

**Impact of Microfinance on Indian Artisan Sector: Evidence from the State
of Odisha**

*A Doctoral Thesis Submitted in Partial Fulfilment of the Requirements for the Award of the
Degree of*

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in

MANAGEMENT

By

ANKIT BISWAL

(Reg. No: 18MBPH01)

Under the Supervision of

Dr. PRAMOD KUMAR MISHRA



SCHOOL OF MANAGEMENT STUDIES

UNIVERSITY OF HYDERABAD

HYDERABAD – 500046

TELANGANA, INDIA



CERTIFICATE

This is to certify that the thesis entitled “**Impact of Microfinance on Indian Artisan Sector: Evidence from the State of Odisha**” submitted by **ANKIT BISWAL** bearing registration number 18MBPH01 in partial fulfillment of the requirements for the award of Doctor of Philosophy in the School of Management Studies, University of Hyderabad is a bonafide work carried out by him under my supervision and guidance.

The thesis has not been submitted previously in part or in full to this or any other University or Institution for the award of any degree or diploma.

Research article related to the topic of this thesis have been published in the following journal:

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	Course Name	Credits	Result
1.	Statistics for Research	3	Pass
2.	Research Methods-I	3	Pass
3.	Academic Writing for Doctoral Students	2	Pass
4.	Research Methodology-II	4	Pass

Supervisor

Dr. Pramod Kumar Mishra

Dean

Prof. Mary Jessica

School of Management Studies

University of Hyderabad



DECLARATION

I, **Ankit Biswal**, hereby declare that this thesis entitled “**Impact of Microfinance on Indian Artisan Sector: Evidence from the State of Odisha**”, undertaken by me under the supervision of **Dr. Pramod Kumar Mishra** is a bonafide research work which is also free from plagiarism. I also declare that this thesis has not been submitted previously in part or in full to any other University or Institution for the award of any Degree or Diploma. A report of plagiarism statistics from the University Library is enclosed. I hereby agree that my thesis can be deposited in Shodhganga / INFLIBNET.

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Place: Hyderabad

Signature of the student:

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Abstract

Purpose of the study: The study tries to measure the impact of microfinance lending on rural-urban labour migration, export and women empowerment within the Indian artisan sector by taking evidence from the state of Odisha.

Methodology of the study: It uses a quasi-experimental research design on a primary data of 400 artisan households collected by way of structured schedule from 8 different artisan clusters across the state of Odisha. Out of 400 artisan household, 150 were reported to be borrowers of microfinance and kept in treatment group while rest 250 were non-borrowers and were considered as control group for the study. The study used propensity score matching (PSM) technique followed by 1:1 nearest neighbourhood matching and finally measured the average treatment effect (ATE) by the help of 6 different regression models to establish causality.

Findings of the study: Microfinance lending was found to have significant impact of rural-urban labour migration, export and women empowerment in Indian artisan sector. While it has a negative impact on rural-urban labour migration, export and women empowerment are positively affected by microfinance lending.

Implications: The study will provide a blueprint to policy makers as how they can use microfinance as an instrument to generate self-employment, facilitate growth and encourage women empowerment within the sector. The study will also attract the eyes of Micro Finance Institutions (MFI's) towards the Indian artisan sector, especially towards the women in the sector and will also guide them to allocate their limited resources in a more efficient way to increase their success rate.

Keywords: Microfinance lending, Indian artisan sector, labour migration, export, women empowerment, quasi-experimental research design, propensity score matching.

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Chapter 1

INTRODUCTION

Introduction

The study titled “Impact of Microfinance on Indian Artisan Sector” is an area which is underexplored in the literature. The Indian artisan sector which is the second largest sector of occupation in the country after agriculture (Crafting a livelihood, Dasra, 2013), finds itself to be one of the targeted areas of microfinance agencies due to its characteristics as well as the current conditions that are prevailing in the sector. However, the general claims of development made by Microfinance related studies seems inconsistent when we compare it with the condition of Indian artisan sector. The same sector has been a target area for many microfinance agencies for decades. This inconsistency in promise and reality within Indian artisan sector, calls for a sector specific study which is scarce in the current literature.

Chapter Structure

The study tries to establish causal relationship between microfinance lending and socio-economic parameters of Indian artisan sector. This introductory chapter starts with providing a brief profile of global artisan sector. It then follows discussion about the Indian artisan sector, its problems and potential. The chapter also focusses on the level of empowerment and awareness among the woman artisans in the sector. It moves forward to introduce the global microfinance sector, its features, achievements, claims etc and further the chapter focusses on the Indian Microfinance sector. The study revolves around the possibility of various relationships between microfinance lending and Indian artisan sector by framing arguments based on literature and logic. In the end, the chapter lays down the problem statement of the study, research questions, objectives and hypotheses.

Overview of Artisan Sector

Global Artisan Sector

The global artisan sector stands at around USD 300 billion which mostly include Handicrafts and Handlooms (Crafting a livelihood, Dasra, 2013), and more widely operate in the developing nations or what we call the third world countries due to their connection to rich cultural heritage and inadequacy of industries of mass production (Scrase, 2003). Countries like India, China, Bangladesh, Indonesia, Vietnam, Nepal etc. are some countries where artisans are found in substantial numbers. Most of the artisans in these countries trace the origin of these handicrafts and handloom products from their forefathers and beyond and are mostly has deep connection to ancient, temples, shrines, empires etc. The Indian artisan sector is one of such sectors which has its unique traditional handicrafts and handloom production activity since ages and mostly relate it to temple culture. They are present in substantial number and a large population of the country is dependent upon it for their livelihood. The current study tries to focus on the Indian artisan sector which is one of the most important sectors in the Indian economy.

Indian Artisan Sector

India is one of the countries which also has a rich heritage and culture related to handlooms and handicrafts with around 7 million artisans working in this sector as per official figures and 200 million as per unofficial figures and they are considered to be the backbone of non-agricultural activity in rural India. It contributes around USD 4.48 billion value of products in total out of which USD 1.62 billion is terms of exports (Crafting a livelihood, Dasra, 2013; Development Commissioner (Handicrafts), Ministry of Textiles).

Artisans in India are people engaged in labour intensive manual works related to art, handicrafts, handlooms and other handmade products & architecture, and are considered to be the descendants of Viswakarma, the presiding deity of crafts and architecture (Visvakarma's

Children, 2001). According to Visvakarma's Children (2001), the artisans in India enjoyed higher social and economic status in the Vedic period but their status declined gradually in post Vedic period and with the starting of colonial period which resulted in industrial revolution, most of the artisans fell in the lower level of social and economic pyramid.

Indian artisan sector is one of the important yet a declining sector in India's informal economy. According to Liebl and Roy (2003), with growing demand of handmade products in the domestic as well as international market, this sector possesses huge potential for employment and export opportunities. Export opportunities in this sector means direct export by obtaining Import Export Code (IEC) from Export Promotion Council for Handicrafts, Govt. of India or indirect export through firms acting as middlemen like Fabindia etc. According to the official website of the Development Commissioner (Handicrafts), under Ministry of Textiles, GOI, the sector plays significant role in the country's economy by providing employment mostly in rural areas and contributing to the foreign exchange reserve through its export activities. Most of artisan production units tend to be micro enterprises which makes them labour intensive in nature, thus having potential to provide employment opportunities (Crafting a livelihood, Dasra, 2013).

According to Venkatesan (2009), with such characteristics of labour intensiveness and unsaturated demand in foreign market, the sector has a lot of potential to absorb the problem of labour migration from rural areas to urban slums and also contribute substantially to the Indian economy.

