recognition as trust worthy trade partners within a decade. In 1966, the company became the first manufacturer of pre-stretched leather balls and developed its own brand, Double Star, which remained in the market for decades as a symbol of quality. In the trade, AKI, after acquiring necessary technology to produce hand stitched synthetic balls, have entered into an enduring business association with an international brand `Select Sports`. Following the placement of the first order in 1976, the partnership between AKI and Select Sports started. This has flourished over time and resulted in a long lasting international affiliation.

`Select Sports` was founded by Eigil Nielsen,\textsuperscript{193} who in spite of a remarkable ability to play football and despite receiving offers to join top rating football clubs, decided not to pursue his career as a football player. Instead, based on his experience in the football industry, he developed a world leading football brand. In 1946, Nielsen manufactured his first football and named it Select. It is regarded as the year of Select Sports as in the same year, the Danish Football Association agreed upon using the Select balls. The production of `Select`
footballs and handballs started initially in Denmark, then shifted to Sweden subsequently to Hungary. Then Nielsen met AKI (2005) from Sialkot, which after some meetings and transfer of technology resulted in a long term association. The competence and knowledge enchanted by AKI is strongly valued by the association of Select Sports. Nelson himself mentioned that Select Sports would never have attained its current success without AKI.\footnote{Anwar Khawaja Industries.}

Select Sports sells nearly 3 million balls per year. Approximately 90\% of these hand stitched balls are manufactured in Sialkot by AKI. The football stitchers are not direct employees of the companies but are part of a subcontractor network and do not receive a fixed salary. Instead that are remunerated based on the number of balls they produce.\footnote{Select Sports available at (http://www.select-sport.com).}

In 1992, AKI won the Guinness World Record for the World’s largest ball. The industry became ISO 9002 certified\footnote{It ensures the standard of quality management and is organized for the companies to assure that they are fulfilling the demand of consumers as well as stakeholders.} in 1999. The industry has also established ILO monitoring units and conducts its operations according to their directions. For the accomplishment of this commitment, the company has established \textit{`single-sex`} football stitching centers in different villages in the city of Sialkot. Amongst these stitching centers, three were visited to conduct the interviews, which formulate the \textit{`direct treatment data group`} for the present study.

\section*{4.3.2 Traditional Organization of the Football Stitching Industry}

The initial operation of football stitching started as a domestic activity and this remained prevalent until the Atlanta Agreement.\footnote{Refer to 4.3.3 Atlanta Agreement.} According to this operation, the subcontractors or middlemen were actively playing their part between the big industries and workers to realize the produce of the industry for exports.\footnote{Lund-Thomsen \textit{et al.} (2012).} Amongst these workers the majority was residing in rural areas. Since football stitching does not require any sophisticated skills and special equipment,\footnote{Naseem (2010).} an extended network of subcontractors were working to supply the material of a football to the homes of workers in the villages. The footballs were stitched by rural semiskilled workers at their homes and the prepared footballs were collected by the

\footnotesize

\footnote{Anwar Khawaja Industries.}
\footnote{Select Sports available at (http://www.select-sport.com).}
\footnote{It ensures the standard of quality management and is organized for the companies to assure that they are fulfilling the demand of consumers as well as stakeholders.}
\footnote{Refer to 4.3.3 Atlanta Agreement.}
\footnote{Lund-Thomsen \textit{et al.} (2012).}
\footnote{Naseem (2010).}
subcontractors, while the workers were paid per stitched ball payments by the ball collectors. In this process, the balls were mainly stitched by female workers with females representing 66% of the workforce involved in this paid work. There was also a high risk that footballs were being stitched by children, as monitoring was not possible for this home-based activity. After the Atlanta Agreement in February 1997, the nature of the stitching process had to be changed and the first phase of this project started to be realized in October, 1997.\textsuperscript{200}

Traditionally the manufacturers of the Sialkot football industry used to outsource work through middlemen to stitchers based at homes in more than 1600 villages surrounding Sialkot city. Due to being non-capital-intensive in nature, this business has mushroomed in small shops and home based units where the whole family including children used to be involved in the football stitching process. Remuneration was based on the volume of footballs produced, which does not save manufacturing costs if stitching is done by children. For these reasons, it was difficult prior to the Atlanta Agreement to monitor any involvement of child labour in the stitching process.\textsuperscript{201}

\textbf{4.3.3 Atlanta Agreement}\textsuperscript{202}

The issue of the utilization of child labour in football production was initiated by the international labour agencies who mobilized consumers, particularly American mothers, around the issue that the football their children were playing with is manufactured through the use of child labour. This issue pressurized football industry associations such as FIFA to take action.\textsuperscript{203}

Originating from the allegation of the use of child labour, however, during mid 1996 the surgical and soccer ball industry of Sialkot, Pakistan suffered the withdrawal of the General System of Preference (GSP).\textsuperscript{204}

\textsuperscript{200} Naseem (2010).
\textsuperscript{201} Khaliq (2004).
\textsuperscript{202} Khaliq (2004), Nadvi (2008), Siegmann (2008), Lund-Thomsen and Nadvi (2010a) and Lund-Thomsen and Nadvi (2010b), Naseem (2010) and Lund-Thomsen et al. (2012).
\textsuperscript{203} Molteno et al. (2000).
\textsuperscript{204} Naseem (2010). GSP is a system in which developed countries charge relatively preferential lower tariff rates on commodities from certain developing countries. See also Husted and Melvin (2013).
Consideration of Corporate Social Responsibility (CSR) which is meant to take account of a business’s impact on society is playing a key role globally. Within the international market, therefore, CSR has become a mainstream business activity and is increasingly important for the competitiveness of the enterprises and for long term trade relationships to exist.\textsuperscript{205}

Therefore, non-compliance with CSR standards might result in expulsion from profitable global markets.\textsuperscript{206} A majority of the big sports companies announced that they are not going to accept any product that is not prepared according to the ILO’s child labour standards. Being the major exporter of hand stitched footballs, Pakistan face acute global pressure to eradicate child labour from the general export industry of Pakistan and the football industry in particular.

Following CSR Standards, in 1992, an International Program on the Elimination of Child Labour (IPEC) was established by the International Labour Organization (ILO) to combat child labour in Pakistan. To realize this commitment, Pakistan became a member of ILO_IPEC in June 1994, by signing a Memorandum of Understanding (MoU).\textsuperscript{207} Pakistan signed the Atlanta Agreement on 14\textsuperscript{th} February 1997 to eliminate the use of child labour in the football industry in Pakistan.\textsuperscript{208} This agreement was signed by the Sialkot Chamber of Commerce and Industry (SCCI) together with the ILO and as part of IPEC, to bring an independent monitoring facility program in motion. In this regard, in August 1997, the first large project of ILO-IPEC was launched in the Sialkot district of Punjab entitled “Elimination of Child Labour in the Soccer Ball Industry”. The trend in employing labour in the football industry was changed with the introduction of this program.\textsuperscript{209}

4.3.4 Working Units\textsuperscript{210}

Given that the monitoring of the use of child labour in football stitching at home was very difficult, the football stitching process was transferred to ILO certified stitching units. Any

\textsuperscript{206} Nadvi (2008).
\textsuperscript{207} International Labour Office (2005).
\textsuperscript{208} Nadvi (2008) and Naseem (2010).
\textsuperscript{209} International Labour Office (2005).
\textsuperscript{210} These \textit{single-sex working units} were established for stitching footballs and are also known as stitching centers.
location, be it a house, a shop or a small shed, where 5 men and 3 women were sitting together to stitch football was considered as a registered stitching unit and thus accountable for being monitored. In the early days, however, the registered members were not compelled to establish formal stitching centers.\textsuperscript{211}

To compete in the global market and as a result of this program, the football stitching is supposed to be done only in the working unit (also known as stitching centers) and all the manufacturers were suggested to join and facilitate the monitoring. The registered manufacturers were proposed to submit the details of their production capacity, such as number of stitchers, stitching units, the names of middle man used and daily production etc.

The statistics provided by the companies, however, used to be verified through unanticipated and unannounced visits to these stitching centers. The basic job of the monitors was firstly to confirm that no child labour was involved in stitching these footballs and secondly, that stitching had been done only in the centers. This monitoring was welcomed by many manufacturers starting from 22 manufacturers who volunteered in the beginning. This number increased to 98 registered manufacturers in 2002 that were producing 95\% of total footballs produced for export markets.\textsuperscript{212}

The Atlanta agreement remained successful to eliminate child labour through establishing formal \textit{working units}, accepting adult workers only and offering schooling opportunities to children who are taken out of football stitching. The establishment of the stitching centers and the fall in demand for products not prepared under the ILO monitoring program almost eliminate child labour and encouraged working at the stitching units.\textsuperscript{213}

Monitoring the football stitching centers was performed both at internally and externally. Internal monitoring was done by the industry itself, as the address of all centers must be provided and secondly every center holds a register where the name, age and address of every worker and their attendance are recorded every day. A football stitcher can stitch 3.5 balls on average. The payment was made to the stitchers per football stitched.\textsuperscript{214} This payment was 40 PKR ($0.47) both for males and females. At the end of the day the

\textsuperscript{211} Naseem (2010).
\textsuperscript{212} Khaliq (2004).
\textsuperscript{213} Naseem (2010).
\textsuperscript{214} Siegmann (2008).
number of stitched balls was counted to confirm that all the footballs were stitched in the center. This information was sent to ILO for external monitoring. ILO employed officials and formulated different inspecting teams to monitor the football stitching. Each inspecting teams received a list of some of the centers and visit at least 5 or 6 of them. At the end of the afternoon the information gathered by inspecting teams is entered into a data base to assess the production of the working unit and to ensure that the production is done only within the center.215

Single-Sex Working Units: Manipulation of Female Participation in Football Stitching

In early 1999, the ILO recommended the establishment of village-based female stitching centers that are registered as `single-sex’ where there existed any dwelling in the village, where more than three females can stitch. Although, a higher percentage of female workers were involved in football stitching even before the Atlanta Agreement, the establishment of the working units ensured better working conditions and wages.

The focus industry of this study also established single-sex working units where the provision of clean drinking water, a vivid atmosphere, a better sitting arrangement and also a supply of electricity was ensured in these working units. Tea was also served to the employees in the afternoon. The mothers were allowed to bring their young children with them to the working place and a very small portion of the big hall was fixed up for children to play. Day care help was provided at the working unit to take care of a limited number of children.

Foundation of these single-sex stitching units also enhanced working productivity particularly for females where they can completely concentrate on their work. Working at home could distract their attention from work to household chores or taking care of children and thus can reduce their productivity.

It is also argued that for women, this home based stitching opportunity was more viable than going to the centers as they can also perform their household duties whilst stitching at home. It is suggested by some surveys that the females who are living in nuclear families

215 The information was provided by the managers of the working units. The same information is also available on the following link. http://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=2125&context=globaldocs
may lose their work and face problems for leaving their homes for work. However, those who are living in joint family system can easily go to these centers. It is argued by a study conducted by ‘Save the Children’ in 1999, that during the first 16 months of the ILO-IPEC program, women work participation in football stitching decreased due to cultural constraints on the working places particularly for young girls.\textsuperscript{216}

According to Molteno et al. (2000), home based football stitching was essential and easier for many women as they can stitch footballs while being at home and can combine it with household chores. With the establishment of stitching centers, not only did many women lose their jobs, but their children were also taken out of work, thus resulting in the loss of two household incomes at once.

\textsuperscript{216} Naseem (2010).
5 Descriptive Analysis of Low-Income Rural Households Data

This study hypothesizes that the well-being of low-income rural households, which is taken as a dependent variable, may be affected by foreign affiliation. The foreign affiliation in this study is gauged through the working opportunities offered in rural areas by working units that are established by the domestic industries on the demand of their foreign affiliates. These working units provide the employment opportunities to the low skilled workers in the rural area. Hence the employment opportunities available in the area are also a very important factor to earn a higher income.

Thereby the impact of foreign affiliation on the well-being of the low-income rural households are analyzed thorough measuring the changes in the per capita income of the rural households that are due to these additional working opportunities offered by the working units in the rural area.

5.1 Research Variables of the Study

In order to evaluate the descriptive and empirical behavior of the study, it is necessary for theoretical concepts to be translated into research variables. These variables include dependent variable and certain independent variables, as follows:

Dependent Variable; Per Capita Income

The dependent variable, which is the well-being or economic welfare of the low-income rural households, is estimated through the per capita income of the households. Per capita income, as a dependent variable of the study, is computed as the total income reported by the household and divided by the total number of members within the household or simply by the household size. Thereby it already caters for the family size.

To estimate the earning strength and economic situation of a household, per capita income is considered as a potential measure by many studies. This approach is also used by the governments of low income countries to evaluate their poverty status. However, the

---

217 Refer to 4.3.4: Working Units.
219 See also Datta and Meereman (1980), Kanbur and Squire (1999), Mina (2008), Ministry of Finance (2009a), Vu and Baulch (2011) and World Bank (2012b).
220 Wisor (2012).
expenditure approach is also employed by many studies as a reliable source to determine the well being of the household.\textsuperscript{221}

5.2 Socio-economic Characteristics of the Rural Community

National and regional level characteristics might be coupled with the welfare status of inhabitants.\textsuperscript{222} Higher poverty rates are observed in the areas which are facing poor a resource base and unfavorable geographical and climatic conditions.\textsuperscript{223}

5.2.1 Availability of Infrastructure in the Community\textsuperscript{224}

Community level characteristics are very important in determining the well being of a household. Although these activities are provided by the Government as public good, nevertheless, the quality and quantity of these attributes, makes a visible distinction in the liveliness of the rural households.\textsuperscript{225} As investing in water, sanitation, health facilities, proximity to paved roads, education and employment opportunities may largely contribute to accumulate the strength that is considered a prerequisite for earning higher income level, such as accelerating growth and reducing poverty.\textsuperscript{226} It is well evident in the literature that infrastructure investment is crucial for achieving a better quality of life, fostering the economic growth, reducing income inequality and making growth more beneficial to the poor.\textsuperscript{227}

However, the positive impact of infrastructure investment on growth and poverty depends upon the direct and indirect link of infrastructure services within poor households who are most likely among the low income households. For instance the foundation of a port may hardly have any direct relationship with semi- skilled or low-skilled workers, who are earning lower wages but may have an indirect relationship with them through increasing

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{221} For further details see also section 2.2.1 Poverty Assessment and Measurement.
\item \textsuperscript{222} World Bank Institute (2005) and Khandker \textit{et al.} (2010).
\item \textsuperscript{223} It may include the poor level of infrastructure and opportunities, remoteness of rural areas, very low or very heavy rainfall, susceptibility of annual floods etc.
\item \textsuperscript{224} The community level characteristics are collected through conducting the focused group discussion based on the community questionnaire.
\item \textsuperscript{225} Ellis (1999) and Ellis (2000b).
\item \textsuperscript{226} Infrastructure that helps to accumulate human capital that is considered as prerequisite to earn a better income level like, education, health facilities and employment opportunities. See also McCulloch \textit{et al.} (2001), Jones (2006), Haughton and Khandker (2009) and Gilbert and Banik (2012).
\end{itemize}
\end{footnotesize}
the labour demand for semi-skilled or low-skilled workers, which in turn increases their wage rate.228

For the present study, community level information was acquired through focused group discussions conducted with some of the senior members of the villages. The infrastructure available at the community level is not very sophisticated, as within rural communities in general, the infrastructure facilities are not very well developed.229

Regarding energy availability, electricity is available in all the villages. The issue of insufficient electricity is being faced all over Pakistan, as electricity breakdown is very common every day. However, this problem of electricity failure for several hours in a day is much more severe in rural areas than urban areas. For cooking, the LP gas was provided through regular pipelines in the area in 2008. However, the LP gas can also be used through refillable gas cylinders, which are a temporary source. This opportunity is available in the area from the last decade of the last century. However, it is not convenient to use gas cylinders for cooking. There is no possibility to refill the gas cylinder in the villages; rather, it can only be refilled in the nearest town of Daska. The empty cylinder is supposed to be submitted in the Gas Agency to be picked later on. The transportation of cylinders through public transport is very inconvenient and expensive and, therefore, it is not affordable particularly for low-income rural households. This way of using LP gas is considered by low-income rural household as a luxury.

The traditional and common energy sources used for cooking are dung cakes and firewood. In the majority of the houses, the dung cakes are prepared by the females for free. The females from low-income rural households are in contact with the families who own animals, who allow them to use the waste of animals to prepare the dung cakes in return for taking small services from them such as cleaning the place where the animals are living etc.

Another very common energy source for cooking is making use of firewood. The wood to be used for cooking is gathered by the households throughout the year and sometimes purchased, which is not particularly expensive.

---

228 Jones (2006).
229 Sharan et al. (2007).
The most common water supply source in the area is the water taken from lower water sources i.e. underground sources\textsuperscript{230} which are sucked either through hand pumps or motor pumps. Hand pumps are mechanical devices that are operated manually, through blowing the handle, to suck water from the aquifers. Nearly every house in the study area has a hand pump, because it is a relatively cheap source of acquiring water and provides an opportunity to get water even if there is an electricity breakdown. Some of the houses which have a relatively high income level can afford motor pumps. These are also used to suck water from the aquifers but they work with the help of electricity and water is acquired through pipes.

Well-constructed roads particularly in rural area are very important, as it makes the accessibility of services smooth and convenient for the rural community. Therefore, proximity to paved roads is considered critical and enables improvement in the well-being of rural households;\textsuperscript{231} as if the area is not well equipped with these important basic services better quality roads improve the accessibility of these services for the rural community.\textsuperscript{232} Deficient access to urban areas restrains the potential for agricultural opportunities, economic opportunities, health facilities and commercial and educational initiatives.

Even with the existing claims of the utmost importance of roads, the construction of roads is very poor in rural areas of Pakistan.\textsuperscript{233} Within the study area two way roads are constructed, which are quite often damaged, and cannot be considered as real paved roads. It is common practice there that two vehicles travelling in opposite directions that cannot each other simultaneously and one of them has to wait for the other to pass.

Proximity of roads, from three of the treatment villages are at a distance of 7 km (Dhana Wali), 9 km (Dhilm Blagan) and 10 km (Ghurtal Gjoja) from the nearby towns respectively and the control area is at a 9 km (Waein) distance from the nearby town. The condition and quality of paved roads is similar in all of the areas, and the most common

\textsuperscript{230} It is the hole in the ground that is done by digging, boring or drilling to get access to the ground water in the underground aquifers.
\textsuperscript{231} Hettige (2006).
\textsuperscript{232} Haughton and Khandker (2009).
\textsuperscript{233} Information acquired from community questionnaire as well as observed by the researcher herself.
means of transport in the area is the three wheel vehicle know as the `Riksha or Ching Chê`
and `Tanga`. However, some other relatively modern means of transport are also used like`
Vans`. 234

5.2.2 Availability of Education Facilities in the Community

A low level of income is strongly linked to poor educational and skills attributes.235 Therefore, better education and health facilities in rural area contribute to accumulate the human capital which is a prerequisite for earning higher incomes.236

Regarding the quality of the education system, there exists huge diversity in Pakistan, with three types of schools namely Public schools, Private schools and Madrasas. 237 There is no comparison regarding the quality of education amongst these different types of institutes. Public schools are in the Urdu medium, are established by the government, and these are the only public schools that running in the rural areas. The quality of public schools is not very good particularly in rural areas, however, these are affordable for the low-income rural households.

Private schools are in the English medium, and are established in only a few of big villages, towns and cities, where a relatively higher standard of education is offered. Due to expense and only being situated in some of the villages and urban areas, the poorer communities in rural areas cannot afford to send their children to these good quality schools.

Madrasas are the non-profit Urdu medium institutes that offer religious education. In these institutes, only those parents send their children who are the poorest among the poor238 and cannot even afford bread and shelter for their children.

Regarding the availability of education facilities in the study area, only public schools are available in the area. In two of the treatment villages (Dhana Wali and Dhilum Blagan), primary school for girls and middle school for boys are available.

---

234 `Riksha` & `Tanga` are the mostly used means of transportation in the area, each can carry 6 passengers. `Riksha` is a mechanical device and `Tanga` is pulled by animals like horses. Another mean of transportation is `Van` that can carry 12 to 15 passengers.
235 Ellis (1999).
236 Mina (2008).
237 Usman (2009).
238 Vicziany (2004).
In the third treatment area separate primary schools for boys and girls are available. However, the female school is not located within in the village but rather between villages, to be advantageous to both. However, for the control group, a primary school for females and a middle school for males are located in the area.

5.2.3 Availability of Health Services in the Community

Health refers to both the physical and mental health of individuals. Although it is a God gifted attribute, it is strongly affected by food intake, the environment, and the quality of health service available to individuals. Health, which is an important attribute of human capital in general, is considered as an asset of low-income rural households. Low-income rural households can neither invest as a preventive measure in daily life to improve their health standards, nor can avail the appropriate health care as a curative measure when they are sick.

Formal medical institutes and good health facilities are better available in urban areas and towns, whereas the rural areas remain deprived from good health care, where most of the poor community is residing. Within the study area, no proper health center is established where any experienced medical staff are working. There are only small medical units that are established informally by the individuals, who were previously working as medical assistants either with some doctors or in hospitals.