The Office of Development Commissioner (Handicrafts), a nodal agency under Ministry of Textiles is responsible for dealing with all kinds of artisans and craft-based activities in the country. They aim to promote and assist all kinds artisans by way of awareness, financial and technical aids, marketing and with other various interventions. The census under the 11th plan provides us with some idea about the profile of artisans in the country. Table 1.1

shows us the demographic distribution of artisans in the country as per the 11th plan census as provided in the official website of Development Commissioner (Handicrafts).

The table is provided below where the segregation of artisans is based on gender and social class. It can be observed in the table that the percentage of women is higher than men in terms of gender segregation. In segregation based on social class the Other Backward Classes (OBC) constitute the highest number of artisans followed by Scheduled caste (SC), then General and finally Scheduled Tribe (ST). More than half of the artisan work-force belong to OBC.

Table 1.1

Demographic Profile of Artisans in India

Segregation based on gender		
Male	43.87 %	30.25 lakhs
Female	56.13 %	38.61 lakhs
Total	100 %	68.86 lakhs
Segregation based on social class		
SC	20.80 %	14.32 lakhs
ST	7.50 %	5.16 lakhs
OBC	52.40 %	36.08 lakhs
General	19.30 %	13.30 lakhs
Total	100 %	68.86 lakhs

Note: The figures are taken from the official website of Development Commissioner (Handicrafts), Ministry of Textiles, GOI (<http://www.handicrafts.nic.in>)

In India, artisans are spread all over the country who make and sell various artistic products. The most common type of artisans who are found in India are, weavers, sculptors, potters, painters, embroidery and zari work artists, jewellery makers, wood artists etc. As far as the artisan clusters in India are concerned, four states namely Uttar Pradesh, Rajasthan,

Gujarat and Odisha consist of total 82% of total artisan population (Crafting a livelihood, Dasra, 2013). The artisan sector being one of the largest informal sectors after agriculture possess huge potentials in terms of employment, environmental sustainability, economic growth, social empowerment etc. However, it is also facing a lot of challenges in the present scenario. Deprivation of basic needs, poverty, social barriers, sharp decline in number of workforces over time including large volume of labour migration, limited export share etc.

The next sections of the chapter provide detail information about the potential that the sector possess and the challenges that it faces respectively.

Potential of the Indian artisan sector

In recent years there can be seen a growing demand for products which are handmade and carry an artistic nature, in both domestic and international level markets. As discussed above the artisan sector consists of micro units and is labour intensive which makes artisan sector a potential area for employment generation (Liebl & Roy, 2003). According to Venkatesan (2009), the artisan sector can absorb the problem of rural to urban labour migration by providing near hand employment and can also contribute to the economy. According to the official website of Development Commissioner (Handicrafts), Ministry of Textiles (GOI), the sector plays significant role in the country's economy by providing employment mostly in rural areas and contributing to the foreign exchange reserve through its export activities. Further, the products that the artisans make are unique and require specialised skills, which makes this product demand high in the international market thus having the potential to contribute towards the export value of the country (Crafting a livelihood, Dasra, 2013). Further the majority of workforce in the sector are women. Also, the larger portion of workforce belong to backward caste. The potential of the sector to provide employment if utilised at larger and better scale may also act as social measures to uplift the socio-economic standard of women and backward classes.

Although the artisan sector possesses a lot of opportunities, it also faces a lot of challenges. The sector is in a declining phase and is termed as “doomed to decline” (Niranjana, 2001). The problems faced by the artisan sector are described in detail in the next section of the chapter.

Problems currently faced by the sector

While the sector holds lots of possibilities, even after having such potential, the sector is endangered in the Indian economy and can be termed as “doomed to decline” (Niranjana, 2001). Millions of artisans are still deprived of basic necessities of living (Liebl & Roy, 2003; Crafting a livelihood, Dasra, 2013), especially the women artisans which constitutes 56.13% of artisan force (Development Commissioner (Handicrafts), Ministry of Textiles, GOI). In the last three decades the total number of artisans has declined by 30% and the major reason to be attributed is, inability to earn a sustainable livelihood, low standard of living and lack of finance (Crafting a livelihood, Dasra, 2013). These has led to migration of labour force from rural to urban areas in search of employment resulting into higher degree of unemployment and degradation of the welfare and standard of living of the artisans in the slums of urban areas. Also, the amount of export though has increased from the past, still it is not even 1% of the total export value of the country (Official Website of Export Promotion Council for Handicrafts and Council of Handicraft Corporations (Government of India)), even though artisans works are the second largest occupation in India after farming (Crafting a livelihood, Dasra, 2013). To summarize, it can be said that even after having an unsaturated domestic and international market, the artisans are unable to earn sustainable livelihood due to lack of financial support leading to rapid labour migration from the sector, under-utilization of the export potential, ultimately leading to deprivation of basic rights and necessities of living especially of the women artisans.

Microfinance: An Overview

Microfinance as a tool came into existence in the 1970s in developing countries to address the credit needs of poor people. Since then, the unprecedented growth of microfinance can be observed from different reports notably from the Microcredit Summit, 2014. The report claims that 203 million clients of microfinance being present in the developing nations as of the year 2011 out of which 116 million are poor to the level of having daily consumption below USD 1.25 (Rajbanshi et al., 2015). It indicates that microfinance is a tool suited for the poor. It has increased its breadth of outreach rapidly all over the world, especially in developing nations. In 2006, Nobel peace prize was awarded to Grameen Bank and its founder Mohammed Yunus for their poverty alleviation programmes using microfinance lending as a primary instrument. As a result, it has gained immense popularity in the eyes of researchers (Sarma, 2015). According to Banerjee et al. (2015), agencies providing microfinance loans have increased rapidly in past 10-15 years and the number of families having microloans globally has increased over 18 times from 1997 to 2010. As on year 2021, the microfinance sector in total has around 140 million borrowers across the globe. The presence of microfinance sector is majorly found in developing regions like Asia, Latin America and Africa. According to Mix Market database, the Gross loan portfolio of microfinance at global level stands at around USD 137 billion as on year 2021. Microfinance claims to alleviate poverty, empower women, create employment and increase standard of living (Imai et al., 2008; 2012; Pitt & Khandker, 1998; Mazumder & Lu ,2015; Garikipati, 2008). While one school of thought claims microfinance to have positive and significant on indicators like income, health, basic rights, education, women empowerment, consumption etc., another group of researchers are sceptical regarding these claims (Rajbanshi et al., 2015; Biswal and Mishra, 2022).

Microfinance in India emerged in form of Self-Help groups (SHG's) during early 1990's (Karmakar, 1999). Government supported the tool by launching policies like

Swarnajayanti Gram Swarozgar Yojana (SGSY) in 1999, followed by policies like National Urban Livelihood Programme and National Rural Livelihood Program, Pradhan Deendayal Antyodaya Yojana (DAY), Mantri Mudra Yojana (PMMY) etc. These policies provided support to microfinance lenders and borrowers by monitoring of microfinance institutions (MFI's), providing credit guarantees, refinancing and sometimes even funding to SHG's (Garikipati, 2008). The latest government scheme to cater microfinance was Pradhan Mantri Mudra Yojana (PMMY) launched in the year 2015. Under the scheme the borrower can get loan under 'Sishu', 'Kishore' and 'Tarun' scheme with a maximum loan amount of INR 50,000/-, INR 5,00,000/- and INR 10,00,000/- respectively. The loan is provided by Commercial Banks, Regional Rural Banks (RRB), MFI's and the credit is guaranteed by the government. Policies prior to PMMY also played similar roles in facilitating microfinance loans.

In India, microfinance mainly targets people from unorganised sectors. MFIs target poor people who are not eligible to get formal funding. Most of the MFIs target women due to their less default rates (D'espallier et al., 2011). The Micro Credit Summit Report (2014) stresses on providing credit to women to promote among them self -employment activities.