5.3 Characteristics of Low-income Rural Households

The major characteristics of the low-income rural households include the attributes used by the household as well as demographic and economic aspects of the family.
5.3.1 Household Attributes: Energy, Water Source and Type of House Material

The household attributes reflect the economic position of the family.\(^{239}\) It is represented by the services used by the household like water, energy, and sanitation. The poor make use of these services differently than non-poor. The poor are most likely limited to the use of hand pumps as their main water source, wood or dung cakes for energy and not have a proper arrangement for toilet sanitation. Conversely, the non-poor have access to better services like piped water, LP gas for energy, modern toilets and better sanitation facilities etc.

The economic position of the family is also reflected by the material belongings\(^{240}\) of the household that complement their quality of life such as radio, TV, refrigerator, bicycle, motorbike, mobile phone etc. The households with a higher per capita income have much better access to these facilities than those with a lower per capita income.

The information regarding the type of energy used for cooking, water source and the type of material the house is made up of is collected in the survey and the statistics are elaborated below.

It is depicted in Figure 5.1 that in this study, the basic services used by households are not generally very sophisticated. In the aggregate data set, the hand pump is the major source of drinking water which is used by 69% of the households. Segregating the data groups into different sub-settings, a slightly lower number of households in the treatment area (68%) are using hand pumps as a major source of drinking water than the control group (75%).

Regarding the main energy source used for cooking, three options are available in the area including, Liquefied Petroleum Gas (LPG), firewood and dung cakes. The major source of energy used for cooking within the aggregate data set is dung cakes (61%). However, their use in subsequent groups varies as it is used by 64% of households in the direct treatment group, 47% of households in the indirect treatment group and 72% of households in the control group. For the aggregate sample, this source is followed by firewood that is being

\(^{240}\) Ellis (2000a), Narayan et al. (2000), Green and Hulme (2005), Sugiyarto (2007) and Vu and Baulch (2011).
used by 16% of households, including 7% by the direct treatment group, 13% by the indirect treatment group and 28% by the control group.

![Diagrams showing energy and water sources used by the households](image)

(Source: own data compilation)

Figure 5.1: Energy and Water Sources Used by the Aggregate Sample of Rural Households

Regarding the use of LPG for cooking, statistics state that 22% of households in the complete data set used this energy source. This 22% is comprised of the treatment group. However, none of the households in the control group are using this energy source for cooking. Firstly, it might be the fact that in such a rural setting, the use of LPG is considered as a luxury and is not affordable for most of the poor households. Secondly, the higher proportion of working females in the treatment group as compared to the control group, may strongly call for the need of competence and a cooking process that is not time intensive.

The housing conditions and ownership of the household reflects the welfare status of the household. Housing conditions include the size and type of material with which the house is constructed. For instance, the poor reside in small houses made up of mud and/or straw. The non-poor tend to live in the houses made up of concrete. It also includes the type of toilet and floor used by the household.

---

For the present study, three different types of material are observed in the aggregate data set - houses made up of straw, both straw and concrete or just concrete. As shown in Figure 5.2, in the direct treatment group 53% of houses are made up of straw, 7% of both straw and concrete and 40% of concrete. For the indirect treatment group 54% of households are made up of straw, 18% of both straw and concrete and 28% of concrete. In the control group, 45% of households are made up of straw, 33% of both straw and concrete and 22% of concrete only.

There is no considerable difference in the statistics of straw made houses, however, diversity emerged in both straw and concrete and concrete only houses. This difference in statistics may be attributed to the fact of the subjective analysis of opinion. In the direct treatment group interviews were conducted in the working units and questions were asked about the type of material the house is made up of and the information provided by the respondents was counted. However, for the indirect treatment group and control group the material of the house was also judged by the interviewer in addition to the views of the respondents.
Another important and very obvious indicator of household welfare is the type of toilet being used by the household. As depicted in Figure 5.3 the majority of the houses are using permanent pit latrine (69%) in the aggregate sample. For subsequent groups, the permanent pit latrine is used by 71% of households in the direct treatment group, 74% in the indirect treatment group and 62% in the control group. Some of the households in the data sample do not have a toilet in the house, including 12% of households in the direct treatment group and 6% in the indirect treatment group. Only one of the households in each group is enjoying a modern toilet in the house which comprise less than one percent of the sample.

Moreover, the respondents were also asked about house and asset ownership. Nearly 99% of respondents were living in their own houses, however, did not own any other assets in addition to their houses. It is conceivable to believe that low-income rural households hardly own any assets like land or other property.

(Source: own data compilation)
It is also documented in literature that landlessness and rural poverty are closely linked to each other,\textsuperscript{242} since land ownership is considered as one of the very important endowments for low income households to determine their economic status.\textsuperscript{243} Poor households are most likely holding very little or no land, and therefore are falling in the group of low income households, as they have to rely only on their wage income rather than the any other earnings from land or capital.\textsuperscript{244}

Conclusively, we learn from the decomposition of the data groups regarding housing attributes, that there does not exist considerable difference between the groups except the use of energy for cooking and the type of material the house is made up of, which reflects the fact that the households in all three data groups are enjoying more or less similar facilities, and therefore belong to the same socio-economic group.

5.3.2 Demographic Characteristics of Low-income Rural Households

Demographic characteristics of household largely influence the income status of the households,\textsuperscript{245} as some of the demographic characteristics of the poor are different from the non-poor like HH size, HH composition and age of HH members.

Thus to determine the well being of a household, certain demographic characteristics both at a household and individual level are very challenging. Among others, these factors include the HH size, HH gender composition, age structure of the employees of the HH and the extent of the labour force participation of both male and female members.\textsuperscript{246} The following discussion organizes these characteristics into certain groups and elaborates on them in greater detail.

\textsuperscript{242} Anwar and Ali (2004).
\textsuperscript{243} Sugiyarto (2007) and Vu and Baulch (2011).
\textsuperscript{244} Rosenzweig (2008).
\textsuperscript{245} Refer to Section 2.2: Conceptualization of Poverty: Definitions and Attributes.
\textsuperscript{246} Refer to Section 2.2: Conceptualization of Poverty: Definitions and Attributes.
5.3.2.1 Household Size of Low-Income Rural Households

Household size has been well documented in the literature to be used as a poverty indicator and concludes that the poor are most likely living in larger households than the non poor.\textsuperscript{247} This is specifically the case where the prevalence of children in the household is larger.

Asogwa \textit{et al.} (2012) find the household size as the most important factor for determining household poverty intensity and conclude that a 1\% increase in household size will increase the poverty severity by about 0.703\% for rural Nigeria. In a study for Pakistan, according to Amjad \textit{et al.} (2008), the Pakistan Institute of Development Economics shows that the poverty incidence for relatively larger households is more than three times that of smaller households because larger households are most likely to have more young family members and dependents.\textsuperscript{248}

In this study, the average household size within the aggregate data set is 7.08 persons. This is consistent with previously documented statistics as in a household survey of 43 developing countries; Bongaarts (2001) finds that the average household size in Pakistan is 6.7. Similarly, during 1981-1998, the average household size of the study area of Sialkot was 7.0.\textsuperscript{249} Figure 5.4 compares the distribution of the continuous variable of the household size among the different data groups. The charts suggest that the variable is normally distributed.

\textsuperscript{248} Per capita income of the household is widely used as a measure of economic status of the household, which also takes family size as denominator of family income; reflecting that higher would be the household size, lower would be the per capita income.
\textsuperscript{249} Government of Punjab (2011).
Figure 5.4: Household Size of Three Data Groups

(Source: own data compilation)
5.3.2.2 Age Composition of Low-Income Rural Households

The age composition of the household is presented in Figure 5.5. The average age of the aggregate sample is 20.94 years\textsuperscript{250}, ranging from a minimum of 11 years to maximum of 38 years. This relatively lower average age of the household signals the existence of a higher proportion of children in the family. Within the aggregate sample the average proportion of children below 14\textsuperscript{251} years is 42.78\%. According to the World Development Indicators (2012) statistics, in rural areas of Pakistan the proportion of children below 14 years is 35\%.\textsuperscript{252} A higher proportion of children below 14 years old indicates that relatively less family members in the HH can be economically active.

\textsuperscript{250} Ministry of Finance (2009b) states that the median age in Pakistan is 20 years.
\textsuperscript{251} Proportion of kids below 14 years= (Number of Kids below 14 years/ HH Size)*100
\textsuperscript{252} In rural areas population growth rate is relatively higher than the urban areas which reflects higher proportion of kids below 14 years.
Figure 5.5: Average Age of Low-Income Rural Households

(Source: own data compilation)
Table 5.1: Proportion of Kids Below the Age of 14 Years

<table>
<thead>
<tr>
<th>Data Groups</th>
<th>Kids below 14 years (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct treatment group</td>
<td>38.99</td>
</tr>
<tr>
<td>Indirect treatment group</td>
<td>41.29</td>
</tr>
<tr>
<td>Control group</td>
<td>48.05</td>
</tr>
<tr>
<td>Aggregate sample</td>
<td>42.78</td>
</tr>
</tbody>
</table>

(Source: own data compilation)

Table 5.1 shows the proportion of children below 14 years of age for different data groups. Segregating the data for different data groups, shows that the control group has the lowest average family age showing a higher number of children below the age of 14. The presence of a large proportion of children below the age of 14 in the family therefore causes a higher burden on the economically active proportion of the household. The relatively lower proportion of kids in the treatment group indicates the presence of a higher proportion of economically active females in the family, thus reducing the likelihood of females to being involved in expansion of their families.

5.3.2.3 Proportion of Females in Low-Income Rural Households

The presence of females in the family has been used to identify the economic position of the households. A higher proportion of females in the family are most likely leading to a lower level of income in the household.

In general, the participation of females in the labour force is very low in Pakistan. Particularly in the rural area of Pakistan, it is not very customary that females are go out to paid jobs and, therefore they are not economically active.

254 Female participation in labour force is low in developing countries, particularly it is low in Pakistan. See also Hussain (2012) and Baulch (2002).
255 World Bank (2012b) states that the during 2007-2010, percentage of female employment in industry and services is 12% and 13% respectively. However, for agriculture sector, female employment is 75%. See also Hussain (2012).
Therefore, the presence of females in the family bears an inverse relationship with the per capita income of the family. Considering this negative relationship, the presence of one extra female member in the family may lessen the per capita income of the family, since she is not supposed to be the part of labour force in later years.

Table 5.2: Proportion of Females within Low-Income Rural Households

<table>
<thead>
<tr>
<th>Data groups</th>
<th>Female Proportion in the Household</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct treatment group</td>
<td>42.03</td>
</tr>
<tr>
<td>Indirect treatment group</td>
<td>37.40</td>
</tr>
<tr>
<td>Control group</td>
<td>39.63</td>
</tr>
<tr>
<td>Aggregate data group</td>
<td>39.69</td>
</tr>
</tbody>
</table>

(Source: own data compilation)

As illustrated in Table 5.2 the household’s female proportion is 12.4% higher in the direct treatment group than in indirect treatment group, and 6.1% higher than the control group. A positive relationship is found between the proportion of females in the family and the family size. Within the different data groups, both the female proportion in the family and the family size are highest for the direct treatment group, which is followed by the control group and then the indirect treatment group. In the rural areas, households always prefer to be the parents of boys rather than girls because in later years boys can help the households in bread winning. On the other hand girls are not supposed to be economically active and increase the family income – instead their parents have to pay them dowries at the time of their marriage. The birth of a baby girl puts a lot of pressure on the parents to have a baby boy the next year. The families with a higher number of girls tend to have a larger family size as compared to the families with a higher number of boys. The parents, who are having only daughters in the family, keep on giving birth to more and more children with the expectation of being blessed with a boy the next time. In the direct treatment group, the

---

256 It is not cultural and social phenomenon in the rural area that females are part of bread earning. Moreover, the family heads do not consider it secure that females have to leave their houses for paid jobs and should get involved in the jobs where they have to work with their male colleagues. See also Section 4.2.2; Gender.
proportion of females in the family is higher than the other two groups, which emerges from the fact that in the *direct treatment group*, the interviews are conducted with the females who are working in the working center. These are the females who constitute a higher proportion of the family and have to be economically active.

### 5.3.2.4 Dependency Ratio of Low-Income Rural Households

The dependency ratio (DR), which measures the burden weighing on economically active family members within the household, is negatively related to the income and well being of the household and positively related to household poverty. According to the World Bank (2012a) study measuring 11 areas of business regulations across 183 countries, the statistics from Uganda and Pakistan show that households with a higher ratio of dependents are more likely to remain poor or fall into the state of poverty as compared to the households with a higher share of working adults.

For rural Nigeria, Asogwa et al. (2012) concludes that a negative relationship exists between the dependency ratio and a household’s economic status, stating that a 1% increase in dependency ratio would worsen the poverty severity by about 0.418%.

It holds that the higher dependency ratio of the household, the less economic activity within the family, which leads to lower per capita income of the household and vice versa.

Table 5.3 demonstrates that the dependency ratio of the *direct treatment group* is lower than the indirect *treatment* and *control group* indicating a relatively higher level of economic activity in the *direct treatment group*. The dependency ratio for the aggregate sample is 4.21 individuals, indicating that one person is earning for 4.21 persons. The dependency ratio of the *direct treatment group* is 16% lower than the *indirect treatment group* and 26% lower than the *control group*.

---

257 Green and Hulme (2005).
258 Lower dependency ratio can either be due to small family size or due to higher economic activity in within the household. Since it has been shown in this chapter already that the family size of the *direct treatment group* is the highest one among other groups, therefore, the lower dependency ratio can be attributed to the higher economic activity within the HH.
Table 5.3: Dependency Ratio of Three Data Groups of Low-Income Rural Households

<table>
<thead>
<tr>
<th>Data groups</th>
<th>Dependency Ratio (DR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct treatment</td>
<td>3.55</td>
</tr>
<tr>
<td>Indirect treatment</td>
<td>4.23</td>
</tr>
<tr>
<td>Control</td>
<td>4.83</td>
</tr>
<tr>
<td>Aggregate data group</td>
<td>4.21</td>
</tr>
</tbody>
</table>

(Source: own data compilation)

5.3.3 Economic Variables of Low-income Rural Households

Acknowledging the role of income and consumption, which are typically used and are very obvious indicators to define the level of well being of a household, there are a number of other economic characteristics that contribute to determining the well being of a household. Most notably these are household employment, income, and the assets of the household amongst others.

5.3.3.1 Average Income of Low-Income Rural Households

Regarding household income, PCI is taken as the most appropriate measure as it already accounts for the household size. Average per capita income of different data groups measured in Pakistan Rupees (PKR) is illustrated in Table 5.4.

Table 5.4: Monthly Average Per Capita Income of the Low-Income Rural Households

<table>
<thead>
<tr>
<th>Variable</th>
<th>Direct treatment group</th>
<th>Indirect treatment group</th>
<th>Control group</th>
<th>Aggregate data</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCI (PKR)</td>
<td>1517.8</td>
<td>1181.42</td>
<td>1140.62</td>
<td>1279.94</td>
</tr>
</tbody>
</table>

(Source: Own data compilation)

---

261 It is income per person and is measured by dividing the aggregate income of the household by family size.
262 PKR= Pakistani Rupees. 84.04PKR=$1 in March 2010, the time when interviews were conducted.
Per capita income of the *direct treatment group* is higher than the other two groups. The PCI of the *direct treatment group* is 28% higher than the *indirect treatment group* and 33% higher than the *control group*. The relatively higher PCI of the *direct treatment group* is indicative of their higher economic activity\(^\text{263}\) within the household which might be accredited to the female participation in the labour force. However, even, with this higher income of the *direct treatment group*, only 1% of the households are lying above the poverty line according to the World Bank’s measure of $1.25 per day.\(^\text{264}\) It could be concluded that *treatment* may reduce the poverty gap and thus the severity of the poverty, but it is not effective in lifting the *low-income rural households* out of poverty.

### 5.3.3.2 Employment Status of Low-Income Rural Households

Better employment status is well paid and thus is positively related to the well-being of a household. The employment status mainly depends on the magnitude and type of human capital and the skills an individual owns. As employment status originates from the skills specification of the employees, therefore based on different skill levels\(^\text{265}\), employment categories are defined as following:

*Unskilled workers;*

These are the workers who perform very simple duties which require no skills and previous experience. An example in developing countries is those individuals who are sitting outside the offices of the highly-skilled officials, performing routine operations like bringing tea and food for their officials and doing informal cleaning of the offices.

*Semi-skilled or low skilled workers;*

These are the workers who can perform very simple jobs and can make use of simple machine and tools. These are the ones who do not need sophisticated skills to perform their jobs. The simple skill required can be learnt on the job. In this study, football stitchers are

\(^{263}\) Higher PCI can either be due to the higher level of income earned by the HH members i.e., if a HH member is highly skilled and is able to earn handsome amount of income, or due to higher economic activity in the HH. Since it is clear, from the information provided in the next section about the skill level of the HHs, that there does not exist any considerable difference in the skill level of the individuals across HHs. Thus higher level of per capita income may be attributed to the higher economic activity in the HHs.

\(^{264}\) According to the world bank’s poverty definitions, those who are living below the income of 1.25 $ per day are poor.

\(^{265}\) Jenkins (2007).
also considered as low skilled workers, since no sophisticated skills are required for this specific work.

*Skilled workers;*
These workers can perform skilled jobs independently. They can operate heavy machines and vehicles to produce certain output.

*Highly skilled workers;*
These workers possess competence that involves extra ordinary skills, particular academic qualifications and supervisory capabilities to run projects independently.

Of all the economic characteristics, the employment status as well as the working category of the employees in the household is of fundamental importance. High skilled workers are most likely to be engaged in well paid jobs such as the management scale or government jobs, whereas semi skilled and unskilled workers have to accept less paid jobs such as drivers, football stitches and cleaners.

It can be seen in Figure 5.6 that within the aggregate data set, 64% of employees are engaged in semi skilled and low skilled jobs, 29% are unskilled workers and only 5% of workers are skilled workers. Decomposing the share of income earned from different sources states that in the aggregate sample, 32% of the share of income is earned from unskilled income sources.

*(Source: own data compilation)*

Figure 5.6: Employee's Working Categories in Aggregate Data
A segregated data group picture is presented in the Figure 5.7 which states that the majority of the interviewed workers (97%) in the direct treatment group are semi skilled or low skilled, and the remaining 3% are skilled workers. For the indirect treatment group, 46% are semi skilled or low skilled and 40% are unskilled workers. In the control group, 48% of interviewed employees are unskilled and 51% are semi skilled workers.

The interviews, based on an exclusive questionnaire prepared for employees, have been conducted for one of the employee within the household.

Figure 5.7: Employees Working Categories of Three Data Groups

(Source: own data compilation)

The percentage of income earned from unskilled employment is presented in Table 5.5. For the indirect treatment group 45.37% and for control group 49.18% of income is earned from unskilled income generating sources.
Table 5.5: Proportion of Household Income Earned from Unskilled Employment

<table>
<thead>
<tr>
<th>Data groups</th>
<th>Proportion (%) of income earned from unskilled employment (UNSEI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct treatment group</td>
<td>0%</td>
</tr>
<tr>
<td>Indirect treatment group</td>
<td>45.37</td>
</tr>
<tr>
<td>Control group</td>
<td>49.18</td>
</tr>
<tr>
<td>Aggregate data group</td>
<td>31.52</td>
</tr>
</tbody>
</table>

(Source: Own data compilation)

5.3.3.3 Female Work Participation in the Low-Income Rural Household

Within the rural areas, the proportion of working females is very scant. Due to certain cultural and regional issues, it is not considered safe for females to go outside for work and become the bread winner. The female participation in the labour force is very low. According to the Government of Punjab (2011), 1.4% of the female population is economically active in the rural areas of the district of Sialkot.

In the present study the proportion of economically active females is also lower in the aggregate data set. However, this proportion is relatively higher for the direct treatment group than other two groups. The statistics presented in Table 5.6 show that the working female proportion of the direct treatment group is 137.2% higher than the indirect treatment group and 284.7% higher than the control group. The very obvious difference in the female work participation of the direct treatment group indicates the presence of the working unit in the area that offer working opportunities exclusively for females. It might also be attributed to the fact that in the direct treatment group, interviews are conducted

---

266 See also section 4.2.2; Gender.
267 The employment and unemployment data was taken from Sialkot District Census Report 1998, since no authentic data is available which provides employment and unemployment level information for the Sialkot city.
268 Proportion of economically active females= Working females / Family Size * 100.
with the females, and in these households at least one of the females is employed unlike the other households.

Table 5.6: Proportion of Working Females in the Low-Income Rural Households

<table>
<thead>
<tr>
<th>Data groups</th>
<th>Proportion (%) of economically active females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct treatment group</td>
<td>13.85</td>
</tr>
<tr>
<td>Indirect treatment group</td>
<td>5.84</td>
</tr>
<tr>
<td>Control group</td>
<td>3.60</td>
</tr>
<tr>
<td>Aggregate data group</td>
<td>7.76</td>
</tr>
</tbody>
</table>

(Source: Own data compilation)

5.3.4 Statistics of Employees of Low-Income Rural Household

5.3.4.1 Age of Employees

Age composition matters as it shapes the income level of the household as the income level is positively related to the prime age of the individuals. In a household, where the number of children or elderly people is higher, it is most likely that the number of economically active people is lower. Albert and Collado (2004) find that age positively correlates with income. For the rural poor the number of adults is one of the very important endowments in determining the household income.269 Similarly, the households that are headed by younger heads have a relatively lower level of income than the older heads.270

The age categories of employees are also important, due to the fact that age, in some cases plays a role in determining the income level. As it is demonstrated by Figure 5.8, the majority of employees are young (58%) and middle aged (38%).

270 Haughton and Khandker (2009).
The age categories of employees in three data groups are explained in Figure 5.9. In the indirect treatment group, 42% of employees are middle aged and 49% are young. For the control group, 59% of employees are middle aged and 31% are young.

The above analysis leads one to conclude that the average age of employees is not very high and that the workers are low skilled. This reflects the fact that workers are not having high skill levels that can be accumulated with age. Thus they can start working soon after crossing the age limit of child labour. Moreover, within the aggregate data set, a large proportion of employees are unskilled or semi-skilled workers and are more likely to be involved in physical work. They can work better only in the prime age of their life, and it is not the case that they will receive some increments through age and experience.

Figure 5.8: Age Categories of Employees in Aggregate Data

The age categories of employees in three data groups are explained in Figure 5.9. In the indirect treatment group, 42% of employees are middle aged and 49% are young. For the control group, 59% of employees are middle aged and 31% are young.

The above analysis leads one to conclude that the average age of employees is not very high and that the workers are low skilled. This reflects the fact that workers are not having high skill levels that can be accumulated with age. Thus they can start working soon after crossing the age limit of child labour. Moreover, within the aggregate data set, a large proportion of employees are unskilled or semi-skilled workers and are more likely to be involved in physical work. They can work better only in the prime age of their life, and it is not the case that they will receive some increments through age and experience.
5.3.4.2 Human Capital

Human capital, which takes account of the level of education, skills and health is vital for being part of economic activities and is often considered as the most important asset of the poor. Qualified humans being equipped with better health can hunt good employment opportunities and thus can earn better income which improves the living conditions of the household. Many empirical studies have found a high correlation between human capital and monetary welfare indicators, stating that poverty is because of a lack of human capital.\(^{271}\) However, in this relationship, both correlation and causation can exist, such as a lack of human capital which can lead to poverty.\(^{272}\) It is also evident in the literature that the education of the household head is very important in determining the income level of the family,\(^{273}\) as it is inversely related to the poverty incidence.\(^{274}\)

---


\(^{272}\) Haughton and Khandker (2009).

\(^{273}\) Rosenzweig (2008).

\(^{274}\) Amjad et al. (2008).
This indicator is often taken as assets for the poor households and is considered as a prerequisite for benefitting from employment opportunities. The average education level of the household, which is calculated in terms of the number of years of schooling, is presented in the Table 5.7.

Table 5.7: Average Education Level of the Low-Income Rural Households

<table>
<thead>
<tr>
<th>Variable</th>
<th>Direct treatment group</th>
<th>Indirect treatment group</th>
<th>Control group</th>
<th>Aggregate data</th>
</tr>
</thead>
<tbody>
<tr>
<td>HH Average Education (Years of schooling)</td>
<td>4.049</td>
<td>4.131</td>
<td>4.541</td>
<td>4.241</td>
</tr>
</tbody>
</table>

(Source: Own data compilation)

Statistics indicate firstly, that the individuals in the aggregate data set are not well educated to reap the fruits of education\(^{275}\) and secondly, that they belong to low income groups and do not spend scarce financial resources on educational attainment. Regarding the average years of schooling, no considerable difference exists between the groups, which reflects the fact that all three groups belong to similar socio-economic group.

5.4 Summary of Results

Summarizing the descriptive statistics of household attributes, it can be concluded that the households in all three data groups are enjoying more or less similar facilities which reflects the fact that all the households are belonging to the same socio-economic group.

However, differences exist regarding the housing attributes particularly for the type of cooking energy and the type of material from which the house is constructed. In direct treatment groups a considerable number of respondents are making use of LP gas for cooking which might be due to the fact that within this specific group, the proportion of working females is higher, which requires minimum time to be spent in doing household chores.

Another major difference appeared among the groups regarding the type of material from which the house is constructed. This difference might be due to differences in judgment.

\(^{275}\) It is the university or at least college education that helps to hunt the better paid employment. Whereas primary education is not the one that equip the individuals with some skills, that could be helpful for finding good job. People who has not passed (5 years of schooling) primary school exam are considered as illiterates.
For the *direct treatment group* the interviews were conducted in the working center and the type of house is registered according to the information provided by the respondents. However, for the *indirect treatment group* and *control group*, the interviews are conducted in the houses, where the material of the house is visible to the researcher or the interviewers.

Regarding the household and individual level characteristics, data statistics across all three data groups are nearly similar with respect to the household average age, family size, household average education and the age categories of the employees in the household. However, the statistics of the *direct treatment group* regarding average income of the household, dependency ratio, the proportion of females in the family, female work participation, and skill level of employees particularly for semi-skilled workers group is different from the other two data groups. Regarding the skill level, none of the employees in the *direct treatment group* are engaged in unskilled working activity and the majority of the workers are doing semi-skilled jobs as many of them are working in the *working units* and belong to the semi-skilled working category.

Conclusively, a higher proportion of semi-skilled workers, higher female work participation, a lower dependency ratio, and thus the higher per capita income in the *direct treatment group* might be attributed to the presence of the *working unit* in the area. The *Working unit* in the rural destination improves the horizon of working opportunities for the households in general and for females in particular. This working incentive for females increases the level of economic activity in the family which subsequently lessens the dependency and increase the per capita income.

However, this higher average PCI in the *direct treatment group* is not sufficient enough to lift the households out of poverty, according to the World Bank’s definition of poverty - those who are living on less than $1.25 per day. It can be concluded that *foreign affiliation* is improving the economic position of *low-income rural households* through increasing their average PCI. Nevertheless this increase in PCI is not effective in bringing the households out of poverty as only 1% of the households in the complete data set are above the poverty line.
6 Linking Foreign Affiliation to Low-Income Rural Households: Empirical Tests

Taking its base from the descriptive analysis of the possible linkages between foreign affiliation and the livelihood of low-income rural households, it is required to empirically test these linkages.

Therefore, empirical analysis is designed to establish the link between foreign affiliation and low-income rural households through analyzing the aggregate household data obtained from a self-administered survey in four rural areas in Pakistan. The data is collected both from the areas exposed to the working units, referred to as a treatment group; and not exposed to the working units, referred to as control group. The case study will be concluded by comparing the different dimensions of the economic and social characteristics and living conditions of the treatment group with that of the control group. These socio-economic variables constitute information on income, educational and occupational issues. Moreover, certain demographic factors are also included in the analysis that mainly incorporates the composition of the family members in the households and their activity status.

In this study foreign affiliation, is taken as an explanatory variable, and is assumed to have an impact on the economic position of low-income rural households, which is approximated in this study through per capita income, taking it as a dependent variable. Foreign affiliation, realized through the establishment of working units in the rural areas, is speculated as an additional employment likelihood and thus income generating opportunity for the inhabitants of the area, which might improve the income level of the household.

Analytical Tools

The construction of statistical analysis is aimed at making inferences about different groups of the population of the survey data if they are being affected by the treatment or otherwise. Taking the interest of the study to estimate the effectiveness or the effect size of the treatment on the study object, the comparative research design is chosen. Empirical

---

276 Refer to section 3.3.1; Questionnaire, Definition of Interview Groups and Sample Size.
277 Refer to section 3.2; Case Study as Experimental Approach of the Empirical Study.
analysis is conducted by incorporating four different analytical tools named as Group Mean Differences, OLS Regression, Confidence Interval and Simulation.

### 6.1 Group Mean Differences

As it is obvious from the previous chapter, that descriptive statistics provide estimators of central tendency, and the like, in the data. The inferential statistics, however, examine the underlying causalities through testing the hypothesis and comparing the data groups, as comparing different data groups is a common form of scientific experimentation. Inferential statistical techniques test hypotheses about differences in populations on the basis of differential treatments. Use of inferential and descriptive statistics is rarely an either- or proposition.\(^{278}\)

The statistical explorations commence by investigating the inferential analysis that includes the group mean differences to evaluate the treatment effectiveness (effect size) is very common practice used in research and evaluation for group comparison.\(^{279}\)

For the case of group mean differences, hypotheses are formulated as follows:

\[
H_0 \quad : \text{Variances of Variables across different groups are homogeneous; Variables of different groups (affected or not affected from treatment/foreign affiliation) have same mean values (homogeneous variances) implying that foreign affiliation have no impact on the livelihood of low-income rural households}
\]

\[
H_1 \quad : \text{Variances of Variables across different groups are heterogeneous; Variables of different groups (affected or not affected from treatment/foreign affiliation) have different mean values (heterogeneous variances) implying that treatment/foreign affiliation have some impacts on the livelihood of low-income rural households}
\]

\(^{278}\) Tabachnick and Fidell (2007).
\(^{279}\) Field (2009).
Group mean analysis attempts to reveal the answer of the question e.g. “Is there a statistically significant difference between the groups”, through making use of the following tests.

Due to the present data being non-normally distributed,\textsuperscript{280} it is justified to make use of nonparametric statistical procedures. The statistical procedure used for nonparametric procedures are the Mann Whitney- U- test and the Kruskal-Wallis test. The Mann Whitney-test is used for comparing two independent data groups and the Kruskal-Wallis test is used for the comparison of more than two independent data groups. The non parametric tests equivalent to their parametric counterparts are the t-test (for two independent data groups) and the One-Way ANOVA (for more than two independent data groups) respectively.\textsuperscript{281}

### 6.1.1 The Kruskal-Wallis Test

The Kruskal-Wallis test is used for investigating the differences among the three data groups (GA: \textit{direct treatment group}. GB; \textit{indirect treatment group} and GC; \textit{control group}) in relation to certain socio-economic variables.

If \( p < 0.05 \) \hspace{1cm} Reject the null hypothesis (Groups are homogeneous)

If \( p > 0.05 \) \hspace{1cm} Accept the null hypothesis (Groups are homogeneous)

If the p value is smaller then the null hypothesis and the idea that `the differences are all a coincidence` will be rejected and it can be concluded that the groups are not homogeneous. If the null hypothesis is rejected in the Kruskal-Wallis test,\textsuperscript{282} which compares several groups, it indicates the presence of mean differences among the groups. However, this difference doesn't mean that every group differs from every other group, only that at least one group differs from one of the other groups.\textsuperscript{283}

\textsuperscript{280} The data has been checked for normality, and the results reflect a non-normal distribution of data.

\textsuperscript{281} Field (2009).

\textsuperscript{282} Kruskal-Walis test is reported as (H), the SPSS labels it as Chi square, because of its distribution, rather than (H).

\textsuperscript{283} Field (2009).
Another recognized way for comparing the mean differences between the two groups is the Mann-Whitney test\textsuperscript{284} which can be followed by the Kruskal-Wallis test but with a smaller and more restrictive critical value. As a first step the Kruskal-Wallis test is conducted for various factors such as the household size (HHS), average age (HHAA), average education (HHAE), dependency ratio (DR), per capita income (PCI), proportion of income earned from unskilled employment (UNSEI) and female proportion in the labour force (PRWF).

The results stated in Table 6.1 report no differences in some of the demographic variables among groups. For instance, the family size (H=.303, p> 0.05) and the average level of education attained by the household members (H=4.468, p> 0.05) are similar across different data groups in the current analysis. This similar level of education illustrates that all three data groups exhibit similar human capital properties and thus are most likely belonging to the same socio-economic group.\textsuperscript{285}

However, some of the factors studied ended up different in different data groups. For example the family average age (H=15.00, p< 0.001) and the dependency ratio (H=27.02, p> 0.000) are different across the groups. As stated above, the family size across the groups is similar, thus the differences in dependency ratio emerge due to differences in economically active family members.\textsuperscript{286} These findings suggest discrepancies in economic activities among the groups, which might be attributable to the presence of higher working opportunities offered by the working units.

\textsuperscript{284} Refer to 6.1.3 Mann-Whitney Test.

\textsuperscript{285} Human Capital is one of the very important determinants of income as well as it holds a casual relationship with income. The households with higher levels of average education have relatively better prospects to hunt better and well paid employment opportunities. However, the households with higher income can afford better education facilities and thus can accumulate human capital to earn better income.

\textsuperscript{286} According to the definition of the dependency ratio (see also Appendix I) the dependency ratio can be lower either due to smaller family size or due to higher economic activity in the family. Since family size is similar in all the three data groups, thus differences in the dependency ratio emerge due to higher economic activity in the family. For further details refer to section 5.3.2.4; Dependency Ratio of Low-Income Rural Households.
Chapter 6

Empirical Tests and Results

Table 6.1: Group Mean Differences of Three Data Groups (Kruskal-Wallis test (H))

(H) = Kruskal - Wallis test

<table>
<thead>
<tr>
<th>Variables</th>
<th>Chi-Sq. (H)</th>
<th>Sig.</th>
<th>95% CI L/bound</th>
<th>U/bound</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>HHS</td>
<td>.303</td>
<td>.860</td>
<td>.851</td>
<td>.869</td>
<td>Similar</td>
</tr>
<tr>
<td>HHAA</td>
<td>15.00</td>
<td>.001</td>
<td>.000</td>
<td>.001</td>
<td>Different</td>
</tr>
<tr>
<td>DR</td>
<td>27.020</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>Different</td>
</tr>
<tr>
<td>HHAEE</td>
<td>4.468</td>
<td>.107</td>
<td>.102</td>
<td>.118</td>
<td>Similar</td>
</tr>
<tr>
<td>PCI</td>
<td>22.69</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>Different</td>
</tr>
<tr>
<td>UNSEI</td>
<td>40.149</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>Different</td>
</tr>
<tr>
<td>PRWF</td>
<td>47.059</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>Different</td>
</tr>
</tbody>
</table>

(Source: own data compilation)

For this study, the association between the average level of household education and average income is smaller but still remains positive (r=0.160. p=.002). This indicates that the population in the sample is not fairly equipped with education and skills that could be a prerequisite for well paid employment. Rather, they are less educated and involved mainly in semi skilled and unskilled employment, as their acquired level of education does not pay them back.

---

287 The average education in the aggregate data sample is even less than primary representing an average of 4.24 years of schooling. See also section 5.3.4.2; Human Capital.
The economic factors like per capita income ($H= 22.69, p=0.000$) and female work participation in the labour force ($H= 47.059, p=0.000$) are significantly different for different data groups. Higher economic activity or higher participation of family members in the labour force both accelerate per capita income. Working units, through offering employment opportunities to males as well as females, strengthen the income level of the family.

Within the data sample PCI and working female strength in the family correlate positively and significantly ($r= 0.380, p=0.000$), indicating that females contribute significantly in economic activity which determines the family income, as the higher the participation of working females in the labour force of the household, the higher the income.

### 6.1.2 Graphical Representation of Three Data Groups; Box Plots

The data of three different groups has been presented through box plot or box–whisker diagrams, which are also considered as one of the options to graphically analyze the differences between groups. The whiskers present the most and upper and lower quartile of scores. If the length of the top and bottom whiskers is the same, it means that the distribution is symmetric. The distance between the lowest horizontal line and the lowest edge of tinted box is the upper quartile range, and similarly the distance between the highest horizontal line and the highest edge of the tinted box represents the upper quartile range. The center of the plot displays the values of the middle 50% of observations (inter-quartile range) and a thicker line in the middle of the tinted box represents the value of the median. The outliers in the data are represented through the points on the graph.\(^{288}\)

The average level of family education is represented by the box plot in Figure 6.1 showing that the average education level of all three groups is less than primary.\(^{289}\) These results support the fact that there are similar socio-economic characteristics in all three data groups. However, comparing the difference between the lowest and highest levels of education for all three groups, the dispersion from the average education level is highest for

---

\(^{288}\) Field (2009).

\(^{289}\) Average years of schooling is 4.24.
Group B as the distance between the lowest horizontal line and the highest horizontal line is higher for this group as compared to other groups. Moreover, the boxes of the direct treatment group and indirect treatment group are similar showing no big difference between the inter-quartile ranges (middle 50% of scores) of the groups. However, the range of the control group differs from the direct treatment group and indirect treatment group.

Figure 6.1: Comparison of Average Education of Households of Three Data Groups

Comparison of the PCI of the three data groups is presented in Figure 6.2. The minimum threshold level of PCI for the direct treatment group is higher than the minimum level of PCI for the indirect treatment group and control group (i.e. in the direct treatment group, the average severity of poverty is lower than the other two groups). However, the dispersion range between the minimum and maximum from the average PCI level is highest for the direct treatment group, as the distance between the lowest horizontal line and the highest horizontal line is higher for this group as compared to other groups. In addition the boxes of indirect treatment group and control group are similar reflecting no
big differences between the inter-quartile ranges (middle 50% of scores) of the groups. However, the range of *direct treatment group* differs from *indirect treatment group* and *control group*.

Three group comparison of per capita income (PCI)

Figure 6.2: Comparison of Per Capita Income of Three Data Groups

Figure 6.3 exhibits the lower dependency ratio of the *direct treatment group* in relation to the other two groups.

The lower dependency ratio is indicative of higher level of economic activity in the *direct treatment group* rather than the other two auxiliary groups. This higher level of economic activity might be attributable to the higher number of working opportunities available within the *working unit* in the community, particularly exclusively for the women. Among the groups the dispersion from the average level of the dependency ratio in the *control group* is highest, since the distance between the lower horizontal line and the highest horizontal line is the highest one in this group.
6.1.3 Mann-Whitney Test

To test the differences between the two independent groups (two conditions) and different participants Mann-Whitney test\textsuperscript{290} are appropriate.\textsuperscript{291} The key result is a p value that answers this question of statistically significant differences. The study applies a common standard of a 5\% (p=0.05) level of significance.\textsuperscript{292}

If \( p < 0.05 \)  Reject the null hypothesis (Groups are homogeneous)

If \( p > 0.05 \)  Accept the null hypothesis (Groups are homogeneous)

\textsuperscript{290} Mann-Whitney test is reported as test statistics (U).
\textsuperscript{291} Agresti and Finlay (2009) and Field (2009).
\textsuperscript{292} Cohens \textit{et al.} (2003) and Field (2009).
If the p value is smaller, then the null hypothesis and the idea that the differences are all a coincidence will be rejected and it will be concluded that the groups are not homogeneous. The Mann-Whitney test serves another very important purpose, when it is used as a follow up of the Kruskal–Wallis test. Since the Kruskal–Wallis test compares several conditions, and provides the information about the existence of the differences; it does not explain where exactly the differences lie i.e. which two groups differ from each other as is the case in this study.

For comparing between the pair of groups, the Mann-Whitney test can be followed with the Bonferroni correction applied. Since using lots of the Mann-Whitney test, as a follow up of the Kruskal-Wallis test might inflate the Type I error rate, this procedure needs some kind of adjustments in order to ensure the occurrence of a Type I error is up to 0.05% only. Therefore, if a lot of the Mann-Whitney tests are conducted then the differences among groups are considered as significant only if they are significant - below .05 / number of tests. For this study, as a follow up of the Kruskal–Wallis test, in order to examine the difference between each two data sub groups, three Mann-Whitney tests are conducted. Hence the results are analyzed on the basis of a relatively restrictive critical value that is 0.0167 (0.05/3).

If p < 0.0167  Reject the null hypothesis (Groups are homogeneous)
If p > 0.0167  Accept the null hypothesis (Groups are homogeneous)

Field (2009).
Agresti and Finlay (2009) state that for analyzing the differences between three data groups, three Mann-Whitney tests should be carried out on every pair of groups: GA & GB, GA & GC and GB and GC. Using a 0.05 level of significance for each test, the probability of committing the Type I error is 0.5% and not committing Type I error is 0.95%. Assuming all three tests as independent (the probabilities of all three can be multiplied) and the overall probability of no Type I error is (0.95)^3 = 0.857. Given the probability of a no Type I error (0.857), the probability of committing at least one Type I error is 14.3% (1-0.857=0.143). Hence, across this specific group, the probability of committing a Type I error increases from 5% to 14.3%. This value (14.3%) is greater than the criteria (0.5%) accepted by the social scientists.

Direct treatment group (GA) -to- Indirect treatment group (GB).
Direct treatment group (GA) -to- Control group (GC).
Indirect treatment group (GB) -to- Control group C (GC).

For the present study p value is 0.0167. Probability of no Type I error is 0.9833(1-0.0167). The overall probability for all three tests of committing no Type I error is (0.9833)^3 = 0.95 and the probability of committing at least one Type I error is (1-0.95)= 0.05.
Table 6.2 provides the actual test statistics (U) for the Mann-Whitney test, its significance and corresponding Z scores\(^{297}\) to present the mean differences between each of the two groups are examined for the above mentioned socio economic variables. Amongst the demographic variables the results of mean differences of family size do not demonstrate the difference between any two data groups, which confirms the previous results of the Kruskal Walis test. However, the mean differences for the average family age exist only between the treatment group and the control group (U= 5044. p=0.000) and the indirect treatment group and the control group (U= 6034. p =0.03). This difference does not exist within the treatment sub groups (GA and GB). The differences in the dependency ratios between the groups justify the previous results.