In India, the government schemes and MFI's target women more because lending to women is one of the social objectives of MFI's (Cull et al., 2007). The National Bank for Agricultural and Rural Development (NABARD) is an agency set up by the GOI which monitors all kinds of financial and non-financial interventions for development of agriculture sector and other rural activities in the country. Policies related to microfinance, MFI's, RRB's and cooperative banks are monitored by NABARD when it comes to providing credit to poor people. It also publishes an annual report related microfinance named 'Status of Microfinance in India' which highlights the outreach, loan portfolio and various other indicators related to the sector.

Table 1.2, shows the state wise distribution of microfinance loan, number of lenders and outstanding gross loan portfolio from microfinance excluding micro loans from commercial banks.

Table 1.2

State wise distribution of Microfinance loan

Sl no.	States/UT	No. of Active Lenders	No. of active loans (00,000)	Gross Loan Portfolio from Microfinance (00,000,00)
1	Tamil Nadu	80	78.62	18,301
2	Bihar	95	72.5	17,295
3	Karnataka	75	52.13	14,031
4	Uttar Pradesh	108	44.26	10,049
5	Maharashtra	106	33.06	8,197
6	Madhya Pradesh	90	37.88	8,451
7	Odisha	65	32.48	7,521
8	West Bengal	87	31.8	5,778
9	Rajasthan	84	22.23	5,443
10	Jharkhand	66	14.21	3,120
11	Kerala	54	17.54	3,501
12	Gujarat	71	13.49	3,326
13	Punjab	63	11.97	2,628
14	Chattisgarh	59	12.46	2,646
15	Haryana	75	8.57	2,188
16	Assam	44	11.44	1,268

Sl no.	States/UT	No. of Active Lenders	No. of active loans (00,000)	Gross Loan Portfolio from Microfinance (00,000,00)
17	Andhra Pradesh	61	2.08	602
18	Uttarakhand	57	2.35	551
19	Tripura	25	2.39	417
20	Pondicherry	44	0.86	190
21	Telangana	53	0.26	94
22	Himachal Pradesh	37	0.26	70
23	Goa	33	0.23002	54
24	J & K	25	0.141	45
25	Manipur	17	0.16002	30
26	Delhi	63	0.14	40
27	Sikkim	18	0.07	16
28	Meghalaya	22	0.14	16
29	Others	30	0.1103	13
30	Andaman & Nicobar Islands	18 0	0.04 0	12 0
31	Arunachal Pradesh	23	0.03	7
32	Mizoram	15	0.04	7
33	Chandigarh	30	0.0219	4
34	Nagaland	19	0.01	2
35	Dadra & Nagar Haveli	18	0.02	4

Sl no.	States/UT	No. of Active Lenders	No. of active loans (00,000)	Gross Loan Portfolio from Microfinance (00,000,00)
36	Daman & Diu	13	0.0011	0
37	Lakshadweep	1	0	0
Total		198	504.42	1,15,917

Note: Sourced from Status of Microfinance Report, (2022), NABARD

Microfinance Lending has received tremendous flow of resources worldwide, yet it is not free from disagreements (Rajbanshi et al., 2015). It has been a contentious issue when it comes to its claims. Most of the studies in the literature of microfinance revolve around poverty reduction, consumption and household income. A number of studies have found that there is positive impact of microfinance on the above indicators (Berhane & Gardebroek, 2011; Field et al., 2013; Imai et al., 2012; Khandker, 2005; Pitt & Khandker, 1998; Hashemi et al., 1996) however some studies found those results to be zero, modest, exaggerated and illusionary, driven by unobservable factors (Angelucci et al., 2012; Banerjee et al., 2015; Roodman & Morduch, 2014; Rajbanshi et al., 2014).

Substantial studies are also found on studies related to health, education, basic rights, livelihood etc. Although few studies are available on these areas, yet it is not free from varying thoughts. Two schools of thought emerged with one claiming the positive impact of microfinance on the above factors, (Mazumder & Lu, 2015; Rooyen et al., 2012; Littlefield et al., 2003), while the other claimed it to be limited, overrated and illusionary (Rajbanshi et al., 2014; Setboonsarng & Parpiev, 2008; Hulme & Mosley, 1996; Leo & Alfred, 2010).

Studies are also found focusing specifically on women, since MFIs are active in the area of women empowerment (Sinha et al., 2019). Women entrepreneurship, empowerment, children's education, basic rights, health, repayment rates etc. are the topics that the studies revolve around. However, the results obtained are mixed and are not in consensus. While some

studies are in support of the view that micro-lending increases basic rights of women , makes them self- employed, increase participation in family decisions and empower them (Weber & Ahmad, 2014; Bhuiyan, Siwar, Ismail & Bin Hossain, 2013; D’Espallier, Gue’rin, & Mersland, 2011; Todd, 1996), few recent studies claims it to have negligible or even negative impact on the above indicators (Banerjee et al., 2015; Crépon et al., 2015, Tarozzi et al., 2015; Garikipati, 2008; Godquin, 2004). Studies also reported friction between male and female members of the household due to rise of insecurity among men, fear of missing out and or to take control over the loan amount which led to even domestic violence (Goetz & Gupta, 1996; Leach & Sitaram, 2002; Kabeer, 2005).

The above discussions bring forward the existence of substantial debate revolving around microfinance lending and its impact on numerous economic and social indicators. In light of the above discussions, the current study tries to measure the role of microfinance lending in Indian artisan sector and its impact on several socio-economic indicators within the sector. As the chapter advances, a detailed discussion is made over various indicators of Indian artisan sector and its hypothetical relationship with microfinance lending.

Potential role of Microfinance in the artisan sector

Speaking about lack of finance, the artisans usually do not qualify for bank loan because formal funding to small scale industries is still scarce (Kumar Shenti, 2017) and most of artisan production units tend to be micro enterprises. In fact, 39% of artisans incur production expenditures of less than INR 12,000/ USD 215 a year and only 19% spend above INR 50,000/ USD 900 a year (Crafting a livelihood, Dasra, 2013). Here is where microfinance comes into play because according to Mohi Ud Uin & Maidamwar (2016), microfinance plays an important role in growth and development of handicraft and artisan sector which is more labour intensive and needs less investment. Also, Microfinance institutions (MFIs) have become dominant financial service providers for the poor who cannot access to formal financial

institutions in some parts of the world (Monzur & Bhuiya, 2018). According to De Aghion and Morduch (2004), even very small loans can make a very small difference to an artisan or craft person. Further, the sector at the bottom of the pyramid has higher possibility of growth as their potential markets are unsaturated and can also make use of the capital if provided (Prahalad & Hammond, 2002). It also appears to increase the basic rights of respondents and help improve quality of life (Mazumder & Lu, 2015). Hadi (2001), and Strobach & Zaumseil (2007) suggested that microfinance had a positive impact on promoting health knowledge among the participants. Coming to artisan sector, most of the MFIs see them as one of the important potential beneficiaries because of the micro nature of the industries in this sector, labour intensiveness and low credit worthiness.

Microfinance, Labour Migration and Export Engagement in Indian artisan sector

With artisan sector having such importance, two of its unique characteristics are its ability to generate employment in large numbers due to its micro nature (Liebl & Roy, 2003) and its ability to export (Crafting a livelihood, Dasra, 2013). Venkatesan (2009) argued that the artisan sector has the potential to absorb the problem of rural to urban labour migration by providing near hand employment and can also contribute to the economy. The sector also plays significant role in the country's economy by providing employment mostly in rural areas and contributing to the foreign exchange reserve through its export activities.