Table 6.2: Group Mean Differences of Each Two Data Groups (Mann-Whitney test)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Direct Treatment Group Vs Indirect Treatment Group</th>
<th>Direct Treatment Group Vs Control Group</th>
<th>Indirect Treatment Group Vs Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(U)</td>
<td>z</td>
<td>Sig.</td>
</tr>
<tr>
<td>HHS</td>
<td>6963</td>
<td>-.446</td>
<td>.656</td>
</tr>
<tr>
<td>HHAA</td>
<td>6478</td>
<td>-1.343</td>
<td>.179</td>
</tr>
<tr>
<td>DR</td>
<td>5334</td>
<td>-3.483</td>
<td>.000</td>
</tr>
<tr>
<td>HHAE</td>
<td>7144</td>
<td>-.103</td>
<td>.918</td>
</tr>
<tr>
<td>PCI</td>
<td>5211</td>
<td>-3.700</td>
<td>.000</td>
</tr>
<tr>
<td>UNSEI</td>
<td>4503</td>
<td>-5.465</td>
<td>.000</td>
</tr>
<tr>
<td>PRWF</td>
<td>4941</td>
<td>-4.541</td>
<td>.000</td>
</tr>
</tbody>
</table>

(U) =Mann-Whitney test  
(Source: own data compilation)

\(^{297}\) Z- score is the value of an observation expressed in standard deviation units. It is calculated by taking the observation, subtracting from it the mean of all observations, and dividing the result by the standard deviation of all observations. By converting distribution observations into z scores a new distribution is created that has a mean of zero and standard deviation of 1. See also Agresti and Finlay (2009).
The dependency ratio of the *treatment group* is significantly different from the indirect *treatment* and *control group*. Since the family sizes of all three groups is the same, the differences in dependency ratio of the *direct treatment group* from other two groups, point towards the existence of a higher magnitude of economic activity in this group that is directly affected by the *treatment*. The results of the average family education for each two groups confirm no difference between the average education levels of the groups. This similarity justifies the fact that all three data groups have similar levels of human capital that could be further utilized to take advantage of employment opportunities.

The per capita income of the *direct treatment group* (Average income = 1,381 PKR) is different from both the *indirect treatment group* (Average income = 1,131 PKR) and the *control group* (Average income = 1,034 PKR). However, between the *indirect treatment group* and the *control group*, there did not appear to be any group mean differences. This fact is indicative of the higher per capita income in the *direct treatment group* from the rest of the two groups.

The working female proportion in the *direct treatment group* is different from the *indirect treatment group* and *control group*, which, signifies the role of *working units* that offer working opportunities exclusively to females. In such a rural setting the contribution of females in the labour market at the macro level and in household income at the micro level is low due to some religious, cultural and social issues. The availability of a working place exclusively designed for females, where they have to stay inside the boundaries and not be exposed to men, may accomplish a higher contribution from females to the economic activity of the household. This higher economically active contribution of females subsequently increases the family income and improves the living conditions of the households.

For quantifying the differences (if any) between each two groups, the analysis is conducted for the *treatment group* and *control group*. Another analysis is exercised in a different

---

298 Refer to section 4.2.2; Gender.
group setting - the *direct treatment group* is analyzed against a group consisting of the *indirect treatment* and *control groups*.

Table 6.3 illustrates the results of the Mann-Whitney test, which calculates the differences (if any) between each of two groups formulated in a different sub setting.\(^{299}\) The results, of group mean differences, of both of the analysis reflect the same conclusion. The results indicate no difference in the groups relating to family size and average family education. The similar average family size reflects no differences in any one of the important demographic variable in both of the analyses. Hence, considering education as a prerequisite for determining the socio-economic status of the family, the similar average family average education highlights the similar socio economic background of the sample households in all the data groups.

**Table 6.3: Group Mean Differences of Each Two Data Groups (Mann-Whitney test)**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Treatment group Vs Control group</th>
<th>Direct treatment group Vs Indirect treatment group + control group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(U) z Sig.</td>
<td>(U) z Sig.</td>
</tr>
<tr>
<td>HHS</td>
<td>14052 -.378 .705</td>
<td>13908 -.535 .593</td>
</tr>
<tr>
<td>HHAA</td>
<td>11079 -3.57 .000</td>
<td>11522 -3.091 .002</td>
</tr>
<tr>
<td>DR</td>
<td>10695 -3.99 .000</td>
<td>9875 -4.878 .000</td>
</tr>
<tr>
<td>HHAE</td>
<td>12435 -2.11 0.35</td>
<td>13331 -1.148 .251</td>
</tr>
<tr>
<td>PCI</td>
<td>11490 -3.128 .002</td>
<td>10049 -4.676 .000</td>
</tr>
<tr>
<td>UNSEI</td>
<td>11467 -3.401 .001</td>
<td>8941 -6.330 .000</td>
</tr>
<tr>
<td>PRWF</td>
<td>10239 -5.058 .000</td>
<td>9018 -6.542 .000</td>
</tr>
</tbody>
</table>

\(U=\) Mann-Whitney test \hspace{1cm} *(Source: Own data compilation)*

\(^{299}\) Two sub settings has been formulated as; firstly: *Treatment group* (*Direct treatment group* and *indirect treatment group*) is analyzed against *Control group*. Secondly: *Direct treatment group* is analyzed against *Indirect treatment group + control group*
However, there are significant differences of the treatment group from the control group and then the direct treatment group from the other two sub groups in variables such as average family age, dependency ratio, working female proportion and percentage age of income from unskilled employment appear. The differences in dependency ratio and proportion of working female justifies the existence of working units in the treatment area as it provides more employment opportunities particularly for females.

### 6.2 Empirical Analysis: Ordinary Least Square Regression

To quantify the impact of the treatment, applied in terms of foreign affiliation, on the livelihood of low-income rural households, the Ordinary Least Square (OLS) Regression method is employed as a first step of empirical analysis.\(^{300}\)

The standard format of a Linear Regression function is as follows:

\[
Y = \beta_0 + \beta_1 x_i + u_i
\]

This equation estimates the assumed impact of different independent variables \((x_i)\) on a dependent variable \((Y)\). The coefficients \((\beta)’s\) measure the perceived strength and association between the dependent variable and different independent variables. Amongst the coefficients \((\beta)’s\), the \(\beta_0\) is the intercept of the regression line, which ascertains the value of \(Y\) when all the \(x\)- values are zero. The \(\beta_i’\)s are the regression coefficients of different independent variables and determine the gradients of the regression line (i.e. the \(Y\) will change by \(\beta_1\) if \(x_1\) increases by one unit. The error term \(u_i\)\(^{301}\) denotes the residuals as well as the influence of other independent variables on \(Y\) that are not explained by the model.\(^{302}\)

---

300 This empirical technique is used in the literature for poverty analysis. For instance, Vu and Baulch (2011) consider it appropriate to identify poverty by taking PCI as a dependent variable for rural Vietnam.

301 In practice, the independent variables never explain the dependent variables exactly. This is why equation includes a random error, which picks up measurement error as well as the effects of unobservable (and unobserved) influences.

302 See also Cohens et al. (2003).
6.2.1 The Econometric Model

The model in the present study exhibits a family income function built on the theoretical basis documented in the previous chapters. The study explains the level of average PCI – the dependent variable – as a function of numerous independent socio-economic variables including certain demographic, economic and human capital related variables.

Regression analysis is undertaken to quantify the effect of each of these independent variables on the dependent variable. These variables are presented in Table 6.4.

The regression equation takes the following form:

\[ Y_i = \beta_0 + \beta_1 HHS_i + \beta_2 FPR_i + \beta_3 HHAA_i + \beta_4 DR_i + \beta_5 HHAE_i + \beta_6 UNSEI_i + u_i \]

**Table 6.4: Description of the Variables**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent variable:</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Per Capita Income (PCI) of the household</td>
</tr>
<tr>
<td>Independent variables:</td>
<td></td>
</tr>
<tr>
<td>( \beta_0 )</td>
<td>Constant</td>
</tr>
<tr>
<td>( \beta_i )</td>
<td>Regression Coefficients</td>
</tr>
<tr>
<td>HHS</td>
<td>Size of the household</td>
</tr>
<tr>
<td>HHAA</td>
<td>Average age of the household</td>
</tr>
<tr>
<td>DR</td>
<td>Dependency ratio of the household</td>
</tr>
<tr>
<td>HHAE</td>
<td>Average education of the household</td>
</tr>
<tr>
<td>UNSEI</td>
<td>Percentage of income of the household earned from unskilled employment</td>
</tr>
<tr>
<td>FPR</td>
<td>Females Proportion in the household</td>
</tr>
</tbody>
</table>

(Source: Own data compilation)
### 6.2.2 Practical Issues in Regression Analysis:

Several practical issues are very crucial to be considered before conducting regression analysis. These issues are helpful to screen the data for the assumptions of OLS regression.

**The Sample Size**

Regarding the sample size, it is acknowledged by all researchers that `larger is better`, but researchers need some concrete guideline to decide on the adequacy of the sample size. Field (2009) mentions that Green follows the following two rules of thumb: Firstly, to test the overall fit of the regression model ($R^2$) is $50+8k$, where $k$ is the number of explanatory variables. Secondly, to test the individual predictor within the model (the $b$ value of the model) is $104+k$, where $k$ is the number of explanatory variables. The adequacy of the sample size for regression is checked by the case-to-independent variable. According to these statistics, the data sample in the present study is adequate for the analysis.

**OLS Assumptions**

The model was checked for the following OLS assumptions:

**Functional Form of the Model**

The linear regression model uses a straight line to describe the relationship as it assumes a linear relationship between the independent variable and dependent variables. Within the analysis, all independent variables and the dependent variable are continuous ones.

**Multi-Collinearity**

Assessing the individual importance of an independent variable is only authentic after checking for the traces of multicollinearity. The data has been screened out against alarming elements of multicollinearity. Among the group of variables, highly a correlating variable is chosen as a representative for other variables. In addition, the collinearity diagnostic was performed, which further confirms the absence of distressing multicollinearity traces in the regression.
For multicollinearity analysis, the tolerance values, which are the measure of correlation between the explanatory variables and the variance inflation factor (VIF) are presented below in Table 6.5. The results presented below are not asserting the existence of collinearity among the independent variables.

Table 6.5: Collinearity Diagnostic for OLS Regression

<table>
<thead>
<tr>
<th>Variables</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All Three groups</td>
</tr>
<tr>
<td></td>
<td>Tolerance</td>
</tr>
<tr>
<td>HHS</td>
<td>.891</td>
</tr>
<tr>
<td>FPR</td>
<td>.885</td>
</tr>
<tr>
<td>HHAA</td>
<td>.749</td>
</tr>
<tr>
<td>DR</td>
<td>.800</td>
</tr>
<tr>
<td>HHAE</td>
<td>.916</td>
</tr>
<tr>
<td>UNSEI</td>
<td>.960</td>
</tr>
</tbody>
</table>

(Source: Own data compilation)

6.2.3 Discussion on OLS Regression:

In the linear regression, the fit of the regression model can be evaluated by looking at the coefficient of determination i.e. R-square. In order to divert from the objectionable feature of the R-square which reflects the fact of biased results both for small samples and a large number of explanatory variables, the adjusted R-square is used. The explanation of adjusted R-square is almost the same as the R-square but since, adjusted R-square penalizes

---

306 Field (2009) explains that one way of identifying multicollinearity is to scan a correlation matrix of all of the predictor variables and see if any correlate very highly (by very high I mean correlations of above .80 or .90). SPSS produces various collinearity diagnostics, one of which is the variance inflation factor (VIF). The VIF indicates whether a predictor has strong linear relationship with the other predictor. Although there are no hard and fast rules about what value of VIF should cause concern Myers (1990) suggests that if the value is 10, then should be worry. What’s more, if the average VIF is greater than 1, then multicollinearity may be biasing the regression model (Bowermann & O’Connell, 1990). Related to VIF is the tolerance statistics which is its reciprocal (1/VIF). As such, values below 0.1 indicate serious problems although Menrad (1995) suggest that values below 0.2 are worthy of concern.

307 Agresti and Finlay (2009).
the statistic for its deficiencies, and thus is considered a more accurate reflection of fit. Based on the statistics of adjusted R-square, the model can be generalized for real world data. Moreover, an adjusted coefficient of determination (adjusted R-square) should be consistent with the classical coefficient of determination for the approximation of real world data. The lower the difference between the R-square and the adjusted R-square, the higher the cross validity of the model. The F-statistics assesses the overall significance of the model. The direction and extent of the influence of the independent variable on the dependent variable is estimated through the beta values. Each beta value has an associated standard error, which indicates the extent to which these values would vary across different samples. A large beta value indicates that a unit change in this particular predictor variable has a larger effect on the dependent variable. The t-test analyzes the contribution of each independent variable in determining per capita income. A larger absolute t-value, associated with a smaller significance value implies that the predictor contributes significantly in the model. The standardized beta values are better for comparison of predictors as they are measured in standard deviation units and not dependent upon the measurement units.

### 6.3 Ordinary Least Square (OLS) Regression: Four Models

To evaluate the impact of foreign affiliation on the wellbeing of low-income rural households, OLS regression was run. In order to compare the differences of the impact, if any, imposed by the foreign affiliation, separate OLS regressions are run for different data groups.

---

308 Field (2009).
309 Beta values vary from 0-1 (0 indicating no influence and 1 otherwise). The signs of beta demonstrate the type of association (Positive beta suggest a positive and negative beta a negative relationship between the variables).
310 Field (2009).
311 Regression 1: Complete data set: 360 observations; Regression 2: Direct treatment group (GA): 120 observations; Regression 3: Indirect treatment group (GB): 120 observations; Regression 4: Control group (GC): 120 observations.
6.3.1 Regression 1: Aggregate Data Set

The results of regression 1, which compromises the complete data set, are presented in Table 6.6. In this regression, the value of adjusted R square is 0.439 illustrating that the model accounts for 43.9% of variations in per capita income. The F-statistic is also significant exhibiting a value of 47.809 (p=.000), which indicates that the variables as a whole are statistically significant in explaining the relationship between per capita income and the explanatory variables.

In this model, consisting of an aggregate data set, among the demographic variables, the coefficient of the `size of the household` is negatively related to the PCI signifying that PCI is most likely to be lower in large families, where the resources are thinly stretched over the family members. In particular, the β-values state that the addition of one extra member in the family will result in a decrease in the per capita income by 56.61 PKR. Large families, therefore, have a higher probability of being thrown into the poverty trap, particularly when a large proportion of family members are economically inactive like females, children and old aged members. This result is consistent with other studies which state a direct relationship between household size with poverty incidence.  

---

312 Refer to section 5.3.2.1Household Size of Low-Income Rural Households.
The negative relationship between `female proportion in the family` with per capita income draws our attention to the fact that higher the number of females in the family, the lower the per capita income and the higher the poverty. It is of substantial importance that this negative relationship between per capita income and female proportion in the family mainly exists due to two reasons; firstly, the higher female proportion is associated (r=.113, p=.016) with large family size and secondly, in such a rural settings, males are considered as the breadwinners. It is not very customary for females to be in gainfully employed activities.

\[\text{Table 6.6: Regression 1: Aggregate Data Set; OLS Regression Results}\]

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficients</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t-statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>2182.7</td>
<td>147.46</td>
<td></td>
<td>14.79*</td>
</tr>
<tr>
<td>HHS</td>
<td>-56.613</td>
<td>12.12</td>
<td>-.196</td>
<td>-4.66*</td>
</tr>
<tr>
<td>FPR</td>
<td>-3.855</td>
<td>1.69</td>
<td>-.095</td>
<td>-2.26*</td>
</tr>
<tr>
<td>HHAA</td>
<td>9.721</td>
<td>4.44</td>
<td>.100</td>
<td>2.187*</td>
</tr>
<tr>
<td>DR</td>
<td>-147.61</td>
<td>13.40</td>
<td>-.487</td>
<td>-11.0*</td>
</tr>
<tr>
<td>HHAE</td>
<td>38.166</td>
<td>12.00</td>
<td>.131</td>
<td>3.178*</td>
</tr>
<tr>
<td>UNSEI</td>
<td>-2.599</td>
<td>.60</td>
<td>-.174</td>
<td>-4.32*</td>
</tr>
</tbody>
</table>

Adjusted R-Square 0.439  
F-statistics 47.809*

Note: * Stands for 5% level of significance

(Source: Own data compilation)

\[313\text{In the rural culture, the parents strongly demand for having higher number of boys in the family. Therefore, if females are borne to the family, the parents keep on increasing their family size having a wish of being blessed with a baby boy next time.}\]
The `average age of the household`, even with significant statistics, does not show any worthy contribution ($t=2.187^*$) in determining the per capita income. However, this association between household average age and per capita income is positive ($r= 0.311$, $p= .000$) and a one year increase in the average age of the household causes an increment in the per capita income by 9.72 PKR. Since, the average age of the household in the sample is 21 years, reflecting firstly, a higher number of young adults in the family and secondly, employees not being complemented by the idea that age accumulates the experience and skills that increases the probability of earning higher income. Both of the above predictors complement each other in explaining the poor status of the households in the sample.\textsuperscript{314}

The `dependency ratio` depicts that the larger the number of less active family members, for instance, old, females, unemployed and children,\textsuperscript{315} the higher the burden on employed members in coping with the economic needs of the family. In our model, the dependency ratio is playing a significant role ($t= 11.003$, $p=.000$) in determining the family income, (i.e. the higher the number of economically employed members in the family, the lower would the dependency ratio and thus the lower the level of poverty). An increment in the dependency ratio by one unit may cause a reduction in per capita income of 147.61 PKR.

The `Average Level of Household education` in the model has a significant effect in determining PCI. A one year increase in the level of education by one year can bring an increase in per capita income by 38.16 PKR. Although the contribution of educational attainment in per capita income decisions is positive, it is not a very dominant one ($t= 3.178$, $p= .002$). This result indicates the reality that the household members in the sample are not benefiting too much from their education and that their education is not sufficient enough to get access to better employment opportunities.

\textsuperscript{314} With large number of young adults in the family, the dependency ratio increases which escalate poverty, and young aged or middle aged employees are not very experienced and skilled, and thus are involved in unskilled or semi skilled jobs, which are low paid.

\textsuperscript{315} 42.78\% of the household size is comprised of children (below 14 years) in the data. Refer to section 5.3.2.4 Dependency Ratio of Low-Income Rural Households Demographic Characteristics of Low-income Rural Household.
Data on the `percentage of income from unskilled employment` confirms the lower level of human capital within the sample. It is most likely that less educated members of the family will be engaged in less skilled jobs. Within the whole sample, 64% employees of the households are engaged in unskilled employment sources, although the contribution of percentage of income earned from unskilled employment is deficient, nevertheless significant (t=-4.32, p=0.000) in determining PCI.

Both of the predictors, lower education level\textsuperscript{316} of the household and the higher percentage of income earned from unskilled employment, confirm the relatively poor status of the households in the complete data set.

6.3.2 Regression 2: Direct Treatment Group

The results of regression 2, which includes the data of the \textit{direct treatment group}, are illustrated in Table 6.7.

These results depict that at a 5\% level of significance, 44.8\% of the variations in the per capita income are attributed to the explanatory variables included in the model. The overall fit of the model is revealed by the significant value of the F-statistics (F= 17.119, p=.000).

Although the `Household size` depicts the same behavior as in Regression 1, the magnitude of its contribution in determining per capita income is smaller (t=-2.25, p=.026) than regression 1. The negative sign indicates that the larger size of the household is associated with a lower level of per capita income. In the \textit{direct treatment group}, the addition of one member to the family will reduce the family per capita income by one 50.58 PKR because the average household size is larger in the \textit{direct treatment group} (7.18) as compared to its counterparts.

The `female proportion in the household` is higher for this group\textsuperscript{317}, the positive and significant correlation (r= .203. p=.013) of family size and female proportion in the family

\textsuperscript{316} Average education level of the households is 4.24 years of schooling which is less than primary.
reveals that the higher the female proportion in the family, the higher the family size. The households with a larger proportion of females keep on extending their family in a desire to get males. Moreover, for this particular group, the proportion of females in the family is no significantly but positively related (r = .066, p = .237) to the per capita income.

The contribution (t = -.014, p = .989) of the female proportion of the household in determining the per capita income of the household is insignificant and negligible. The increase in family size by one female member will cause a reduction in the per capita income by 5%.

The `average age of the household` bears a significantly positive association (r = 0.252, p = .003) with per capita income. However, its contribution in determining per capita income is insignificantly minute (t = .476, p = .635). On average a one year increase in average family age may add 4.5 PKR to the average PCI of the household. The average age of the direct treatment group is 22 years representing a higher proportion of children in the family.\(^{318}\) In line with the analysis of Regression 1, the `dependency ratio` emerges as a contributory variable (t = -7.97, p = .000) in predicting the average per capita income of the household. One unit increment in the dependency ratio results in a reduction in per capita income of 230 PKR. Lower economic dependency or higher economic activity would subsequently enhance the average income of low-income rural households. These findings confirm the results of some of the previous studies.\(^ {319}\)

This trend of existing higher economic activity in the direct treatment group is attributable to the female’s contribution in earning the basic sustenance, which is advocating the presence of working units in the area.