However, when we look at the current situation, rapid labour migration and lack of export engagement are the two major problems that the artisan sector is facing currently (Crafting a livelihood, Dasra, 2013). The sector which has the potential to generate employment and encourage exports is now facing the problem related to rapid labour migration and lack of export engagement. The sector is in a declining phase (Niranjana, 2001). As stated earlier, the total workforce has declined by 30% in three decades and the export value of the sector is not

even 1% of the total export value of the country. Followed by low standard of living, deprivation of basic necessities of living and high unemployment rate even after migrating to the urban regions. One of the major reasons for its decline is lack of finance (Crafting a livelihood, Dasra, 2013) because formal funding to small scale business is very low (Kumar Shenti, 2017) due to which artisan do not qualify for formal loans and the lack of adequate and low-cost finance doesn't allow them to rise to their full potential.

Microfinance, promises to fill this gap by lending to poor who does not qualify for bank loans (Banerjee et al. 2015). So, it becomes important to know, whether micro-lending with its nature of promoting self-employment can reduce labour migration and increase the export engagement and volume of export sales in the sector. Further the areas like rural-urban labour migration and exportability of products are a niche area in microfinance related studies and is one of the major problems faced by the developing economies in rural areas and especially the artisan sector in India. It becomes important to study the relation between microfinance and labour migration because microfinance promises to promote self-employment, and self-employment in artisan sector leads to absorption of labour migration and increase in export engagement as well as export sales among artisans.

Microfinance and Indian artisan women

Woman constitute the majority of Indian artisan workforce. Approximately 56.13% of artisan force are female (Development Commissioner (Handicrafts), Ministry of Textiles, GOI) which make artisans more targeted by MFI, since MFI's target women more due to their less default rates (D'espallier, Guérin & Mersland ,2011) and lending to women is also considered one of the major social objectives of MFIs (Cull et al., 2007; Gonzalez & Rosenberg, 2006; Olivares-Polanco, 2005; Bassem, 2012). According to Pitt and Khandker (1998), women in a poor household as compared to male are more likely to get credit constrained, have little accessibility

to the wage and labour market with less bargaining power, less participation in household decision making etc. The aforementioned factors like micro nature of the Indian artisan sector, inadequate funding from formal sources, bottom level living standard, deprivation of basic rights to women (Crafting a livelihood, Dasra, 2013; Garikipati, 2008; Liebl & Roy, 2003) have acted as an informal invitation to multiple Microfinance Institutions (MFIs) to enter into the sector for lending business.

As discussed, women have less default rates as compared to men and hence becomes more favourable borrower for MFIs as compared to men (D'espallier et al., 2011; Garikipati, 2008). This has led to formation of many MFIs which lends only to women as it is also widely considered as one of the prime social purposes of MFIs or the depth of their outreach to lend to women (Cull et al., 2007; Gonzalez & Rosenberg, 2006; Olivares-Polanco, 2005; Bassem, 2012; Garikipati, 2008). Another reason for targeting women is because increase in the basic rights is considered as an established proxy for rise in the basic rights of the complete household (Cull et al., 2007; Gonzalez & Rosenberg, 2006; Olivares & Polanco, 2005; and Bassem, 2012).

Microfinance aims to increase the welfare of women by providing them credit and encouraging them to become self-employed (Chen et al., 2017; Microcredit Summit Report, 2014). This means that microfinance aims to empower women by reaching out to them and by providing credit to become self-employed. The women in Indian artisan sector already possess the skills and ideas required to become self-employed. This makes them one of the major targets of microfinance agencies. Self-employment leads to economic growth (Warnecke, 2013) hence microfinance is also found to have a positive effect on the economy of the nation because it also claims to promote self-employment (Biswal & Mishra, 2022).

However, consensus on this claim is still far away as many studies report microfinance to have insignificant impact or even adverse impact on women empowerment (Garikipati, 2008). Studies also claim increase in insecurity among male members of the family, control of

loan amount by them, increase in friction which often take the form of violence etc. (Schuler et al. 1996; 1998; Goetz & Gupta, 1996; Leach & Sitaram, 2002; Kabeer, 2005). So, it can be said that microfinance's impact on women empowerment is highly debated in the literature even after having such extensive volume of research. That indicates existence of other unobservable factors which can influence the outcome of microlending's impact on women empowerment. One of such factors which can be observed in most of the established studies which provides contradicting evidences is that, most of them were carried out in places having very less or no room for becoming self-employed or they do not possess the skill or idea to start and withstand a self-employed activity. However, this study focusses on women in Indian artisan sector who already have a pre-established entrepreneurial activity running or they possess the required skills and ideas to start and sustain an entrepreneurial activity. With this uniqueness, the results are likely to vary since skill is one of the key characteristics for success of female entrepreneurship activities (Warnecke, 2014).

Since empowerment of women is a very much subjective when it comes to its measurement, it makes this a complex task to choose indicators to measure the level of empowerment (Weber & Ahmad, 2018). Researchers use multiple indicators to measure the level of empowerment among women which varies from one study to another and is mostly based on the type of respondents being dealt with. Some of the indicators that are commonly used in studies are children's education, active participation in household decision making, basic rights like health and hygiene, control over family resources etc. (Sinha et al., 2019; Weber & Ahmad, 2018; Abul et al., 2013; D'espallier et al., 2011 & Setboonsarng & Parpiev, 2008).

The study tries to measure women empowerment by using three indicators i.e., woman heading an entrepreneurial activity, woman's active participation in household decision making and women's health and hygiene in an artisan household. Children's education is excluded

because all the artisan women in our sample are not necessarily married or have children. These indicators and their proxies are better explained in literature and methodology chapters of the study.

Research Gaps

Following the above discussion on the problems and potential of Indian artisan sector and the possible role of microfinance's impact on the sector, the study tries to summarize the research gaps of the study and then list them out one by one. The claims that microfinance makes is debated in the literature and is also seem to be inconsistent with the performance of Indian artisan sector which has been targeted by microfinance agencies for a long time. This inconsistency becomes our motivation for carrying out a separate sector specific study on microfinance's impact and Indian artisan sector. Studies are found where microfinance promises to promote self-employment and at the same time studies are also found where self-employment in artisan sector may lead to absorption of rural to urban labour migration and increase in export activity, yet microfinance impact on these two factors are underexplored in microfinance literature. Another important aspect of artisan sector is its woman population due its large population among the total artisans. While microfinance claims to empower women through self-employment, researchers disagree substantially. At the same time artisan women, unlike other woman borrowers of microfinance possess unique traits like pre requisite skill and idea for starting and sustaining a self-employment. Having such type of women respondents in studies related to microfinance is still scarce and needs the attention of researchers across the globe. From the discussions carried, are found the following research gaps:

- Claims made by researchers on role of microfinance in providing access to capital, enabling people to earn sufficient livelihood, empowering women etc. seems inconsistent within the performance of Indian artisan sector even after being one of the

major targeted sectors of microfinance. This calls for a sector specific reinvestigation which is scarce in the literature.

- Impact of microfinance on labour migration, which is a huge problem in the artisan sector, is a niche area in the literature of microfinance.
- Exportability which is a unique and important feature of artisan sector among all the beneficiaries of microfinance is also overlooked in studies related to impact of microfinance.
- Very few studies are found on impact of microfinance on basic rights of women artisans which has unique characteristics like pre-established entrepreneurial skills & activity with labour intensiveness and exportability.

Research Questions

From the above research gaps, the study tries to frame certain research questions that is being going to be answered in the upcoming chapters. Below are the research questions for the study:

1. Are the MFIs successful in reaching out to the artisans?
2. Is microfinance able to cater to the financial needs of the artisan sector?
3. Can microfinance reduce rural-urban migration in the artisan sector?
4. What impact does microfinance have on the export activity of the artisan sector?
5. Does microfinance lead to empowerment of women artisans i.e., starting and sustaining entrepreneurial activities, actively participating in family decision making, improvement in health and hygiene etc.?

Research Objectives

On the basis of the above research questions, the research objectives for the study is framed. The first and second research questions are represented by objective 1, while third, fourth and fifth questions are represented by objective 2, 3 and 4 respectively.

- i. To study the depth and breadth of microfinance outreach among artisan households;
- ii. To examine the impact of microfinance on rural-urban migration in artisan households;
- iii. To determine whether microfinance lending affects the export activity of the artisan households; and
- iv. To assess the effect of micro-lending on empowerment of women artisans in the households.

Research Hypotheses

From the above objectives, the one which can be tested are made into the research hypothesis of the study. The study in total has 3 major hypotheses revolving around the relationship between microfinance and labour migration, microfinance and export engagement, and microfinance and women empowerment, which represents the second, third and the fourth objectives respectively. Out of the three hypotheses, the second hypothesis has two sub-hypotheses while the third hypothesis has 3 sub-hypotheses. The hypotheses are listed below:

H₁1: Microfinance lending negatively affects the rural-urban migration in the artisan households

H₁2: Microfinance lending positively affects the export activities done directly or indirectly in the artisan households

SH₁2(1): Microfinance lending leads to a greater number of artisan household engaging in export activities either directly or indirectly.

SH₁₂(2): Microfinance lending leads to more amount of export sales either directly or indirectly in artisan households.

H₁₃: Microfinance lending has a positive impact on empowerment of women artisans in a household

SH₁₃(1): Microfinance lending has positive impact on women heading an entrepreneurial activity in an artisan household.

SH₁₃(2): Microfinance lending has positive impact on women's participation in decision making in an artisan household.

SH₁₃(3): Microfinance lending has positive impact on women health and hygiene in an artisan household.

Summary

The arguments made and hypotheses framed in this chapter are drawn on the basis of available literature that revolves around microfinance and Indian artisan sector. Literature on woman empowerment, labour migration and export engagement are also discussed with respect to microfinance and Indian artisan sector. However, in this chapter the literature is used and cited mostly to provide support to the arguments made in the chapter and a more detailed and comprehensive picture of the studies cited are missing. Hence, the next chapter in the study provides us with a more exhaustive and detailed discussion regarding the literature revolving around microfinance and the Indian artisan sector.

Chapter 2

REVIEW OF LITERATURE

Chapter Structure

The chapter deals with the relevant literature related to microfinance and Indian artisan sector for providing direction for the study. It starts with discussing some of pioneer studies related to microfinance and the debate around it regarding its impact. It then moves further to discuss about the Artisan sector in India, their characteristics and their current condition. It also discusses the problems and opportunities that the sector possess. The next thing the chapter does is discuss the few studies available, which indicates direct or indirect relation between microfinance lending and Indian artisan sector and how microfinance can be a possible solution to the problems in the sector and a boost for exploiting the opportunities. Then it moves deeper into discuss studies related to microfinance and its possible relation with labour migration and export in the artisan sector, which are relatively less explored areas in the literature. It further discusses the relationship between microfinance and women empowerment which includes a lot of studies but without consensus and tries to link it with artisan women which is also an underexplored area in the literature of microfinance and the artisan woman carries characteristics which are unique among the other women respondents of microfinance. Moreover, the chapter provided direction for a sector specific study related to impact of microlending on the Indian artisan sector, mostly focusing on labour migration, export and women empowerment.

Studies on Impact of Microfinance

Angelucci et al. (2013) in their study have highlighted theory and evidence around the impact of microcredit to form the debate in the topic and raising concerns about its effectiveness, especially when operating with high interest rates. The paper uses a randomised control trial (RCT) of an expansion project of group lending at 110% APR of Mexico's largest microlender group. It was found that microfinance leads to more good outcomes and little harm. The paper tried to answer an important question, whether microfinance the positives of microfinance

weighs more as compared to the negatives when it comes to borrowers. It sides with the group of researches which concludes microfinance to have positive impact on multiple indicators of the borrowers.

Bassem (2012) in their study, explored the possibility of trade-off between social and financial performance of MFIs. The paper focussed on depth of outreach of microfinance as an indicator of social performance and profitability as indicator of financial performance. However, the study concluded that these two objectives are not negatively correlated and microfinance can continue to have double objectives, both social and financial and still be able to fulfil their organisational goals and promise made to the society.

Cull et al. (2007) tried to explore whether there exists a trade-off between financial performance and depth of outreach of MFIs. While the study supported the possibility that MFIs can generate profits while serving the poor, but when it comes to serve the poorest, there exists a trade-off between serving them and profitability. The results suggests that institutional design and orientation matters when it comes to possibility of trade-off between financial performance and achieving social objectives or depth of outreach. It advocates that, as the institutions grow in solidarity and as they mature, they are more likely to find borrowers who can absorb large size loans, thus drifting from its mission of depth of outreach. On the other hand, institutions which are individual-based and or are young are less likely to face a trade-off as compared between financial performance and depth of outreach as they serve to the poorest people with small size loans where the risk of default less due to diversification of funds across many borrowers.

Berhane and Gardebroek (2011) used household panel data set from Northern Ethiopia to study the impact of micro-lending on two major indicators poverty i.e., household consumption and household improvements. By using a fixed effects and random trends model,

they concluded that microfinance lending has positive impact on both the indicators and it has even greater cumulative impact in term as compared the effects observed in the short term.

Field et al. (2013) in their study argued that the classic microfinance model which requires repayment to begin just after the loan is disbursed, discourages entrepreneurship among the poor in high return business due to illiquidity of funds. The study undertook a field experiment which compared the microfinance model where early repayment begins with other microfinance models where repayment starts after a grace period of 2 months after the disbursement of loan. The results indicated that where the repayment starts early, it leads to discouragement of investment in illiquid high return business which leads to under-utilisation of the full potential of microcredit loan and its impact on growth of microenterprise and reduction in household poverty which are otherwise found to impacted significantly by microlending which provides grace period for repayment.

Ghosh (2013) provides a critical review of the recent literature on microfinance in developing nations. It collects experiences India which is one of the largest receivers of microfinance. The study advocates that microfinance cannot be silver bullet for the purpose of developing as most of the microfinance agencies are profit oriented which hinders the progressive objectives of microfinance. The study strongly supports the view of regulated microfinance sector in developing nation to fulfil its social objectives and leads to financial inclusion with proper representation of poor and small producers among the beneficiaries. However, the study also advocates to provide subsidy to the MFIs for carrying out lending operations to fulfil some of microfinance's promised social goals.

Imai et al. (2010) using Propensity Score Matching (PSM) and Average Treatment Effect (ATE) technique on national household data in India, revealed that household access to microfinance reduces poverty. The study also found that mere access to is more effective in

urban areas as compared to rural areas. However, loans provided for productive purpose has more effect on poverty reduction rural areas as compared to urban areas. This means that when there is opportunity and scope for self-employment in rural areas then they perform than urban areas when provided with loans. While where there is no direction or idea where loan must be utilised, it benefits urban people more as compared to rural people.

Ahlin and Lin (2006) in their study takes 5 to 9 years of panel data from 48 countries of 112 MFIs and to analyse the impact of macroeconomic variables on performance of MFIs. The results from the study suggests that macroeconomic variables like growth and has positive impact on MFIs success. However, it was also found that, more formalisation and industrialisation of the economy has adverse effect on MFIs success rate especially their outreach. The study suggests that macroeconomic condition on an economy is an important factor in MFIs performance.

Ahlin et al. (2011) in their paper made efforts to understand, whether and how, the MFIs success is dependent on country level factors like macro institutional and macroeconomic conditions. The study argued that clarity on these factors will lead to more precise assessment of MFIs performance. Data of 373 MFIs aligned with country level data concluded that MFIs perform better in stronger economies as they are more likely to cover their costs, charge less interest, less default rates and minimum operating costs. Yet the study also points out some rivalries. For instance, more economic growth leads to higher level of manufacturing and job opportunities which leads to diminishing rate of microfinance outreach as there is less demand for micro loans.