---

\(^{317}\) The Proportion of females within the direct treatment group is 12.4% higher than indirect treatment group and 6.1% higher than control group. Refer to section 5.3.2.3; Proportion of females in the low-income Rural houses.

\(^{318}\) In direct treatment group, 38.99% of members are below 14 years old.

\(^{319}\) Refer to section 5.3.2.4; Dependency Ratio of Low-Income Rural Households; Demographic Characteristics of Low-income Rural Household.
Table 6.7: Regression 2: Direct Treatment Group; OLS Regression Results

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficients</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t-statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>2488.1</td>
<td>298.42</td>
<td>8.338</td>
<td>8.338</td>
</tr>
<tr>
<td>HHS</td>
<td>-50.589</td>
<td>22.45</td>
<td>-.167</td>
<td>-2.25*</td>
</tr>
<tr>
<td>FPR</td>
<td>-.051</td>
<td>3.79</td>
<td>-.001</td>
<td>-.014</td>
</tr>
<tr>
<td>HHAA</td>
<td>4.559</td>
<td>9.57</td>
<td>.037</td>
<td>.476</td>
</tr>
<tr>
<td>DR</td>
<td>-230.97</td>
<td>28.96</td>
<td>-.598</td>
<td>-7.97*</td>
</tr>
<tr>
<td>HHAE</td>
<td>49.062</td>
<td>24.78</td>
<td>.142</td>
<td>1.980*</td>
</tr>
<tr>
<td>UNSEI</td>
<td>-6.356</td>
<td>2.35</td>
<td>-.191</td>
<td>-2.69*</td>
</tr>
</tbody>
</table>

Adjusted R-Square 0.448

F-statistics 17.119*

Note: * Stands for 5% level of significance

(Source: Own data compilation)

The ‘household average education’ also exercises some positive (r=.200, p=.014) influence on income generating capacity of the household. An improvement in the family average education by one year can augment the per capita income of the family by 49 PKR. Its contribution (t=1.980, p=.05) in the model along with other variables in determining income is significant but not considerable. It is indicative of the fact, that the average education is less than primary, which does not serve the prerequisite of being involved in skilled jobs. Lower levels of education in the family also confirm the fact that due to being less educated, most of the family income is earned from unskilled employment sources.

It is conceivable that skilled jobs are better paid than unskilled jobs. However, the probability of being employed in skilled jobs is associated with education and skills. The
lower the level of education and skills the lower the likely hood of being employed in well paid jobs. Thus the `percentage of income earned from un-skilled employment` is indirectly related to the per capita income. A higher probability of income generated from unskilled employment leads to a lower level of income (r = -.114, p = .108). On average, an increase of one percent in the probability that the income is earned from unskilled employment sources will reduce the per capita income of the family by 6.35 PKR. In this model all of the studied employees are semi-skilled or low skilled as they are working in the working units, where no sophisticated skilled are required.320

6.3.3 Regression 3: Indirect Treatment Group

Regression 3 represents the data from the indirect treatment group. The results of this regression are given in Table 6.8. It shows that 52.1% of the variations in the average per capita income of the households are predicted by the explanatory variable in the model at a 5% level of significance.

The `household size` is indirectly and significantly (r = -0.367, p = 0.000) related to per capita income, as a larger household is more prone to poverty, since in this case the resources of the family are curtailed due to being stretched across larger families. According to the statistics, a one member increase in the household size will bring a contraction in per capita income of 104.89 PKR. For this particular group, it is the household size which plays a dominant role (t = -5.64, p = .000) in determining the average per capita income of the households.

The `female proportion in the household`, has a significantly negative relationship (r = - .171, p = .031) with the per capita income, which advocates that the presence of females in the family causes a reduction in the income levels of the family. This reduction in PCI is firstly due to the fact that females are not expected to be economically active in the household. In this particular group, the proportion of working females in the total working population is 5.84% and the presence of female members in the family will contribute (t = -

320 Refer to section 5.3.3.2 Employment Status of Low-Income Rural Households.
3.66, p=.000) significantly in lowering the PCI of the household. An addition of one female member in the family will reduce the PCI by 8.34 PKR.

**Table 6.8: Regression 3: Indirect Treatment Group; OLS Regression Results**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficients</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t-statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>2291.4</td>
<td>200.91</td>
<td>11.40*</td>
<td></td>
</tr>
<tr>
<td>HHS</td>
<td>-104.89</td>
<td>18.53</td>
<td>-.394</td>
<td>-5.64*</td>
</tr>
<tr>
<td>FPR</td>
<td>-8.345</td>
<td>46419</td>
<td>-.250</td>
<td>-3.66*</td>
</tr>
<tr>
<td>HHAA</td>
<td>11.431</td>
<td>5.64</td>
<td>.153</td>
<td>2.025*</td>
</tr>
<tr>
<td>DR</td>
<td>-96.796</td>
<td>20.91</td>
<td>-.343</td>
<td>-4.62*</td>
</tr>
<tr>
<td>HHAE</td>
<td>53.329</td>
<td>14.85</td>
<td>.248</td>
<td>3.590*</td>
</tr>
<tr>
<td>UNSEI</td>
<td>-2.627</td>
<td>.82</td>
<td>-.222</td>
<td>-3.18*</td>
</tr>
</tbody>
</table>

Adjust R-Square 0.521
F-statistics 22.554*
Note: * Stands for 5% level of significance

(Source: Own data compilation)

The `average age of the household` has a positive relationship (r=0.293, p=.001) with the per capita income of the household. For this particular data group, the average age of the household contributes significantly (t= 2.025, p=.045) in explaining the variations in income. A one year increment in the average age of the household can increase the per capita income by 11.43 PKR. The average age for this particular group is 21 years.

Contrary to other models, the `dependency ratio` did not show as a strong predictor in determining per capita income. Nevertheless, it contributes significantly in the model.
(t=4.62, p=.000). A reduction in the dependency ratio by one unit may increase per capita income by 96.79 Pak Rupees. Lower levels of dependency ratio reflect lower levels of poverty.

The `household`s average level of education` has a positive relationship with income (r=0.269, p=.000), contributes significantly (t=3.59, p=.001) in determining per capita income. Improvement in the household`s average level of education by one unit may bring an increase in per capita income of 53.33 PKR. Thus, the more educated the household is, the higher the income.

The `percentage of income from un-skilled employment` is negatively related (r=-0.171, p=.031) to the household`s per capita income. The higher the involvement in relatively more skilled employment opportunities, the higher the income. For this data group, 45% of the income is being generated by unskilled resources. These statistics justify the differences in this data group versus the direct treatment group, in which all the interviewed employees are working in the working center and thus are semi-skilled workers.

### 6.3.4 Regression 4: Control Group

The results of regression 3 are presented in Table 6.9. It shows that all the explanatory variables, included in the regression representing the control group, account for 38.9% of variations in the dependent variable at a 5% level of significance. The significant F-values (F=13.635, p=0.000) accord the overall fit of the model.

The `household size` has a negative association (r=-0.316, p=.000) with the per capita income, but holds insignificant influence (t=-1.39, p=.166) on it. The addition of one family member causes a reduction of 28.18 PKR in the per capita income of the household.

The `average age of the household` places a positive, however insignificant, influence (t=2.3, p=.021) on per capita income. On average, a one year increment in family age may augment per capita income by 13.04 PKR.
The `female proportion in the household`, contributes (t=-2.17, p=.032) significantly to curtailing the PCI of the household. It holds a negative (r = -1.32, p=.076), although insignificant, relationship with per capita income. An additional female member in the family may reduce the PCI of the household by 5.41 PKR.

**Table 6.9: Regression 4: Control Group; OLS Regression Results**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficients</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t-statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1778.1</td>
<td>241.64</td>
<td>7.359*</td>
<td></td>
</tr>
<tr>
<td>HHS</td>
<td>-28.185</td>
<td>20.21</td>
<td>-.109</td>
<td>-1.39</td>
</tr>
<tr>
<td>FPR</td>
<td>-5.412</td>
<td>2.49</td>
<td>-.161</td>
<td>-2.17*</td>
</tr>
<tr>
<td>HHAA</td>
<td>16.996</td>
<td>7.25</td>
<td>.192</td>
<td>2.342*</td>
</tr>
<tr>
<td>DR</td>
<td>-109.21</td>
<td>19.29</td>
<td>-.455</td>
<td>-5.66*</td>
</tr>
<tr>
<td>HHAE</td>
<td>14.021</td>
<td>21.73</td>
<td>.048</td>
<td>.645</td>
</tr>
<tr>
<td>UNSEI</td>
<td>-1.805</td>
<td>.85</td>
<td>-.154</td>
<td>-2.12*</td>
</tr>
</tbody>
</table>

Adjusted R-Square 0.389

F-statistics 13.635*

Note: * Stands for 5% level of significance

(Source: Own data compilation)

The `dependency ratio`, has a significant influence (t=-5.66, p=0.000) on determining per capita income. A decrease in the dependency ratio by one unit accumulates a per capita income of 109.21 PKR.

The `average education level of household` does not contribute significantly (t=0.645, p=0.520) in influencing the determination of family income. An average increase in the
household education level by one year of schooling may cause an increment in per capita income of 14.02 PKR.

The `percentage of income earned from un-skilled employment` plays a significant but minute role (t=-2.12, p=0.36) in determining the household income. A one percent increase in the income is earned from unskilled sources causes a reduction in per capita income of 1.80 PKR.

6.4 Confidence Interval

The hypothesis testing and confidence interval are linked, since both are subject to the same quantities, and the hypothesis testing results are constructed from the corresponding confidence intervals. A confidence interval that is calculated for a measure of treatment effect shows the range within which the true treatment effect is likely to lie. Admittedly, the confidence interval answers the question of “what is the size of treatment differences” and “how precisely this trial did estimate the true treatment differences”. Despite the usefulness of significance tests, some statisticians believe them overemphasized in social science research.³²¹

It can be traced back four decades that the confidence interval has been considered as a useful method for analyzing the statistical parameters of the sample mean. For mean differences, the confidence interval provides similar information as p-values but also provides insight into the magnitude and direction of the difference.³²² However, the analysis based on confidence is rarely used in the literature.³²³

---

³²¹ Tabachnick and Fidell (2007) It is also explained that, while the statistical significance test is common in social sciences, its use is not without controversy. The latest round of arguments against use of statistical significance test began with an article by Carver in 1978, updated in 1993. In these articles, Carver argues that the significance test, used by itself, does not answer most of the research questions. These articles, and many others in a rather larger literature, are summarized by McLean and Ernst(1998). The significance test, they assert, tells whether the result was likely obtained by chance, but does not convey information about the practical importance of the difference (effect size), the quality of research design, the reliability and validity of measures, the fidelity of treatment, and whether the results are replicable. Thus, a significance test is properly only one among many criteria by which a finding is assessed. See also Agresti and Finlay (2009).


In order to assess the statistically significant difference between two point estimates, data analysts often examine the overlap between two associated confidence intervals. However, the method of examining the overlap of the confidence interval is more conservative as it seldomly rejects the null hypothesis.324

The confidence interval concept keeps us truly informed as its width provides the information on the precision of the point estimates. The narrower width of confidence interval captures the precise and smaller range of true effects. The confidence interval will be narrower, and more precise for large sample sizes. However, for small sample sizes the range of the confidence interval is wide, capturing the imprecise and diverse range of effect sizes.325

Due to its informative nature that it keeps researchers more informed, this property is used in the present study for assessing differences between groups. In this regard, as a first step, the complete data set has been compared with each data sub group. Next a comparison has been conducted between the independent data sub groups and the results are presented in Appendices.326

The comparison of the complete data set with each of data sub groups for all the explanatory variables does not display any differences between the groups. Nevertheless, in an exercise of comparing the independent data sub groups with each other, it is only the dependency ratio of the direct treatment group that emerged differently to the dependency ratio of the other two data sub groups. This result confirms the visible differences in the dependency ratio of the direct treatment group from the indirect treatment group and the control group.

Hence the working female proportion is higher in the direct treatment group in comparison to the other groups,327 which is subsequently followed by the higher economic activity, the lower dependency ratio and thus higher per capita income of the households. Hence it

324 Schenker and Gentleman (2001).
325 Winters et al. (2009).
326 Refer to Appendix II, Appendix III, Appendix IV, Appendix V and Appendix VI.
327 Refer to section 4.2.2Gender.
contributes to improve the livelihood of *low-income rural households*. Based on results from across the country, it is also mentioned by Hussain (2012) that an increase in the female labour force participation in Pakistan would result in a higher GDP per capita.

The presence of *working units* can be observed through the different dependency ratios of the *direct treatment group* rather than the other two groups. The results are consistent with the findings of Klein *et al.* (2001) who takes *foreign affiliation* as FDI and consider it as a catalyst for local investment by complementing local resources and opportunities.
6.5 Simulations

It has been stated previously that a higher participation of household members in the labour force, lowers the dependency ratio and accelerates the PCI of the household, which subsequently improves their livelihood. Keeping it more precise, according to the previous results of this study, it could be argued that for the direct treatment data sub group the active economic participation of females in particular, increases the overall economic activity of the household. A higher participation of household members in the labour force ensures fewer dependents in the family that subsequently strengthens the income level and thus the economic conditions of the households.

According to the previous results of this study (which are also confirmed by the confidence interval approach), amongst all the explanatory variables included in the model, the dependency ratio has displayed visible differences for the direct treatment group versus the indirect treatment and control group. This difference of dependency ratio accredits the imposition of treatment, which has been realized through the establishment of working units in the rural areas.

Table 6.10: Dependency Ratio of Different Data Groups

<table>
<thead>
<tr>
<th>Dependency Ratio</th>
<th>Direct treatment group</th>
<th>Indirect treatment group</th>
<th>Control group</th>
<th>Treatment group</th>
<th>Indirect Treatment group + control group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Bound Mean Dependency Ratio</td>
<td>3.21</td>
<td>3.89</td>
<td>4.42</td>
<td>3.55</td>
<td>4.15</td>
</tr>
<tr>
<td>Mean Dependency Ratio</td>
<td>3.55</td>
<td>4.23</td>
<td>4.83</td>
<td>3.89</td>
<td>4.53</td>
</tr>
<tr>
<td>Upper Bound Mean Dependency Ratio</td>
<td>3.90</td>
<td>4.58</td>
<td>5.24</td>
<td>4.24</td>
<td>4.91</td>
</tr>
</tbody>
</table>

(Source: own data compilation)

328 Refer to Section 5.3.2.4; Dependency Ratio of Low-Income Rural Households.
Table 6.10 justifies the use of the dependency ratio for simulating APCI through presenting the LBMDR, MDR and UBMDR of different data groups. It reflects a lower dependency ratio for direct treatment group versus the other two data subgroups. The MDR of the direct treatment group is 16.1% lower than the indirect treatment group and 26.5% lower than the control group. In another subgroup setting, comparing the treatment group with the control group, the lower dependency ratio of the treatment group again signifies the higher economic activity in this data group which might be accredited to the exposure of the working unit within the treatment area.

Simulation Characterization

The fact that the dependency ratio was visibly different in the direct treatment group could be attributed to the treatment. In order to evaluate the systematic impacts of the treatment, the simulation is performed taking the dependency ratio into consideration.

For this purpose, firstly, all of the data of indirect treatment group and control group is augmented by a lower dependency ratio of the direct treatment group. In the following step, this augmented dependency ratio data was used to simulate the per capita income of the household in the indirect treatment group and control groups. Finally, to conduct a counterfactual impact evaluation, the PCI of the direct treatment group is simulated with a higher dependency ratio from the indirect treatment group and control group and thus, the dependency ratio of the direct treatment group is substituted with the dependency ratios of the indirect treatment group and control group.

The above discussed simulation exercise for average per capita income (APCI) is performed based on three different values of mean dependency ratio: mean dependency ratio (MDR), lower bound of mean dependency ratio (LBMDR) and using upper bound of mean dependency ratio (UBMDR).

The results of the simulation characterization are depicted in Table 6.11 and Figure 6.4.
### Table 6.11: Original and Simulated Average Per Capita Income

<table>
<thead>
<tr>
<th>Dependency Ratio (DR)</th>
<th>Original &amp; Simulated with respect to other data groups</th>
<th>PCI (PKR)</th>
<th>Percentage (%) Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LBAPCI Original</td>
<td>1084</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LBAPCI Simulated using DR of GB</td>
<td>1159</td>
<td>6.9% Increase</td>
<td></td>
</tr>
<tr>
<td>LBAPCI Simulated using DR of GA</td>
<td>1236</td>
<td>14% Increase</td>
<td></td>
</tr>
<tr>
<td>APCI Original</td>
<td>1149</td>
<td></td>
<td></td>
</tr>
<tr>
<td>APCI Simulated using DR of GB</td>
<td>1217</td>
<td>5.9% Increase</td>
<td></td>
</tr>
<tr>
<td>APCI Simulated using DR of GA</td>
<td>1293</td>
<td>13% Increase</td>
<td></td>
</tr>
<tr>
<td>UBAPCI Original</td>
<td>1190</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UBAPCI Simulated using DR of GB</td>
<td>1249</td>
<td>5% Increase</td>
<td></td>
</tr>
<tr>
<td>UBAPCI Simulated using DR of GA</td>
<td>1326</td>
<td>11.4% Increase</td>
<td></td>
</tr>
<tr>
<td>Indirect treatment group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LBAPCI Original</td>
<td>1125</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LBAPCI Simulated using DR of GB</td>
<td>1048</td>
<td>6.8% Decrease</td>
<td></td>
</tr>
<tr>
<td>LBAPCI Simulated using DR of GA</td>
<td>1204</td>
<td>7% Increase</td>
<td></td>
</tr>
<tr>
<td>APCI Original</td>
<td>1182</td>
<td></td>
<td></td>
</tr>
<tr>
<td>APCI Simulated using DR of GB</td>
<td>1112</td>
<td>5.9% Decrease</td>
<td></td>
</tr>
<tr>
<td>APCI Simulated using DR of GA</td>
<td>1262</td>
<td>6.8% Increase</td>
<td></td>
</tr>
<tr>
<td>UBAPCI Original</td>
<td>1238</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UBAPCI Simulated using DR of GB</td>
<td>1176</td>
<td>5% Decrease</td>
<td></td>
</tr>
<tr>
<td>UBAPCI Simulated using DR of GA</td>
<td>1318</td>
<td>6.5% Increase</td>
<td></td>
</tr>
<tr>
<td>Direct treatment group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LBAPCI Original</td>
<td>1438</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LBAPCI Simulated using DR of GB</td>
<td>1290</td>
<td>10% Decrease</td>
<td></td>
</tr>
<tr>
<td>LBAPCI Simulated using DR of GC</td>
<td>1147</td>
<td>20% Decrease</td>
<td></td>
</tr>
<tr>
<td>APCI Original</td>
<td>1519</td>
<td></td>
<td></td>
</tr>
<tr>
<td>APCI Simulated using DR of GB</td>
<td>1371</td>
<td>9.7% Decrease</td>
<td></td>
</tr>
<tr>
<td>APCI Simulated using DR of GC</td>
<td>1241</td>
<td>18.3% Decrease</td>
<td></td>
</tr>
<tr>
<td>UBAPCI Original</td>
<td>1596</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UBAPCI Simulated using DR of GB</td>
<td>1449</td>
<td>9.2% Decrease</td>
<td></td>
</tr>
<tr>
<td>UBAPCI Simulated using DR of GC</td>
<td>1334</td>
<td>16.4% Decrease</td>
<td></td>
</tr>
</tbody>
</table>

(Source: Own data compilation)
Figure 6.4: Original and Simulated Average Per Capita Income of Three Data Groups Using Lower Bound, Mean and Upper Bound of Dependency Ratios of Other Groups.

(Source: Own data compilation)
6.5.1 Simulation of Average Per Capita Income Using Mean Dependency Ratio

For the sake of establishing a more accurate and dependable picture of the issue, an intergroup substitution of the mean dependency ratio (MDR) of corresponding groups is conducted and simulated. APCI is calculated for each group with respect to every other group.

For instance, the simulation of APCI by substituting the MDR of the *treatment group* in the *control group* is introduced to comprehend the role of lower MDR of the *treatment group* in the *control group*. This exercise is done in order to evaluate if the *treatment* is applied to the *control group*, how much subsequent changes in the APCI of the *control group* will be followed. For this purpose, the MDR of the *control group* is substituted with the MDR of the *direct treatment group* and *indirect treatment group*, while keeping the data of the rest of the explanatory variables intact.

To calculate the simulated APCI of the *control group*, as a first step, the original regression equation is quantified and the value of predicted APCI is calculated. In the following step, the APCI of the *control group* is simulated with respect to the *direct treatment group*. To simulate the APCI of the *control group*, the beta values of all five indicators are used from the original regression equation of the *control group*. For this simulation the mean values of all other indicators i.e. household size, female proportion in the family, average household average and average household education level are taken from the actual data of the *control group*.

However, to simulate the PCI of the *control group* with respect to the *direct treatment group*, the MDR of the *control group* is substituted with the MDR of the *direct treatment group*. The simulated APCI (1293 PKR) of the *control group* is simulated with respect to

---

329 The previous results indicate that the *treatment* emerges as a lower dependency ratio in the *direct treatment group* rather than the *indirect treatment* and *control group*. The above mentioned substitution is done to see if the dependency ratio of the *direct treatment group* is introduced in the *control group*, keeping all the other variables same, how much change will result in the per capita income of the *control group*.