Biswal and Mishra (2022) tried to establish causal relationship between micro-lending and economic growth by taking state wise panel data from India for 5 years from the database of Microfinance Institutions Network (MFIN). The study uses a combined model of random

effects and instrumental variable approach. The result suggest that microfinance lending has positive and significant effect on economic growth in a developing nation, along with reducing income inequality nation which is otherwise believed to be positively correlated with economic growth.

Lahimer et al. (2013) tried to measure the impact of microfinance on necessity driven entrepreneurship and opportunity driven entrepreneurship at macro level by taking panel data from 45 countries. The results conclude that while microfinance has no impact on necessity driven entrepreneurship, its impact on opportunity driven entrepreneurship will depend upon the socio-economic indicators of the economy.

Nega and Schneider (2014) studied the impact of social entrepreneurship like microfinance on development in Africa. The results of the study reported that social entrepreneurship in form of microfinance can be seen as useful at micro-economic level which can contribute to development in small ways. However, the policies of a developmental state cannot entirely depend upon social entrepreneurship.

Rajbanshi et al. (2015) highlights the difference in the claims made among researchers and practitioners of microfinance by taking evidence from villages of Eastern Nepal. The study took sample from villages where microfinance did not exist previously to create a Randomised Control Trial (RCT) and the Average Treatment Effect (ATE) model. The results reveal that around 3/4th of the impact of microfinance claimed by practitioners are either illusionary or driven by unobservable factors. The study concludes that although a lot of resource have flowed into microfinance recently, yet its impact on as many indicators claimed might not be real or significant enough.

Refereeing the above literature, it may be said that the majority of studies that are carried out in the area of microfinance are mostly related to poverty, standard of living, health,

women empowerment, education, consumption, asset accumulation, economic growth, self-employment etc. More or less microfinance is used as a tool for development both at micro and macro level in developing economies. Hence the Indian artisan sector which is in dire need for development and revival may look microfinance as a tool to solve its problem of problems like labour migration, health parameters, women empowerment, poverty etc. However, the studies related to microfinance is contentious in the literature. A substantial group of researchers claim microfinance's impact on most of the indicators to be overrated, illusionary or having little impact. Even in experimental researches, the results are not in consensus and varies from context to context. Some researchers also claimed microfinance to have even deterrent impact on indicators like women empowerment, savings and consumption. Falling into debt trap, rising insecurity among men leading to friction and violence, improper utilisation of loan amount etc. are few examples from the above study. Due to this debatable literature, it becomes necessary to make narrow group studies like a sector specific study which in the current case is about artisan sector. This type of study may provide with results which may be applicable when and where the situation and context are similar.

Artisan sector in India

Gupta (2011) studies the metal-ware industry artisans in Moradabad, India so that to discover the mechanisms that describe the condition of artisans who are constantly being pushed into poverty. It highlights some limitations of the government policies. It stresses that even the industry generates income, what matters most is the distribution, as most of the artisans have become wage labourers out of unsustainable income. It argues that income inequality among the sector might not automatically be resolved with increase in productivity and access to the domestic and international market, hence a better angle to study the poverty alleviation among artisans is the need of the hour.

Niranjana (2001) terms the artisan as 'Doomed to decline' due the current rate of labour migration, deprived condition of women, low rate of literacy and lack of income to live a standard life. The study claims that millions of artisans are still deprive of basic necessities of living, especially the women artisans. It also claims that the condition of women in the artisan household is far worse than the male members as in an under privileged household, women suffer more than men. Although the study like others also claims the sector to have potential for employment within the local boundary.

Crafting a livelihood, Dasra (2013) a report studies the current conditions of artisans in India. Artisans sector is reported to be the second largest sector of occupation in India after agriculture and consist of women workforce as majority. The study points out the problems of rapid out migration from the artisan sector with huge rate of decline in the past three decades. According to the report the artisans in India are living in poverty with low standard of living and are deprived of basic necessities of living. The reasons that it attributes for the condition are, lack of finance, lack of market awareness, unable to earn a sustainable livelihood etc. It also points out the poor conditions of women in the sector. The study highlights few under-utilised potentials of the sector like ability to provide employment and its demand in international market which may lead to export earnings. Further the larger proportion of women can be a gateway to empower them through self-employment. Yet the sector suffers from lack of earnings and rapid labour migration and low standard of living and worse condition for women in terms of empowerment.

Visvakarma's Children (2001) in their report on artisans, claimed artisans to be the descendant of the Hindu deity Viswakarma, the god of art and architecture. The study argues that the artisans in the Vedic period enjoyed higher status as they were engaged with temple culture but gradually lost their social status in post Vedic period. Further a drastic social and economic decline was seen in the sector during the colonial period due to Industrial Revolution.

Venkatesan (2009) highlighted characteristics of the artisan sector which is labour intensiveness and unsaturated demand in foreign market. These characteristics of the can absorb the problem of labour migration from rural areas to urban slums and also contribute substantially to the Indian economy. The study stressed that the demand in foreign market if utilised can provide better and sustainable income which most of the artisans are unable to earn.

Kanungo et al. (2021) made an effort to study the socio-economic condition of the 'pattachitra' artisans of Raghurajpur village of Puri district. The study also tried to highlight the barriers in the artisan sector which contributes to the unsustainability and limited livelihood of the artisans. The results point out reasons like limited capital base, less participation in decision making by women of the household, emergence of new technology of mass production and excessive involvement of middle men. It suggests to provide subsidies on raw materials, establishing fair price wholesale market and most importantly to provide financial support for initial capital investment while starting a self-employment activity.

Ramachandran et al. (2011) termed artisans as producers who are staying at the Base of the pyramid (BOP). BOP is a term indicating people who are living below \$2 per day per capita and are usually placed outside the scope of formal economy. The revolved around the case study of Fab India Overseas Private Limited (Fabindia), which is one of the leading intermediaries of artisan products between Indian artisans and the domestic and international markets, and is working in this area for five decades with ongoing long-term engagements with the artisans. The paper highlights the potential of employment and export that the sector possesses, which is being utilised by Fab India through long-term engagements between firm and the BOP producers (in this case handloom artisans). It was found that the same engagement contributes significantly towards the poverty alleviation outcomes by increasing the artisan's income through increased turnover and giving better price to the artisans in both domestic and international markets.

Roy (2013) stressed the importance of labour-intensive economy where employment can be provided in nearby localities rather than out migration from mostly rural to urban areas and living in slum with low standards of living and in absence of proper health and hygiene facilities. The study highlighted the British era industrialisation of garments along with the then existing cottage handloom industry and argued that the weaver's livelihood declined during industrialisation during that period and became one of the reasons to pushed the economy into poverty and unemployment. So, the study argued that supporting the handicrafts and handloom industries which are labour intensive in nature will lead to more employment, less migration and better economic state of the nation.

Liebl and Roy (2003) highlighted the problems and potential that the artisans in India go through. According to the study, the artisans sector represents a large and dynamic portion of manufacturing and also possesses huge potential for employment and export opportunities. Most of artisan production units tend to be micro enterprises, making them labour intensive in nature, thus having potential to provide employment opportunities and the handicrafts and handloom sector alone is contributing USD 4.48 bn with USD 1.85 bn in form of exports. The problems within the sector were also highlighted in the study. As per the study, the sector is endangered in the Indian economy with millions of artisans still deprived of basic rights and necessities of living. They are unaware of market, buyers, tastes and technology. Since they usually live in rural and semi-rural areas which place them at great distance from the source of information and also inadequate access of capital does not allow them to adapt to the change successfully. The paper also discusses about the interventions that has been provided to the sector by government and non-government agencies like tax benefits, market information, capital financing etc.

Chambers (2020) listed the reasons for labour migration of artisans in India. The reasons attributed mostly related to liberalisation, Globalisation and escalating procedures of

marginalisation which have resulted into have led to longitudinal burdens, disintegration of artisan work force and forms of enslavement that continues to discourage artisans even in the modern times. The study also points out the problems that artisans face after migrating from their local territory to find work in other places, mostly in slum areas.

Scrase (2003) claimed artisans to be living in a precarious, broken and underdeveloped conditions, especially in the third world economies. The study also criticizes both government and non-government efforts to uplift the artisans as limited and ineffective. Globalisation of craft is also mentioned to be the reason for such conditions of artisans in absence of fair-trade policies. The paper suggests policies in favour of fair trade among artisans, encouragement in terms of financial assistance by government and non-government organisations and proper training & skill development initiatives by the government to promote and revive the artisan sector in the current globalised society.

Summarizing the above studies, it can be said that artisans in India as explained in the literature are in a stage of decline. Most of them live in deprived state without basic amenities. They have low health parameters, low consumption, less asset holdings and savings. Majority of them are either unemployed or disguised unemployed and uneducated. Women in the sector who are in majority also lives in disempowered state. Further there is a rapid out migration in the sector due to unsustainable livelihood. The reasons for those above problems were mostly lack of market information, mass production by industries, technological obsolesce and lack of finance as highlighted by the literature above. However, the sector also possesses a lot of potential in terms of employment generation and exportability. Although the problems the sector currently is facing is of unemployment, lack of income generation and deprivation of basic rights to women, the artisan occupation itself is the answer to the above problems. Labour intensiveness, demand in international market, available skill for self-employment and large proportion of women artisans are the characteristics which studies claim can be a solution for

above problems. At the same time the problems in the sector are similar to the problems that microfinance claims to solve. Hence the next segment tries to explore some studies which relates microfinance and artisans.

Microfinance and Artisans

Banik and Bhaumik (2005) tried to answer the question whether some segment of beneficiaries of a subsidised programme for poverty alleviation where toolkits were provided to artisans at 90% subsidy, benefit more than others segments. The results found that while the poverty alleviation program has significant and positive impact on poverty levels of artisans, few segments benefit more as compared to others. The study further revealed that the sections which are socially and economically backward are likely to benefit more as compared to sections which are more privileged.

Government of India. (2000a; 2000b; & 2000c) has undertaken to measure the impact of supply of improved toolkits to rural artisans (SITRA), a government poverty alleviation program for artisans where they were provided with 90% discount in necessary tool kits. These three reports cover almost all major corners of the country like, Haryana, Western region, Bihar, some Southern states etc. The results report improved indicators in terms of income, turnover, consumption and savings.

Banerjee et al. (2015) conducted a study using Randomised controlled trials (RCT) in 104 slums of Hyderabad where 50% of the slums were provided intervention by way of opening a micro-lending office in those slums. While the study reports the findings on many indicators few of which gets impacted by the lending and few doesn't, migration of labour and consumption in the household were found to be affected by the loan. While consumption is significantly higher among the treated groups, the likelihood of migrating is less from treatment group as compared to control group. This indicates that the treatment group are better in terms

of sustainability of livelihood which results in lesser migration from the household. Study on migration which is a major problem in the artisan sector can be made in context with microfinance to see whether it can be used as a solution to the problem.

Mohi Ud Uin and Maidamwar (2016) tried to test the impact of microfinance on empowerment of women artisans within the sector. According to the paper microfinance plays an important role in growth and development of handicraft and artisan sector which is more labour intensive and needs less investment. The results also revealed to have positive and significant impact of microfinance on women empowerment and also promotes eco-friendly activities of income generation. However, the study relies upon secondary data and is more judgemental in nature. Hence more research on the same is needed.

Newman et al. (2014) claimed microfinance to have entrepreneurial outcomes in developing economies. It explores the mediating relation of psychological and social capital and its significant impact on self-employment activity. In context to our study, artisan sector in India which is in need of social capital and belong to a developing economy may have entrepreneurial outcome from microfinance lending. This is due to the nature of their work that is naturally of self-employment which has been reduced to wage work in most places due to lack of capital.

Van Rooyen (2012) emphasized on microfinance as a tool for development and tried to explore through systematic review, its impact on various aspects that includes income, asset holding, consumption, health, child labour, women empowerment, education etc. in sub-Saharan Africa. The conclusion of the study was mixed with microfinance doing good as well as harm to the poor. This indicates that microfinance as a topic of research is full of debates and disagreements among the research community and hence more scope of research on the area is still present even after having such huge volume of literature. Microfinance's impact on

artisan sector which suffers from most of these problems can be studied to see whether it can help the artisan sector to revive itself as microfinance claims to be a tool for development and a solution for above problems.

This segment discusses about studies related to artisans which indicates need for finance to solve the problems in the sector and also talks about studies related to microfinance which claims to solve such similar problems. Few subsidised programs which lead to purchase of capital assets and ultimately lead to have significant results in terms of reducing poverty, increasing health indicators and empowering women points out the potential role of microfinance in those scenarios. Further studies related to microfinance which led to increase in indicators like self-employment, women empowerment, consumption, education level, income and reduction in labour migration, child labour and few other factors, indicates microfinance to be tool which may be effective in the artisan sector. However, it can be observed that, the microfinance agencies have been targeting artisans all over the country since a long time yet the sector is still highly dependent on loan from informal sources and suffer from lack of finance. This contradiction has become one of our motivations to carry a sector specific study.

Labour Migration and Export

Crépon et al. (2015) reports a Randomised Control Trials (RCT) in the rural areas of Morocco in the year 2006 to test the impact of a microcredit implemented therein. It reports a 13% borrowing rate among the treatment group and none among the control group. The results though support that microcredit increases self-employment activity and profit from the same, there still exist a substantial number of borrowers whose profit seems to have been affected negatively from access to microfinance loan. Further there seems to be no significant net

increase in labour income or consumption which indicates that the higher income may be result of engagement of more labour but there might not be higher profitability in relative terms.

Banerjee et al. (2015) used RCT by opening a microfinance lending branch to lend women in the slums. Out of 104 slums 52 were treated with microfinance loan while the rest 52 slums were considered to be control group. While the results were found to be mixed, the difference among control and treatment is only found in case of consumption and labour migration where the treated group is observed to perform better.

Crafting a livelihood, Dasra (2013) claims that the labour intensiveness of the artisan sector can absorb the problem of labour migration by providing near hand employment. At the same time the report talks about the uniqueness of the sector of being able to create products which has high demand in the international market, thus using export as a potential characteristic of the sector to increase their income. However, the sector is suffering due to lack of finance to support self-employment as most of the artisans do not qualify for bank loans.

Venkatesan (2009) argued that the artisan sector has the potential to absorb the problem of rural to urban labour migration by providing near hand employment and can also contribute to the economy. Due to the micro nature of the artisan sector and the nature of labour intensiveness, the sector can absorb the problem of unemployment and the uniqueness of the products can fetch them a good deal in the domestic as well as the international market.

The above studies highlight the characteristics of artisan sector which is labour intensive and perform at micro scales, high demand in domestic and international market, due to which it can create employment, absorb the problem of labour migration and can also lead to better income due to exportability of the product. At the same time few of the studies argues microfinance to significantly reduce labour migration and generate self-employment. Microfinance encourages self-employment at village level which provides near hand

employment which may lead to reduction in labour migration from the sector. It may further lead to engagement in export activities due its potential to export. Studies related to labour migration and export in microfinance literature is very scarce and even less when it comes to the artisan sector. Hence a study which explore microfinance impact on labour migration and export engagement in the sector becomes necessary.