330 Simulation of per capita income is regressed against five explanatory variables, including household size, female proportion in the family, average household age, dependency ratio and average household education. The original control regression equation is quantified by making use of the beta values from regression and the mean values of the explanatory variables of *control group*.
the direct treatment group is 13% higher than the original per capita income of the control group.

The APCI of the control group is also simulated with respect to the indirect treatment group and a similar exercise is done by substituting the MDR of the control group with the indirect treatment group, which turned out 5.9% higher (1217 PKR) than the original APCI of the control group.

The results depict that if the control group is exposed to the treatment, i.e. the working unit in the area, it may result in higher economic activity and a lower dependency ratio which consequently results in the higher APCI that improves the well being of the household.

To calculate the simulated APCI of the indirect treatment group, a similar exercise of substitution of the MDR with the MDR of the control group and direct treatment group is conducted. It is shown that if the original mean PCI (1,182 PKR) of the indirect treatment group is simulated (1,262PKR) using the MDR of the direct treatment group, it turns out 6.8% higher than the original average PCI of the indirect treatment group. However, the original APCI (1,182PKR) of the indirect treatment group is 5.9% higher than the one which is simulated using the MDR of the control group (1,112PKR).

To calculate the simulated APCI of the direct treatment group, the MDR of the direct treatment group is also substituted for the MDR of the indirect treatment group and control group. The simulated APCI (1,371 PKR) of the direct treatment group with respect to the indirect treatment group is 9.7% lower than the original APCI (1,519PKR) of the direct treatment group. The simulated APCI (1,241PKR) of the direct treatment group is simulated with respect to control group and is 18.3% lower than the original income of the direct treatment group. This counterfactual exercise is conducted for the purpose of analyzing the impact evaluation, which ends up with a clear picture of the systematic effects of the treatment.331

331 See also Gopa Consulting Group (2011). In general, impact evaluation can be subdivided into two streams: Impact evaluations using counterfactuals and impact evaluations without using counterfactuals. Both streams have their comparative advantages. The use of counterfactuals is to be recommended if a precisely defined project or programme
Recapitulating, it can be concluded that the simulated APCI of households in the *direct treatment group* is lower than the original PCI of this group. However, the simulated APCI of households in the *direct treatment group* is much lower when using the MDR of *control group* instead of the MDR of the *indirect treatment group*. These differences in APCI have emerged due to the fact that in the *direct treatment group*, MDR is lower due to a higher economic participation of members particularly of females.\(^{332}\) Therefore, a lower dependency ratio results in higher APCI. In the *direct treatment group*, a higher economic participation of females and extra APCI in the households is attributed to the exposure of treatment.

The APCI of the *indirect treatment group* is lower than the *direct treatment group* but higher than the *control group*. The higher APCI in the *indirect treatment group*, points towards the demonstration effect within the *treatment* area.\(^{333}\)

In such a rural area, females are not considered breadwinners and are not supposed to go out to perform paid jobs. In the *treatment* area, due to the availability of working opportunities in the *working units*, females are leaving their houses to work in a unit that is exclusively established for females, and thus some households are directly benefitted by the *treatment*. As a demonstration effect, in the same area, some females also become economically active, and contribute to earning the family income.

Within the *control group*, lower APCI indicates no exposure to the *treatment* and thus not being equipped with the employment opportunities particularly for females. The APCI of

---

\(^{332}\) Refer to Section 5.3.3.3; Female Work Participation in the Low-Income Rural Household.

\(^{333}\) Demonstration effect is the occurrence or adaptation of behavior caused by the actions of others and their consequences. In social sciences it characterizes the fact that development in one place or community often acts as a catalyst to another place or community. For this study this demonstration effect can be argued as an existence of a lower dependency ratio of *indirect treatment group* as a consequence of higher economic participation and thus lower dependency ratio within the *direct treatment group*. 

121
the indirect treatment group lies in between the direct treatment group and the control group.
6.5.2 Simulation of Average Per Capita Income Using Lower Bound and Upper Bound of Mean Dependency Ratio

For the purpose of establishing a range of systematic impact evaluation of the treatment, two additional yet similar efforts are exercised to simulate the APCI of different groups, through making use of the dependency ratio of other data groups. In these exercises, both the actual upper (UBMDR) and lower (LBMDR) bounds of MDR are replaced with the UBMDR and LBMDR of other groups one after the other. The upper bound and lower bound of the mean values of the dependency ratio provide us with a range of simulated APCI which is augmented with respect to other data groups.

For simulation processes, the same procedure is exercised as outlined previously. Nevertheless, in this analysis two points should be taken into consideration. Firstly, for each group the original LBMDR (or UBMDR) should be replaced with the LBMDR (UBMDR) of the group with respect to which APCI is simulated. Secondly, since dependency ratio is negatively related to PCI, the lower would the dependency ratio (LBMDR), the higher would the PCI (UBAPCI), i.e. the lower bounds of mean dependency ratio (LBMDR) would generate the upper bounds of APCI (UBAPCI) and vice versa.

As a first step, to calculate the original UBAPCI of each group, the LBMDR from the respective groups are used for all five variables.

Likewise for the control group, to calculate the actual UBAPCI the betas from the original control group equation as well as the lower bounds of mean values of all five variables are used. In the following step, to simulate the UBAPCI of the control group with respect to the direct treatment group, lower bounds of the mean values of the other four variables are taken from the original equation of the control group. Whereas, for the variable of dependency ratio, the beta value is taken from the original equation, as the LBMDR of the control group is replaced with the LBMDR of direct treatment group. This substitution of LBMDR will generate UBAPCI.

In a similar way, UBAPCI of the control group is simulated by using the LBMDR of the indirect treatment group. For analyzing the counterfactuals, the substitution of the LBMDR
of the control groups into the direct treatment and indirect treatment group is also performed. This will generate simulated UBAPCI of the direct treatment group and indirect treatment group by using LBMDR of the control group.

An analogous method is used, to simulate the LBAPCI of subsequent groups through employing the UBMDR. The results obtained by using LBMDR and UBMDR justify the previous findings acquired by using the mean values of dependency ratio.

The results depict that if the LBAPCI of the control group is simulated by using UBMDR of the direct treatment group, it might bring an increase of 14% (1,236 PKR) in the LBAPCI of the control group versus the original LBAPCI (1,084 PKR) of the control group. However, this increase in the LBAPCI of the control group will be 6.9% (1,159 PKR) if simulated with respect to indirect treatment group.

The results reveal that if the treatment would be applied to the control group, ceteris paribus, it will bring an increase in the APCI of the control group. The counterfactuals confirm the above stated conclusion, as a complete absence of the treatment, ceteris paribus, would cut down the APCI of the direct treatment group by 20%, whereas indirect presence of the treatment would reduce the APCI by 10%.

For the indirect treatment group, the simulated LBAPCI, ceteris paribus, with respect to the direct treatment group will increase by 7% (1,204 PKR) and with respect to the control group will decrease by 6.8% (1048 PKR) versus the original LBAPCI (1125) of the indirect treatment group. The above mentioned simulation of the indirect treatment group brings an increase in UBAPCI, ceteris paribus, by 6.5% (1,318 PKR) by using the direct treatment group and a decrease of 5% (1,176 PKR) by using the control group versus the original UBAPCI (1,238) of the indirect treatment group. As with previous analyses, the upper and lower bounds of the MDR of the indirect treatment group lie in between the direct treatment and control group, thus their substitution generates the results in similar

---

334 In the previous analysis, it is the lower dependency ratio which distinguishes direct treatment group from two subsequent groups. It could be concluded that lower dependency ratio is very important conspicuous element of the treatment.
ways, (i.e. results of the indirect treatment group are lying in between the direct treatment group and the control group).

Counterfactuals again confirm the previous results, since the simulated UBAPCI of the direct treatment group, ceteris paribus, decreases by 16.4% (1,334 PKR) using the control group and decrease by 9.2% (1449) using the indirect treatment group for simulation rather than the original UBAPCI (1596 PKR) of the direct treatment group. These results validate the previous findings that the simulated UBAPCI of the control group, ceteris paribus, increases by 11.4% by using the direct treatment group and 5% by using the indirect treatment group.

6.6 Comparative Analysis of the Findings

To empirically evaluate the impact of foreign affiliation on the well being of low-income rural households the study incorporates four different analytical tools including group mean differences, OLS regression, the confidence interval and simulation.

Initially, the Group Mean Differences technique is employed to analyze the effectiveness (or otherwise) of the treatment and thus eventual differences (if any) emerging in certain socio-economic variables within different data groups. The studied socio-economic variables include HH size, HH average age, HH average education, dependency ratio, PCI, proportion of working females in the family and proportion of income earned from unskilled employment. It has been observed that group mean differences exist in most of the analyzed variables between the direct treatment group with respect to the indirect treatment group and the control group. These variables include dependency ratio, PCI, percentage of income earned from unskilled employment and the working female proportion in the family. These results are consistent with the descriptive statistics obtained in Chapter 5. The groups mean differences of the direct treatment group with respect to the control group, however, also include the family average age.

The differences in the direct treatment group from its counter groups in dependency ratio, per capita income and working female proportion in the family might be emerging due to the direct engagement of all of the households in the direct treatment group in the working
units. Hence, some of the demographic characteristics like HH size and human capital properties across different data groups reflect that all these households belong to similar socio-economic status.

However, no considerable group mean differences between indirect treatment and control group are observed except family average age and working female proportion. The differences in the working female proportion of these two groups might be emerging due to the demonstration effect\textsuperscript{335} that appears in the indirect treatment group, since in such a rural setting, it is not usual that females are bread winners. Nevertheless, in the direct treatment group the females, who are working in the working units, are involved in paid jobs which may impose a demonstration effect for the area and provide an encouraging atmosphere for females to be part of the labour force. Thus, in the indirect treatment group even if females are not working in the working units, they are contributing in family income through getting involved in paid jobs.

In the group mean differences analysis of the treatment group and control group, the results depict that all of the studied variables are different between both groups except family size and family average education. The similar results are found in a different sub setting, where the groups mean differences of the direct treatment group are observed against a group comprised of the indirect treatment group and control group.

To empirically estimate the role of foreign affiliation on the living condition of low-income rural households, four OLS regressions are run on different data groups like the aggregate data set, the direct treatment group, the indirect treatment group and control group. For regression analysis the average PCI taken as a dependent variable is studied as a function of certain independent variables including HH size, HH average age, HH average education, and dependency ratio, proportion of females within the household and percentage of income earned from unskilled employment.

\textsuperscript{335} Demonstration effect is caused by observing the actions of others and their consequences. In the direct treatment area, females are actively participating in the labour force and thus accelerating the family income. This effect may encourage the other females in the area and stimulates the involvement of females in paid jobs.
The results of regressions analysis reveal the significant F ratio of all four models illustrating that the set of explanatory variables as a whole significantly explain the variations in per capita income.\footnote{Adjusted R-square is as follows: \textit{indirect treatment group} 52.1\%, \textit{direct treatment group} 44.8\%, \textit{control group} 38.9\%, and complete data set 43.9\%.}

For the \textit{aggregate data set}, and the \textit{indirect treatment group} all the predicting variables place significant influence in determining the average PCI of the households.

In the \textit{direct treatment group} analysis, the female proportion of the household and the average age of the household have insignificant influence in predicting the family income. The female proportion of the family is negatively related to the household income in all the four models which reflects that the presence of a higher proportion of females in the family curtails the household income. This result justifies the fact that in such a rural setting, females are not actively part of the labour force, thus the presence of a higher number of females in the household means that they are only adding up to the household size and dependents within the family. Nevertheless, only for the \textit{direct treatment group}, although the female proportion in the family is negatively related to the household income its contribution in lowering the household income is insignificant and the lowest among all the four models. It follows, therefore, that in this particular group females are part of the labour force rather than only dependents. Hence the presence of \textit{working units} in the area and the better availability of working opportunities particularly for females, contribute to lowering the dependency ratio and accelerating the family income in the \textit{direct treatment group}.

For the \textit{direct treatment group}, the positive however insignificant role of age in predicting the family income reflects the fact that in this particular group most of the employees are very young, and have started working there right after crossing the age threshold of child labour. It is quite feasible for the young employees, especially females to start their working life at these \textit{single-sex working units}, which are available on their doorsteps and where no sophisticated and exhausting skills are required to work. Moreover, the majority of very young females working in these units are making money towards their dowries as
from a cultural perspective, females are supposed to get married at a very young age, ideally between 18-22 years old.

For the control group, however, the average level of HH education and the HH size emerged as non significant predictors in explaining the PCI, reflecting that in this particular group additional schooling is not required for additional income earning or on the other hand schooling is too low to be paid off. In this data group the majority of the employees are working in unskilled jobs.  

Conclusively, all four models, confirm that the highest contribution is of the dependency ratio in depicting the per capita income of the households. Nevertheless, among individual data groups in the direct treatment group, the contribution of the dependency ratio is maximum in determining the household income. Moreover, among all four models, the direct treatment group visibly demonstrates the highest economic activity due to the highest proportion of working females in the family, which reflects the lowest dependency ratio that might be attributed to the presence of working units in the area. The higher economic activity subsequently follows higher per capita income of the household which might reveal relatively better livelihood.

In order to measure the effect size of the treatment, the confidence interval technique is employed. The effect size of the treatment is evaluated through comparing the explanatory variables of the treatment group with the control group. Any differences in the explanatory variables across different data groups reflect the effect size of the treatment. This technique keeps the researcher more informed through providing information on the magnitude and direction of the differences. Through comparing the explanatory variables of different data groups, it was only the dependency ratio of the direct treatment group that emerged as different from the dependency ratio of the indirect treatment group and the control group.

337 Refer to section. 5.3.3.2 Employment Status of Low-Income Rural Households
338 As the dependency ratio (and working female proportion) is 3.55 (13.85%) for direct treatment group, 4.23 (5.84%) for indirect treatment group and 4.83(3.60%) for control group. For further details refer to section 5.3.2.4; Dependency Ratio of Low-Income Rural Households.
This individuality of the dependency ratio of the *direct treatment group* is attributed to the higher economic participation of household members particularly of females, which is accredited to the presence of *single-sex* working units in the area. Due to certain cultural issues in rural areas as well as based on religious grounds, it is uncommon for females to go out for paid employment and work side by side with their male colleagues.\(^{339}\) Hence females are usually supposed to be part of the dependent section of the family. For this particular group, however, the females are playing their role for the earnings of basic sustenance, as they are availing the employment opportunities that are provided exclusively for females.

To evaluate the systematic impact of the *treatment*, *simulation* estimations are conducted. These results also validate the previous findings of the study and explain that the *treatment* has been contemplated with the fact that the dependency ratio of the *direct treatment group* is lowest and significantly different from its counter groups.

It is demonstrated, through the simulation exercise, that if *treatment* would be enforced to the *control group*, ceteris paribus, it would have resulted in increasing the economic activity in the area which reflects a lower dependency ratio and a higher level of income. A counterfactual analysis states that if *treatment* is not enforced in the area, and the households are not benefitting from the *treatment*, it is most likely that the households in the so called *treatment group* would be losing this increment in their income that emerged due to the *treatment*.

Recapitulating the empirical results obtained from all four analytical tools, among the studied explanatory variables, the dependency ratio places the highest contribution in predicting the family income. Moreover, the dependency ratio of the *direct treatment group* is lowest and significantly different from the *indirect treatment group* and *control group*. The lower dependency ratio of the *direct treatment group*, which is visibly different from counter data groups, is attributed to the exposure of the *treatment* in the area. Enforcement of the *treatment*, which is realized in terms of the establishment of the *single-sex working*

\(^{339}\) Refer to section 4.2.2; Gender.
units in the rural area, reveals higher female participation in the labour force in the households that are directly engaged with the working units. The higher economic participation of household members reflects a lower dependency ratio and higher PCI which subsequently contributes in upbringing the well-being of low-income rural households.
7 Summary and Conclusion

This study reveals the interplay between openness and poverty both in general and foreign affiliation, and the economic status of low-income rural households who are most likely among the poor in Pakistan. Foreign affiliation interacts with the low-income rural households in their capacity as semi-skilled workers. In this regard, the study employs the trade theories named as the H-O theorem and the Stolper-Samelson theorem as base. The Heckscher-Ohlin Theorem demonstrates the trade relationships between developed and developing countries, whereas the Stolper-Samelson theorem justifies the possible changes in the returns to the factors of production like wages and interest rates.

For the analysis, primary data, collected through a self administered survey from four rural areas of Pakistan, is utilized. To systematically explore the empirics of the study, different statistical techniques are employed like group mean differences, OLS regression, confidence interval and simulation.

The present study defines foreign affiliation as a very close form of resource-seeking FDI that is mainly motivated by easier access to abundant and cheap factors of production, as it is low-skilled labour in the case of Pakistan. Long term affiliation is in place between a sports industry manufacturer in Pakistan and a Danish firm. After acquiring necessary technology in 1976 from their foreign affiliates, the sports industry in Pakistan started producing hand stitched footballs by utilizing low skilled labour and exporting these footballs to their foreign counterparts. Traditionally, the footballs were used to be stitched at homes by workers including males, females and even children who were provided with the material required for football stitching.

However, after the issue of child labour was raised by the International Labour Organization, the domestic sports industry has to maintain the production standards according to the requirements of their affiliates. Thus to remain competitive in the global market, the foreign affiliates were accepting only the product produced under the influence of corporate social responsibility standards. For this reason, in the late 1990s, the sports industry in Pakistan signed the Atlanta Agreement and established single sex working units.

In the data sample, less than 1% of household are lying above the 1.25 $ per day, i.e. poverty line defined by the World Bank.
in rural areas to realize the production and export of hand stitched footballs. These *working units* are monitored according to the requirements of international agencies.\(^{341}\)

Thus, *foreign affiliation* is practically realized through the establishment of *working units* in rural areas, which are considered additional employment and thus income generating opportunity particularly for semi-skilled workers in the area. The economic status of *low-income rural households* is approximated through the average PCI of the household, taking it as a dependent variable for the study.

The first research question argued by the study is relevant to the impact of *foreign affiliation* on the well-being of *low-income rural households*. Through descriptive and empirical analysis, it has been found that *foreign affiliation* contributes to the upgrade in the economic status of *low-income rural households* through accelerating their income, as it gets across the rural households in their capacity as semi-skilled workers.

The second research question argued by the study is related to the impact of enlarging the horizon of employment opportunities within the area. The answer to this question is relevant to the answer of the first question. Easy accessibility of employment opportunities increases the economic participation of household members, which in turn accelerates the household income. In rural destinations the access to employment opportunities is limited, therefore availability of additional employment opportunities, particularly according to the skill specifications of the inhabitants will certainly enhance the economic activity in the area.

The third research question argued by the study is relevant to the availability of employment opportunities in the rural area exclusively for females. Since *foreign affiliation* interacts with rural households in establishing *single-sex working units*, which increases the female participation in the labour force. In such a rural setting, where cultural and religious precedence requires that females are not part of labour force, working opportunities available exclusively to females, in their locality and in accord with their skills will encourage them to participate in the labour force.

---

\(^{341}\) See also section 4.3.2; Traditional Organization of the Football Stitching Industry and 4.3.3; Atlanta Agreement.
Policy Recommendations

This study is conducted in a few remote areas in Pakistan, thus policy recommendations would be relevant to that area only and cannot be generalized for the whole of Pakistan. However, it could also be extended to those areas that are facing the same socio-economic and cultural background. The policy recommendations of this study are as follows:

It has been found in the study that foreign affiliation between developing and developed countries contributes to the upgrade in the well being of low-income rural households through increasing the relative demand of semi-skilled workers. Thus the type of foreign affiliation between developing and developed countries, based on the H-O Theorem (i.e. that is focused on utilization of abundant and cheap resources) benefits the participating economic agents. These findings signal the effective type of foreign affiliation, as it is focused on utilizing the abundant and cheap factors of production such as low skilled labour in the case of developing countries. However, if it is utilizing the skilled labour of developing countries which are scarce and expensive, (although this is not in the case in this study) it might worsen the income inequality situation in the country.

Enlarging the employment opportunities in accordance with the skill specification of the inhabitants increases the possibility of higher economic activity in the area which subsequently improves the livelihood of the households through increasing their income. In rural areas, the majority of workers is less skilled, and most likely belongs to low-income rural households. Thus providing working opportunities in the rural areas for the low skilled workers increases economic participation and strengthens the economic position of the area.

Provision of employment opportunities for the portion of a society that is less likely to be the part of the labour force, such as female dependents enhances the economic activity and thus average income of the family. Females in rural areas are not accustomed to accompanying the male members of the household as bread winners, due to certain social, cultural and religious issues. Thus enlarging the employment
opportunities in a locality, exclusively for females, encourages the participation of females in the labour force. Higher economic activity within the household lowers down the dependency ratio, which subsequently strengthens the economic position of the family through increasing the family income.


136


CARVALHO, SONIYA and WHITE, HOWARD (1997): "Combining the Quantitative and Qualitative Approaches to Poverty Measurement and Analysis; The Practice and the Potential", World Bank, Washington D.C.


SARAVANAMUTTOO, NEIL (1999): "Foreign Direct Investment and Poverty Reduction in Developing Countries", Turn Course Solution, Canada.


SHAKYA, MARTINA (2009): "Risk, Vulnerability and Tourism in Developing Countries”
Logos, Berlin.

SHARAN, DIWESH, LOHANI, BINDU N., KAWAI, MASAHIRO and NAG, RAJAT
Development Bank.

SIDDIQUE, RIZWANA and KEMAL, ABDUL RAZAQ (2002): “Remittances, Trade
Liberalization, and Poverty in Pakistan: The Role of Excluded Variables in Poverty
Change Analysis”, Munic Personal RePEc Archive No. 4228.

SIDDIQUE, RIZWANA and KEMAL, ABDUL RAZAQ (2006): “Poverty-reducing or
Poverty-inducing? A CGE-based Analysis of Foreign Capital Inflows in Pakistan”,


SIEGMANN, KARIN A. (2008): “Soccer ball Production for Nike in Pakistan”, Review of


Recent Financial Crises”, in Zedillo, E. (Ed.), The Future Of Globalization:

SUE, VALERIE M. and RITTER, LOIS A. (2007): "Conducting Online Surveys", Sage,
Thousand Oaks.

SUGIYARTO, GUNTUR (2007): "Poverty Impact Analysis: Selected Tools and

TABACHNICK, BARBARA G. and FIDELL, LINDA SELZER (2007): "Using

TAMBUNAN, TULUS (2005): “The Impact of Foreign Direct Investment on Poverty
Reduction. A Survey of Literature and a Temporary Finding from Indonesia”,
Foreign Direct Investment and Policy Changes: Areas for New Research, 12-13
May, United Nations Conference Center, Bangkok, Thailand.

THAI, KHI V.,RAHM, DIANNE and COGBURN, JERRELL D. (2007): "Handbook of
Globalization and The Environment", CRC Press.

TISDELL, CLEM and SEN, RAJ KUMAR (2004): "Economic Globalization, Social

UNCTAD (2012): “Corporate Social Responsibility in Global Value Chains Evaluation and
monitoring challenges for small and medium sized suppliers in developing
countries”, United Nations Conference on Trade and Development (UNCTAD).


Appendices

Appendix I: Analytical Relationship between Research Variables

<table>
<thead>
<tr>
<th>Data Variables</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Household’s (HH) Demographic Characteristics</strong></td>
<td></td>
</tr>
<tr>
<td>Gender of HH head</td>
<td>Binary</td>
</tr>
<tr>
<td>1=Male, 0=Female</td>
<td></td>
</tr>
<tr>
<td>Family Size</td>
<td>Metric</td>
</tr>
<tr>
<td>Number of all family members within the (HH)</td>
<td></td>
</tr>
<tr>
<td>Economically active family members</td>
<td>Metric</td>
</tr>
<tr>
<td>Number of all family members within the HH who are doing paid jobs</td>
<td></td>
</tr>
<tr>
<td>Female proportion in the HH (FPRH)</td>
<td>Metric</td>
</tr>
<tr>
<td>Number of Females in the HH / HH size</td>
<td></td>
</tr>
<tr>
<td>Kids Proportion below 14 years</td>
<td>Metric</td>
</tr>
<tr>
<td>(Number of kids below 14 years /HH Size)* 100</td>
<td></td>
</tr>
<tr>
<td>Dependency Ratio (DR)</td>
<td>Metric</td>
</tr>
<tr>
<td>Family Size / Number of economically active family members</td>
<td></td>
</tr>
<tr>
<td>Per Capita Income (PCI); (Dependent Variable)</td>
<td>Metric</td>
</tr>
<tr>
<td>Total income of HH / HH size</td>
<td></td>
</tr>
<tr>
<td>Age composition;</td>
<td>Metric</td>
</tr>
<tr>
<td>age groups; Immature (0 - 5 years), student aged (6-15) Youth aged (16-30), Middles aged (31-45); old aged (46+)</td>
<td></td>
</tr>
<tr>
<td>Household average age years</td>
<td>Metric</td>
</tr>
<tr>
<td>HH total age years / HH size</td>
<td></td>
</tr>
<tr>
<td><strong>Human Capital /Education</strong></td>
<td></td>
</tr>
<tr>
<td>Schooling attainments of every HH member</td>
<td>Metric</td>
</tr>
<tr>
<td>The completed years of schooling:</td>
<td></td>
</tr>
<tr>
<td>Not Educated = Zero years of education</td>
<td></td>
</tr>
<tr>
<td>Primary     = 5 years of education</td>
<td></td>
</tr>
<tr>
<td>Secondary   = 10 years of education</td>
<td></td>
</tr>
<tr>
<td>College     = 14 years of education</td>
<td></td>
</tr>
<tr>
<td>HH members combining work with studies</td>
<td>Binary</td>
</tr>
<tr>
<td>Students combining studies with work of football stitching</td>
<td></td>
</tr>
<tr>
<td>Reason for not attending the school</td>
<td>Nominal</td>
</tr>
<tr>
<td>Individual characteristics; Potential, Financial, sickness, community level characteristics; cultural issues, non availability of educational institutes</td>
<td></td>
</tr>
<tr>
<td>Educational institutes type where the HH members are enrolled</td>
<td>Nominal</td>
</tr>
<tr>
<td>1= Public; 2=both public and private; 3=Private</td>
<td></td>
</tr>
<tr>
<td>Average educational attainment of the HH</td>
<td>Metric</td>
</tr>
<tr>
<td>Total year of schooling of the family /number of family members above 5 years old</td>
<td></td>
</tr>
</tbody>
</table>

Continued....
### Physical Capital; Housing Indicators

<table>
<thead>
<tr>
<th>Own house</th>
<th>Binary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing type</td>
<td>Type</td>
</tr>
<tr>
<td>of material the HH is made up of:</td>
<td>1= straw; 2= both concrete and straw; 3= concrete</td>
</tr>
<tr>
<td>Housing attributes;</td>
<td>Type</td>
</tr>
<tr>
<td>of toilet HH is using</td>
<td>1= no toilet within the house; 2=temporary; 3=Permanent; 4=Modern</td>
</tr>
<tr>
<td>Housing attributes;</td>
<td>Nominal &amp; Binary</td>
</tr>
<tr>
<td>Source of drinking water</td>
<td>1= hand pump; 2=Piped water</td>
</tr>
<tr>
<td>Housing attributes;</td>
<td>Nominal</td>
</tr>
<tr>
<td>cooking energy mainly(&gt;70%) used by the HH</td>
<td>1=dung cakes; 2=Firewood; 3=LP Gas</td>
</tr>
<tr>
<td>Housing structure/conditions;</td>
<td>Metric</td>
</tr>
<tr>
<td>adding all housing attributes;</td>
<td>12= having all best options, 4= having all worst options within the HH</td>
</tr>
<tr>
<td>(3 House Material categories, 4 toilet type categories, 3 energy type categories, 2 water source categories with total of 12 options)</td>
<td></td>
</tr>
<tr>
<td>Amenities /Assets indicator</td>
<td>Binary</td>
</tr>
<tr>
<td>Access to basic amenities;</td>
<td>Metric</td>
</tr>
<tr>
<td>Bicycle, Mobile, phone, Motorbike, TV, Refrigerator</td>
<td></td>
</tr>
<tr>
<td>Access to basic amenities index;</td>
<td>Metric</td>
</tr>
<tr>
<td>Owning (Bicycle, Mobile, Bike, TV, Refrigerator) Additive Index; 0 = owning Nothing, 5 = owning all 5 amenities</td>
<td></td>
</tr>
</tbody>
</table>

### Health and Nutrition Situation of the HH

| Sick family members; | Metric     |
| The no. of seriously sick HH members |
| Food security of the HH | Binary |
| If the HH is food secure |

### Economic Situation (Dependant Variable; Per Capita Income)

| Working members proportion within the HH | Metric |
| (Working Members / Family Size*100) |
| Working female proportion within the HH | Metric |
| (Working Females / Family Size*100) |
| Type of income within the HH | Metric |
| Percentage of Income Earned from Unskilled Employment | (Income earned from unskilled employment / Total HH Income)*100 |
| Football snitchers within the HH | Metric |

Continued…
### Perceptions about Socio Economic Conditions

<table>
<thead>
<tr>
<th>Perception</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enough food intake</td>
<td>Binary</td>
</tr>
<tr>
<td><em>HH eats enough to live active and healthy life</em></td>
<td></td>
</tr>
<tr>
<td>Enough earnings</td>
<td>Binary</td>
</tr>
<tr>
<td><em>HH earns enough to meet the family needs</em></td>
<td></td>
</tr>
<tr>
<td>Dynamic development;</td>
<td>Binary</td>
</tr>
<tr>
<td><em>Change in the amenities, health and nutrition, food intake, human capital and economic conditions of HH within the last 10 years 0= Deterioration; 1= Improvement</em></td>
<td></td>
</tr>
<tr>
<td>Reason for change (if any) in amenities within the HH</td>
<td>Nominal</td>
</tr>
</tbody>
</table>

### Employees Information

<table>
<thead>
<tr>
<th>Information</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employees Gender</td>
<td>Binary</td>
</tr>
<tr>
<td><em>1=Male, 0=Female</em></td>
<td></td>
</tr>
<tr>
<td>Age of the employee</td>
<td>Metric</td>
</tr>
<tr>
<td><em>Number of years</em></td>
<td></td>
</tr>
<tr>
<td>Employees age categories</td>
<td>Ordinal</td>
</tr>
<tr>
<td><em>1=Old aged; 46+ years, 2=Middle aged; (31-45) years, 3= Youth aged; (16-30)years</em></td>
<td></td>
</tr>
<tr>
<td>Educational attainment</td>
<td>Ordinal</td>
</tr>
<tr>
<td><em>Years of education of the employees</em></td>
<td></td>
</tr>
<tr>
<td>Working categories of employees</td>
<td>Ordinal</td>
</tr>
<tr>
<td><em>1=unskilled / Informally skilled / learning by doing / untrained labour, 2= Semi-skilled/production labour, 3= Skilled/administration labour</em></td>
<td></td>
</tr>
<tr>
<td>Facilities available for employees at the working place</td>
<td>Binary</td>
</tr>
<tr>
<td><em>(clean drinking water, vivid atmosphere, fulltime energy availability, better sitting arrangement and working overtime)</em></td>
<td></td>
</tr>
<tr>
<td>Facility offered by the employer for employees</td>
<td>Binary</td>
</tr>
<tr>
<td><em>(Health, Education, Housing, Transport, and Loan facility)</em></td>
<td></td>
</tr>
</tbody>
</table>

### Presence of WU in the Area/comments

<table>
<thead>
<tr>
<th>Three Household groups of data:</th>
<th>Nominal &amp; Binary</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>GA = Direct treatment group</em></td>
<td></td>
</tr>
<tr>
<td><em>GB = Indirect treatment group</em></td>
<td></td>
</tr>
<tr>
<td><em>GC = Control group</em></td>
<td></td>
</tr>
<tr>
<td>Two Household groups &amp; employees groups</td>
<td>Nominal &amp; Binary</td>
</tr>
<tr>
<td><em>G1= GA (Direct treatment group)</em></td>
<td></td>
</tr>
<tr>
<td><em>G2= GB + GC (Indirect treatment group + control group)</em></td>
<td></td>
</tr>
<tr>
<td>Two village groups (treatment group and control group):</td>
<td>Nominal &amp; Binary</td>
</tr>
<tr>
<td><em>G1= GA + GB (Villages exposed to working center )</em></td>
<td></td>
</tr>
<tr>
<td><em>G2 = GC (Village not exposed to working centers)</em></td>
<td></td>
</tr>
</tbody>
</table>
Appendices

### Appendix II: Group Differences: (Complete Data Set - to- Direct Treatment Group)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Complete Data set</th>
<th>Direct treatment group</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>95.0% Confidence Interval</td>
<td>95.0% Confidence Interval</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lower Bound</td>
<td>Upper Bound</td>
<td>Lower Bound</td>
</tr>
<tr>
<td>Constant</td>
<td>2182.7</td>
<td>1892.65</td>
<td>2472.77</td>
</tr>
<tr>
<td>HHS</td>
<td>-5.66</td>
<td>-80.462</td>
<td>-32.764</td>
</tr>
<tr>
<td>FPR</td>
<td>-3.855</td>
<td>-7.197</td>
<td>-.513</td>
</tr>
<tr>
<td>HHAA</td>
<td>9.721</td>
<td>.979</td>
<td>18.463</td>
</tr>
<tr>
<td>DR</td>
<td>-147.61</td>
<td>-173.975</td>
<td>-121.248</td>
</tr>
<tr>
<td>HHAE</td>
<td>38.166</td>
<td>14.549</td>
<td>61.782</td>
</tr>
</tbody>
</table>

### Appendix III: Group Differences: (Complete Data Set - to- Indirect Treatment Group)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Complete Data set</th>
<th>Indirect treatment group</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>95.0% Confidence Interval</td>
<td>95.0% Confidence Interval</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lower Bound</td>
<td>Upper Bound</td>
<td>Lower Bound</td>
</tr>
<tr>
<td>Constant</td>
<td>2182.7</td>
<td>1892.65</td>
<td>2472.77</td>
</tr>
<tr>
<td>HHS</td>
<td>-56.613</td>
<td>-80.462</td>
<td>-32.764</td>
</tr>
<tr>
<td>HHAA</td>
<td>9.721</td>
<td>.979</td>
<td>18.463</td>
</tr>
<tr>
<td>DR</td>
<td>-147.61</td>
<td>-173.975</td>
<td>-121.248</td>
</tr>
<tr>
<td>HHAE</td>
<td>38.166</td>
<td>14.549</td>
<td>61.782</td>
</tr>
<tr>
<td>UNSEI</td>
<td>-2.599</td>
<td>-3.782</td>
<td>-1.416</td>
</tr>
</tbody>
</table>
### Appendix IV: Group Differences: (Complete Data Set - to- Control Group)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Complete data set</th>
<th>Control group</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>95.0% Confidence Interval</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>Lower Bound</td>
<td>Upper Bound</td>
<td>Lower Bound</td>
</tr>
<tr>
<td>Constant</td>
<td>2182.7</td>
<td>1892.65</td>
<td>2472.77</td>
</tr>
<tr>
<td>HHS</td>
<td>-56.613</td>
<td>-80.462</td>
<td>-32.764</td>
</tr>
<tr>
<td>FPR</td>
<td>-3.855</td>
<td>-7.197</td>
<td>-.513</td>
</tr>
<tr>
<td>HHAA</td>
<td>9.721</td>
<td>.979</td>
<td>18.463</td>
</tr>
<tr>
<td>DR</td>
<td>-147.61</td>
<td>-173.975</td>
<td>-121.248</td>
</tr>
<tr>
<td>HHAE</td>
<td>38.166</td>
<td>14.549</td>
<td>61.782</td>
</tr>
<tr>
<td>UNSEI</td>
<td>-2.599</td>
<td>-3.782</td>
<td>-1.416</td>
</tr>
</tbody>
</table>

### Appendix V: Group Differences: (Direct Treatment group- to- Indirect Treatment Group)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Direct treatment group</th>
<th>Indirect treatment group</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>95.0% Confidence Interval</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>Lower Bound</td>
<td>Upper Bound</td>
<td>Lower Bound</td>
</tr>
<tr>
<td>Constant</td>
<td>2488.1</td>
<td>1896.88</td>
<td>3079.34</td>
</tr>
<tr>
<td>HHS</td>
<td>-50.589</td>
<td>-95.079</td>
<td>-6.099</td>
</tr>
<tr>
<td>FPR</td>
<td>-.051</td>
<td>-.7.565</td>
<td>7.463</td>
</tr>
<tr>
<td>HHAA</td>
<td>4.559</td>
<td>-14.411</td>
<td>23.529</td>
</tr>
<tr>
<td>HHAE</td>
<td>49.062</td>
<td>-.039</td>
<td>98.162</td>
</tr>
<tr>
<td>UNSEI</td>
<td>-6.356</td>
<td>-11.030</td>
<td>-1.681</td>
</tr>
</tbody>
</table>
### Appendix VI: Group Differences: (*Direct Treatment Group* to *Control Group*)

<table>
<thead>
<tr>
<th>variables</th>
<th>Direct treatment group</th>
<th>Control group</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>B</strong></td>
<td>95.0% Confidence Interval</td>
<td><strong>B</strong></td>
</tr>
<tr>
<td></td>
<td>Lower Bound</td>
<td>Upper Bound</td>
<td>Lower Bound</td>
</tr>
<tr>
<td>Constant</td>
<td>2488.1</td>
<td>1896.88</td>
<td>3079.34</td>
</tr>
<tr>
<td>HHS</td>
<td>-50.589</td>
<td>-95.079</td>
<td>-6.099</td>
</tr>
<tr>
<td>FPR</td>
<td>-.051</td>
<td>-7.565</td>
<td>7.463</td>
</tr>
<tr>
<td>HHAA</td>
<td>4.559</td>
<td>-14.411</td>
<td>23.529</td>
</tr>
<tr>
<td>DR</td>
<td>-230.97</td>
<td>-288.355</td>
<td>-173.584</td>
</tr>
<tr>
<td>HHAE</td>
<td>49.062</td>
<td>-.039</td>
<td>98.162</td>
</tr>
<tr>
<td>UNSEI</td>
<td>-6.356</td>
<td>-11.030</td>
<td>-1.681</td>
</tr>
</tbody>
</table>
Appendix VII: Questionnaire _ Community

Focus group discussion on general situation of infrastructure available within the village.

<table>
<thead>
<tr>
<th>Issues</th>
<th>availability</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main source of drinking water</td>
<td>Piped water/Covered well/Hand pump/Unprotected water source(open well; stream; canal)</td>
<td></td>
</tr>
<tr>
<td>Roads</td>
<td>Paved road/unmettaled road/passageway</td>
<td></td>
</tr>
<tr>
<td>Schools</td>
<td>Public/ Private; Primary/ Middle/ secondary</td>
<td></td>
</tr>
<tr>
<td>Electricity</td>
<td>Available for Household Use/ for production use</td>
<td></td>
</tr>
<tr>
<td>Biogas</td>
<td>Available for Household Use/ for production use</td>
<td></td>
</tr>
<tr>
<td>Garbage control and sanitation</td>
<td>Municipal arrangements/ communal dumping units/individual arrangements</td>
<td></td>
</tr>
<tr>
<td>Employment opportunity</td>
<td>Agriculture/ services/ manufacturing</td>
<td></td>
</tr>
<tr>
<td>Human capital (Skills)</td>
<td>Primary /middle/ secondary/ higher education/ technical skills/</td>
<td></td>
</tr>
</tbody>
</table>
2. Which energy source is mainly used for:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooking</td>
<td>Firewood/ Dung cakes/ kerosene/ Rubbish/ LP gas/ Bio gas</td>
</tr>
<tr>
<td>Lighting</td>
<td>Solar/ Kerosene/ LP gas/ Electricity/ Biogas</td>
</tr>
<tr>
<td>Heating</td>
<td>Firewood/ LP gas/Kerosene/ Bio gas</td>
</tr>
</tbody>
</table>

For this exercise, a focused group discussion will be conducted from a mixed group of approx. 8 -10 members including poor and non-poor male and female participants, social and political leaders and representatives of community organizations.

Socio-economic situation in the village

3. What is the main income source for most people in this village?

(Farming, working in the working centers masonry, carpentry, basket making, weaving, doing job in other areas/commuting everyday to city or other areas for doing job etc.)

4. What does a "typical" livelihood in this village look like?

(e.g. mix of different economic activities in general and major activities in particular like growing rice or potatoes, or sugarcane or livestock products as major activities and income sources)

5. What are the main economic occupations and social characteristics of those households which are food secure?

(Farmers, owning more animals, doing job in cities, working in centers, other family occupational work etc.)

6. What are the main economic occupations and social characteristics of those households which are food insecure?
(Farmers, owning more animals, doing job in cities, working in centers, other family occupational work etc.)

7. How many households in this village have toilets? Approx.(%)_________________

Working Units

General situation of working centers (more specific discussion on working centers)

8. What role does the establishment of working centers currently play in the village economy?

9. What do you think – does working centers make people's livelihoods more food secure or more food insecure?

☐ More secure ☐ More insecure

10. Which facilities/infrastructure/institutions in this village have been created due to the establishment of working centers?

11. Which advantages/benefits do you have from the establishment of working centers?

12. What kind of conflicts/problems/disadvantages has working centers caused in this village?

13. Do you face garbage- and pollution-related problems due to the establishment of working centers?

☐ No ☐ Yes ☐ Don’t know

14. Do you face energy-related problems here due to working centers, such as environmental degradation?

☐ No ☐ Yes ☐ Don’t know
Migration

15. What is the general trend of out-migration in this village?

16. How many households are being supported by migrant family members?

17. How has migration affected village life?

Natural and Social Capital

18. Upon which natural resources do you depend here most for your livelihoods?
   (Agricultural land, orchards, forest, fishery, livestock, cultivation friendly environment, canal etc.)

19. What has been the general trend of natural capital development, particularly since the past 10 years? What are the possible reasons for the increase/decline (if any)?

20. Which strengths (advantages) do you have in this village?

21. Which weaknesses (problems) do you currently face in this village?

22. Which opportunities (potentials) could you utilize to develop the village?

23. Which threats (insecurity) affect you here?

Community coherence

24. Which aspects of village life require community action and cooperation?

25. What are common sources of conflict among the community?

26. How are conflicts normally settled in the community?

27. How are decisions being taken within the community?

28. Are women involved in decision-making?

29. Are women treated equally like men in employment activities?
Overall, how have the following aspects of community cooperation developed in the past 10 years:

**Infrastructure**

<table>
<thead>
<tr>
<th>Issue</th>
<th>Improved</th>
<th>Deteriorated</th>
<th>Same</th>
<th>Do you think this trend is due to working centers?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessibility to the village foot trails, roads, public transport available</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Access to health facilities</td>
<td></td>
<td></td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Cleanliness and sanitation</td>
<td></td>
<td></td>
<td></td>
<td>Don't know</td>
</tr>
<tr>
<td>Access to education facilities (journey shorter, better quality)?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy supply (electricity etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food security</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amount of energy consumption</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water supply</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employment opportunities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human capital (skills/training)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
31. Which energy source is **mainly** used for?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cooking</strong></td>
<td>Firewood/ Dung cakes/ kerosene/ Rubbish/ LP gas/ Bio gas</td>
</tr>
<tr>
<td><strong>Lighting</strong></td>
<td>Solar/ Kerosene/ LP gas/ Electricity/ Biogas</td>
</tr>
<tr>
<td><strong>Heating</strong></td>
<td>Firewood/ LP gas/ Kerosene/ Bio gas</td>
</tr>
</tbody>
</table>
Appendix VIII: Questionnaire _ Household

Household Survey on International Integration and Poverty: Facts and Perceptions:

Enumerators name: ……………………… Interview No/Household (HH) ID: ………

Village: …………………………………… Date:……………………………………

Nature of HH: Nucleus/Joint/Extended  No. of family members: ……………………

Name of Household Head: ……………………………… Sex: □ Male  □ Female

Person interviewed (if other than household head):

Traditional skills available within the (HH):

Brief description of household location:

The purpose of this household questionnaire is to conduct a poverty analysis within the globalized world i.e. the ways in which international integration may affect the rural households in Pakistan. The study is conducted in a few village communities in Sialkot district and going to compare the poverty situation in communities with and without the existence of working centers that are established by internationally integrated industries.

Your cooperation in answering the following questions is highly appreciated. Strict confidentiality is assured. The survey data will be analyzed and evaluated anonymously, without disclosing your names and personal information.

I thank you very much for your kind cooperation and for making maximum an hour of your time to answer the following questions.

(Farah Asif)

Household’s socio-demographic composition

163
<table>
<thead>
<tr>
<th>Serial no.</th>
<th>Household members</th>
<th>Age</th>
<th>Sex</th>
<th>Marital Status</th>
<th>Education level</th>
<th>Current activities if not enrolled (working, HH manipulation, staying idle)</th>
<th>Reasons/Logics of Activities, if necessary</th>
<th>Occupation</th>
<th>Employment status</th>
<th>Payment types (Salary, Daily wages, in kinds)</th>
<th>Monthly income/wages</th>
<th>Monthly employed in households</th>
<th>employed in</th>
<th>Household members</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Household utilities and Amenities and their socio economic status**

2. Do you own the house you currently reside in?  □ No  □ Yes

3. Main material roof is made of:
   - □ Straw/thatch
   - □ Galvanized iron
   - □ Concrete
   - □ Tiles/slate
   - □ Wood/planks
   - □ Other:

4. What is the main source of your drinking water?
   - □ Piped water
   - □ Covered well/spring
   - □ Hand pump
   - □ Unprotected water source (open well, spring, stream, etc.)

5. Which type of toilet are you using?
Modern toilet  Pit latrine (permanent)  Pit latrine (Temporary)

Public/communal toilet  No access to toilet / using jungle

6. What kind of energy is used by your household for cooking?

- Firewood
- LP gas
- Dung/dung cakes
- Kerosene
- Leaves/rubbish/straw/thatch
- Biogas
- Other:

7. Which sources of lighting do you have in your dwelling?

- Solar
- Gas/oil/kerosene
- Electricity
- Biogas
- Other:

8. Which of the following items/facilities does your household own?

- Radio
- TV
- Mobile / phone
- Refrigerator
- Bicycle
- Motorbike

9. The kind of assets your family possesses? (Yes/No)

- Agricultural Land
- Live stock
- Agricultural machinery
- Jewelry
- Car
- Other:

10. If involved in farming, which is your main earning source/crop? (Yes/NA)

- Livestock/meat
- Live stock products (e.g. milk, egg, ghee)
- Rice
- Potato
- Wheat
- Millet
- vegetables
- fruits
- Other:

11. How much of the land you use for your own consumption? (Yes/NA)

- 25%
- 50%
- 75%
Health and Nutrition

12. Is anybody in your household currently ill?
   □ No  □ Yes => if yes,
   No. of sick household members: Since:

13. Does anybody in your household have a chronic disease or disability, which prevents him/her from being economically active?
   □ No  □ Yes =>
   No. of chronically ill/disabled HH members: Since:

14. Are you able to provide them proper health care?  □ Yes  □ No

15. Did someone died due to illness reasons?
   □ No  □ Yes, if yes =>
   No of deaths: Time:
   Specify the reason: chronic illness / poor quality of medical care available / inadequate capacity of household to provide the proper treatment.

16. Are you or your children participating in public immunization programs?
   □ No  □ Yes

17. Do you consider yourself food secure?
   □ Yes □ No => if No, Reason: Duration:

Education and Skills

18. In the past 12 months, how much money have you paid for education (e.g. school fees, books, uniforms)? Approx. Rs..

19. Type of school your children (male/female) are attending.
20. In the past ten years, have you ever been forced to take children out of school for economic/financial reasons?  □ No  □ Yes, if yes => 

□ Male: ………… Since: ………… □ Female: … Since: ………

21. In the past ten years, did you or anybody in your household receive technical training for being economically active?  □ No  □ Yes =>

□ Male: ………… Since: ………… □ Female: ………… Since: ………

Household Income

22. Looking at your household’s total cash income in the past 12 months, please estimate the percentage share of the following income sources:

Income from farming: approx. Rs …………. or …………. …%  
Income from working in centers: approx. Rs …………. or …………. …%  
Income from unskilled employment: approx. Rs …………. or …………. …%  
Income from government service: approx. Rs …………. or …………. …%  
Other income sources:* approx. Rs …………. or …………. …%  

* (income from assets, savings, pension etc.)

23. In the past ten years, has your household experienced any period(s) of hunger or severe food shortages?  □ No  □ Yes => if yes

Reason:  Duration:

Perceptions

Answer the following statements. To what degree do you agree or disagree that the reason of your answer (the change occurred in past ten years) is due to the establishment of working centers.
Note: If the situation has been improved or deteriorated in past ten years; Do you think this trend is due to the working centers? In the following questions 1 is absolutely yes and 6 is absolutely not, encircle or mark the number from 1 to 6

General Perceptions

<table>
<thead>
<tr>
<th>Perceptions</th>
<th>Degree</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you consider that your family eats enough to live active and healthy life</td>
<td>+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5</td>
<td></td>
</tr>
<tr>
<td>Do you consider that your income is sufficient for your family needs</td>
<td>+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5</td>
<td></td>
</tr>
<tr>
<td>Working centers are more profitable as an economic option than farming</td>
<td>+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5</td>
<td></td>
</tr>
<tr>
<td>Working centers offer better employment opportunity</td>
<td>+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5</td>
<td></td>
</tr>
</tbody>
</table>
Method I

Developments during the past 10 years:

In past ten years how do you consider the developments/changes in the following issues?

<table>
<thead>
<tr>
<th>Serial No.</th>
<th>Issues:</th>
<th>Improved</th>
<th>Deteriorated</th>
<th>Same</th>
<th>Do you think this trend is due to working centers?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>1</td>
<td>Economic situation (Income, employment)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Employment opportunities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Housing situation (water supply, sanitation, building rooms, repair, )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Utilities/Amenities/Assets (electricity usage, Machinery, and electronics)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Amount of energy consumption</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Health and nutritional status (going to better health facilities and having adequate nutrition)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Food intake</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Educational status (Sending children to schools / better schools in other areas)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Human capital (skills/training)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Method II

Developments during the past 10 years:
In past ten years how do you consider the developments/changes in the following issues?

<table>
<thead>
<tr>
<th>No.</th>
<th>Issues:</th>
<th>Degree</th>
<th>Do you think this trend is due to working centers?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>1</td>
<td>Economic situation (Income, employment)</td>
<td>+5 +4 +3 +2 +1</td>
<td>0 -1 -2 -3 -4 -5</td>
</tr>
<tr>
<td>2</td>
<td>Employment opportunities</td>
<td>+5 +4 +3 +2 +1</td>
<td>0 -1 -2 -3 -4 -5</td>
</tr>
<tr>
<td>3</td>
<td>Housing situation (water supply, sanitation, building rooms, repair, )</td>
<td>+5 +4 +3 +2 +1</td>
<td>0 -1 -2 -3 -4 -5</td>
</tr>
<tr>
<td>4</td>
<td>Utilities/Amenities/Assets (electricity usage, Machinery, and electronics)</td>
<td>+5 +4 +3 +2 +1</td>
<td>0 -1 -2 -3 -4 -5</td>
</tr>
<tr>
<td>5</td>
<td>Amount of energy consumption</td>
<td>+5 +4 +3 +2 +1</td>
<td>0 -1 -2 -3 -4 -5</td>
</tr>
<tr>
<td>6</td>
<td>Health and nutritional status (better health facilities and having adequate nutrition)</td>
<td>+5 +4 +3 +2 +1</td>
<td>0 -1 -2 -3 -4 -5</td>
</tr>
<tr>
<td>7</td>
<td>Food intake</td>
<td>+5 +4 +3 +2 +1</td>
<td>0 -1 -2 -3 -4 -5</td>
</tr>
<tr>
<td>8</td>
<td>Educational status (Sending children to schools / better schools in other areas)</td>
<td>+5 +4 +3 +2 +1</td>
<td>0 -1 -2 -3 -4 -5</td>
</tr>
<tr>
<td>9</td>
<td>Human capital (skills/training)</td>
<td>+5 +4 +3 +2 +1</td>
<td>0 -1 -2 -3 -4 -5</td>
</tr>
</tbody>
</table>

**Method III**

Answer the following statements. To what degree do you agree or disagree the statement.

**24.** In general, do you consider working centers more profitable as an economic option than farming?
25. In general, do you consider working centers more profitable as an economic option than any other employment opportunity with similar skills?

Absolutely yes [ ] [ ] [ ] [ ] [ ] [ ] absolutely not

Any Reason/examples: .................................................................

26. Do you consider that you or your family eats enough to live a healthy and active life?

Absolutely yes [ ] [ ] [ ] [ ] [ ] [ ] absolutely not

Any Reason/examples: .................................................................

Answer the following statements. To what degree do you agree or disagree the statement and the reason of your answer (the change occurred in past ten years) is due to the establishment of working centers.

**Note**: If the situation has been improved or deteriorated in past ten years; Do you think this trend is due to the working centers? In the following questions **1 is absolutely yes** and **6 is absolutely not**, encircle or mark the number from 1 to 6.

27. How do you consider that the adequacy of family's income over the past one year as for your family's needs?

[ ] Improved [ ] Remained same [ ] Deteriorated

Absolutely yes [ ] [ ] [ ] [ ] [ ] [ ] absolutely not

Any Reason/examples: .................................................................

28. In general, how has your housing situation developed in the past ten years?

[ ] Improved [ ] Remained same [ ] Deteriorated
Absolutely yes □ □ □ □ □ □ absolutely not

Any Reason/examples: ........................................................................

29. In general, how have the utilities and amenities owned by your household changed in the past ten years?

□ Improved □ Remained same □ Deteriorated

Absolutely yes □ □ □ □ □ □ absolutely not

Any Reason/examples: ........................................................................

30. In general, how has your household's health and nutritional status changed in the past ten years?

□ Improved □ Remained same □ Deteriorated

Absolutely yes □ □ □ □ □ □ absolutely not

Any Reason/examples: ........................................................................

31. In general, how has your household's educational status changed in the past ten years?

□ Improved □ Remained same □ Deteriorated

Absolutely yes □ □ □ □ □ □ absolutely not

Any Reason/examples: ........................................................................

32. In general, how has your household's financial status changed in the past ten years?

□ Improved □ Remained same □ Deteriorated

Absolutely yes □ □ □ □ □ □ absolutely not

Any Reason/examples: ........................................................................
33. In general, how has your household's economic situation developed in the past ten years?

☐ Improved ☐ Remained same ☐ Deteriorated

Absolutely yes ———— absolutely not

Any Reason/examples: ..........................................................
Appendix IX: Questionnaire _ Employees

Village: ……………………………  Date: …………………………………………………

Name of the working center: ………………………………………………………………………

Name of the employee ……………………..  Sex:  □ Male  □ Female

Working in this specific center since……………………………………………………………………

Working Hours…………………………………………………………………………………………

Other remarks (e.g. on interview situation): …………………………………………………

Human capital

Education level.

□ Less than primary □ Primary □ Middle
□ Secondary □ Higher □ Other: ………

Do you have any skills/training other than education that helped you to get job in the working centers.

□ No □ yes, specify……………………………………

Did you receive any assistance/ support/ training before getting job in the working centers?

□ No □ yes, (if yes then continue with the next question)

Who offered you this training or assistance?


- Family
- Same working unit
- Other similar working units
- Other

What type of training you received?

- Management
- Driving
- Sewing
- Handmade art
- Other vocational training

**Employment and Wages**

Employment status

<table>
<thead>
<tr>
<th>Employment status/ payments</th>
<th>Permanent</th>
<th>Contractual</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Salary</td>
<td>Daily Wages</td>
</tr>
<tr>
<td>Non- production worker/more skilled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(full time)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non- production worker/ more skilled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(part time)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production worker/ less skilled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(full time)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production worker/ less skilled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(part time)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Note: As noted by Lipsey and Sjöholm (2005: 25), ‘in almost all the wage studies … the only measure of skill is a division between production (less skilled) and non-production (more skilled) workers or blue-collar and white-collar workers’.
Working Units: Supply Side

Facilities available at working centers

<table>
<thead>
<tr>
<th>Facilities</th>
<th>Yes</th>
<th>No</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean drinking water</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vivid atmosphere for working</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy(electricity/kerosene) full time available in summer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy(electricity/kerosene) full time available for heating</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Better sitting arrangement with enough place</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Possibility to work over time</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other facilities offered by the working centers

<table>
<thead>
<tr>
<th>Facilities</th>
<th>No</th>
<th>Yes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td></td>
<td>Employees/Family/Village Dispensary/city Hospital</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td>Established schools; male/female</td>
<td></td>
</tr>
<tr>
<td>Housing</td>
<td></td>
<td>Subsidized renting or possession</td>
<td></td>
</tr>
<tr>
<td>Transport</td>
<td></td>
<td>To commute to work/full time</td>
<td></td>
</tr>
<tr>
<td>Loan</td>
<td></td>
<td>Advance payments/rational loans</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>i.e. marriage/house building</td>
<td></td>
</tr>
</tbody>
</table>

1. What type of other employment opportunities are available for you at your door steps?

2. How those employment opportunities are compared with the opportunities available with the working centers?

☒ Better ☐ Worst ☐ don’t know

3. What you can do if you are asked to quit from this working center / where you can place yourself if you are asked to quit he job from this working center?
Appendix X: Questionnaire _ Working units

Village: ………………………… Date: ……………………………

Name of the working center: ……………………………………………………………

Production of working center: …………………………………………………………

The center is established/working in this village since……………………………….

Name of the parent Industry/working center is established by:………………………

The main reason for establishing the centers in this specific village:…………………..

Other remarks (e.g. on interview situation): …………………………………………

Employment opportunities

<table>
<thead>
<tr>
<th>Employment status</th>
<th>Permanent</th>
<th></th>
<th>Contractual</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>Non- production worker/more skilled (full time)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non- production worker/ more skilled (part time)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production worker/ less skilled (full time)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production worker/ less skilled (part time)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Note: As noted by Lipsey and Sjöholm (2005: 25), ‘in almost all the wage studies … the only measure of skill is a division between production (less skilled) and non-production (more skilled) workers or blue-collar and white-collar workers’.

**Working Units; Demand Side**

Taking into consideration the input demand of the product. How much of this input demand is supplied/ made available by this village.

<table>
<thead>
<tr>
<th>Input Demand</th>
<th>Availability</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(% of Input that is available in this village)</td>
<td></td>
</tr>
<tr>
<td>Machinery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raw material</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production Labour less skilled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Production Labour more skilled</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Working Units: Supply Side**

The working units are established by FDI receiving industries who are obliged to produce the output according to social standards/ environmentally friendly products.

Facilities available at working units:

<table>
<thead>
<tr>
<th>Facilities</th>
<th>Yes</th>
<th>No</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean drinking water</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vivid atmosphere for working</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy(electricity/kerosene) full time available</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>for fans in summer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy(electricity/kerosene) full time available</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
for heating in winter
Better sitting arrangement with enough place
Possibility to work over time

Other facilities offered by the working centers

Facilities offered by working centers for employees

<table>
<thead>
<tr>
<th>Facilities</th>
<th>No</th>
<th>Yes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>Employees/Family/Village Dispensary/city Hospital</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>Established schools; male/female</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housing</td>
<td>Subsidized renting or possession</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport</td>
<td>To commute to work/full time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loan</td>
<td>Advance payments/rational loans i.e. marriage/house building</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Farah Asif

Behringweg 9
44801- Bochum
Germany
Farahasif1@gmail.com

Academic Education

2014
Doctor of Philosophy in Economics from Institute of Development Research and Development Policy (IEE), Ruhr-Universität Bochum, Germany
Supervisors: Prof. Dr. Dieter Bender and Prof Dr. Wilhelm Löwenstein
• With emphasis on Corporate Social Responsibility (CSR) practices within the Global Value Chains

2002
Master of Philosophy in Economics from Quaid-i-Azam University, Islamabad.
Project title: “Household and Community Level Factors Affecting Child Schooling: A Case Study of Rural Daska”
• Specialized in the Development Economics

1999
Master of Science in Economics from International Islamic University, Islamabad
• Specialized in Development Economics

1995
B.A. from Lahore University for Women, Lahore, Pakistan
• Major subjects being Economics and Statistics

1992
Intermediate from Govt. College for Women, Daska, Pakistan

1990
Matriculation from Govt. College for Women, Daska, Pakistan

Professional Experience

2009-2014
Lecturing at Bachelor level together with Prof. Dr. Dieter Bender for the course “International Economic Relations” at Institute of Development Research and Development Policy (IEE), Ruhr-Universität Bochum, Germany

2012
Teaching Assistant at Master level together with Prof. Dr. Dieter Bender for the course “International Trade” at Institute of Development Research and Development Policy (IEE), Ruhr-Universität Bochum, Germany

2013
Impact Evaluation Analysis conducted for both quantitative and qualitative data analysis for the completion of Ph. D dissertation

2001-2002
Junior Research Assistant at Quaid-i-Azam University, Islamabad, Pakistan

2002-2005
Lecturer at International Islamic University, Islamabad, Pakistan

2003-2004
Mentoring of four Master thesis at Fatima Jinnah Women University, Rawalpindi, Pakistan

1998-1999
Research Fellow at International Islamic University, Islamabad, Pakistan
Management/Administrative Experience

2004-2005  Management of training and skill development activities at the International Islamic University, Islamabad, Pakistan
2004  Member of editorial board for the magazine “Ibtikar” published in 2004 by the Department of Economics, Banking and Finance, International Islamic University, Islamabad, Pakistan
2003  Coordinator at graduate level at International Islamic University, Islamabad, Pakistan

Field Experience

2010  Hands-on experience of self-performed survey in Pakistan from Rural semi-skilled employees of CSR induced Global Value Chains
2009  Self-administered survey from industry officials focused on CSR practices prevalent in Global Value Chains in Pakistan
2002  Self-administered survey conducted from the households containing school going age children

Other Skills

Software Skills  MS Office, Data Base System, Working Knowledge of E-Views and SPSS
Working knowledge of literature management softwares’ Endnote and Citavi

Language Skills  English: Business Fluent, German: Satisfactory (B1), Urdu, Hindi: Native speaker

Personal Data

Date of Birth  05.12.1976 in Sialkot, Pakistan
Nationality  Pakistani
Family status  Married

Preferences

Prof. Dr. Wilhelm Löwenstein  Managing Director; Vice Rector Planning, Structure & Finance of Ruhr-University Bochum; Dean of RUB Research School
Institute of Development Research and Development Policy, Ruhr-University Bochum
Building GB, Room 1/60, Universitätsstr. 150
D-44801 Bochum, Germany
Email: Wilhelm.J.Loewenstein@ruhr-uni-bochum.de
Phone: +49 (0)234 / 32-22418

Prof. em. Dr. Dieter Bender  Director em.
Institute of Development Research and Development Policy, Ruhr-University Bochum
Building GB, Room 1/150, Universitätsstr. 150
D-44801 Bochum, Germany
Email: Dieter.Bender@ruhr-uni-bochum.de
Phone: +49 (0)234 / 32-22269