Microfinance and Women Empowerment

Bhuiyan et al. (2013), reviews empirical evidences and findings from prior studies and other sources related to woman empowerment and children education. It examines the activities of Grameen Bank in increasing the literacy among the children of the borrowers and helping women of the borrower group in empowering themselves as compared to non-borrowers. It concludes that borrowers of Grameen Bank stand higher in terms of women empowerment and children's education as compared to the control groups or the people who are not the members of Grameen Bank terms of improving children's literacy and empowerment. However, the study also discusses few disparagements when it comes to the proper use of microfinance lending, arguing that few MFIs focus more on money-making rather than making a social impact. The study discusses a brief profile of Grameen Bank, starting from its origin, development and aim. The authors put importance on the activities of Grameen bank which focusses on providing loans to poor people and mostly women. Children's education, health, safety, reduction of vulnerability to poverty etc were used as indicators of women empowerment in the study. It follows a literature review method by gathering articles related to Grameen Bank, Microcredit, Women empowerment and children education. The findings support the claim of Grameen Bank having positive impact on children education and women empowerment.

Mahmood (2011) made attempt to explore the influence and impact of micro-lending on woman entrepreneurship and empowerment in context of developing nations. The results

found revealed that 62% of women who got the loan were able to establish their own business while 38% women used it for either household consumption or for other purposes. The reason for such less percentage of women establishing their own business is attributed to lack of training by MFIs.

D'espallier et al. (2011) took 350 MFIs across 70 countries study the relationship, whether lending to women with microfinance loans has less credit risk as compared to men. The results of the study reveal that having a higher proportion of woman as borrowers of microfinance by MFIs, results in lower risk of portfolio, less writing-off of loans and lesser provisions. The study also suggests that the tendency of enhanced repayment by women is more robust with individual-based moneylenders, non-government organisations, and regulated or structured MFIs.

Banerjee et al. (2015) in collaboration with one of the leading MFIs of India, took 104 slums in Hyderabad out of which they randomly treated 52 slums by opening a microfinance lending branch to lend women in the slums. The rest 52 slums were considered to be control group since there was no activity of other MFIs in those 104 slums before they provided the intervention to half of those slums. The results found were mixed. Microfinance had no impact on self-employment, women empowerment, education and other social factors. The difference among control and treatment is only found in case of consumption and labour migration where the treated group is observed to perform better. The result of the study was evaluated over a period of 3 years and only 30% of the total women residing in the slums under treatment group, turned out to borrow microfinance loan.

Khan et al. (2022) argues that microfinance backed entrepreneurial activity can become a tool for women empowerment in terms of economic, social, political and psychological indicators of empowerment, where the entrepreneurs who are borrowers were found to be better

in terms of above indicators as compared to the non-entrepreneur borrowers. However, the non-entrepreneur who were borrowers were also found to have better indicators of women empowerment as compared to non-entrepreneurs who are also non-borrowers.

Garikipati (2008) tried to study the impact of microfinance loan on household vulnerability and women empowerment by taking evidence from India. The study highlights the ongoing debate and lack of consensus in the literature regarding the impact of microfinance on women empowerment. The results of the study reveal that while microfinance loans to women undeniably have positive and significant impact on the household by diversifying their incomes and making them resilient to shocks, its benefits on women themselves is uncertain. Whether the microfinance loan will benefit the women in empowering herself will depend on factors like the control of women over assets in household and whether the loan is managed by the women borrower herself. Further the study also pointed out that where in a household there is demand for credit for any productive activity by the members of the household, the microfinance loan in that case might not benefit the women personally. The study overall raises concerns over situation in a household where the micro loans provided to women may not lead to their empowerment and in few cases may even lead to more disempowerment.

Garikipati (2012) argues that women's control over loan-created asset must be a critical objective for policy makers. The reason for this is backed by the results of the study which analyses the time used by male and female post microcredit loan disbursement. The results reveal that there is negligible impact of microfinance on women time uses but has significant impact on their husband's time usage from moving to spend time in self-employment business as compared to previous time spending over wage work where they were mostly paid badly and had low status. This indicates that the women's loan is typically used by their male counterparts and it also increases their ownership in the household assets. This leads more deprivation on women in household rather than making them empowered. The study concludes

that if loan is intended to empower women, then mere access to loan is not enough but what matters is its utilisation by women themselves.

Rahman (1999) explained that bank workers initially try to disburse more loan money to reach to targets and generate more accrued income and later it becomes difficult to recover the amount which leads to inflicting pressure on female borrowers. This leads to increase in dominance over women, violence and tension in the household.

Kabeer (2005) highlighted the debate revolving around those who claim it as a magic bullet for women empowerment and those who dismiss its alleged abilities to automatically contribute to development and women empowerment. The results suggests that, while access to microfinance has the ability to and does lead to development in economic and social indicators, it automatically doesn't to the outcomes but depend upon presence of other interventions to happen along with, like education, political quotas etc.

Goetz and Gupta (1996) while the credit availability to poor rural women has increased highly in Bangladesh over time, the study raises suspicions on whom does loan amount goes to. It argues that the loan given is women in most cases is utilised and controlled by their husbands while the women in the household remains disempowered and before. While practitioners and some researchers celebrate the high intake rate of credit along with their high probability to repay as proxy for women control over assets and their empowerment, the study challenges it with the results which reports a significant number of those loans being controlled by males. This ultimately leads to either no effect on women empowerment or sometimes negative impact on their empowerment where the women have to arrange money for repayment when husband loses the investment in risky business or in improper utilisation. The study suggests that money arranged by women to repay debt mostly comes from sources which could have otherwise been used for consumption or savings.

Chowdhury and Chowdhury (2011) studied the effect of microfinance on women empowerment by using panel data from Bangladesh. This paper claims that 90% of women borrowers of microfinance in Bangladesh are women which indicates that microfinance is more focussed on women as the claimed by MFIs with respect to their social objectives. The study compares eligible women who participated in a credit program with eligible women who did not participate in a credit program. The results of the study show women in participant group having higher level of empowerment both at individual and household level as compared to women in non-participant group. However, the paper also discusses some disempowerment effect of microlending on women like rising friction between women borrower and household members, especially their husbands. Domestic violence towards women was also reported in few cases. The paper highlighted that around 40% of the investment decision regarding the loan ends up with their husbands or other family member which leads to the empowerment process useless. Further the insecurity among the male family members towards the women borrowers due to dependency on them was also pointed out as a reason for friction which ultimately leads to disempowerment in most of the cases. Although the results fall in the category which supports the theory that microfinance lending leads to women empowerment, it also points out certain scenarios where the loan provided to women might lead to insignificant effect or even significant negative effect on their empowerment.

Bhuiya et al. (2018) examined the effect of micro-credit on health seeking behaviour and health services by taking evidence from 439 household spread over 20 villages in Bangladesh. These 20 villages were coming under one of 4 districts which were covered by 3 popular microfinance lending programs. The results suggested that those who participated in microlending programs have significant improvement in health-related issues related to antenatal care, diarrhoea remedial, and immunization. Further positive association was found between participation in microlending program and usage of other health services. Overall, the

results suggest positive impact of microlending programmes on health indicators among participants.

Hadi (2001) tried to assess the impact of microcredit program on health knowledge among 500 poor women aged between 15-49 and are mothers of at least one child of age less than 5 years. The study was undertaken in rural Bangladesh in the year 1998. The results reveal that, participants on the program have better maternal knowledge as compared to non-participant women. The results also revealed that the duration of the credit program also has significant impact on health knowledge among women.

Khandker (2005) tried to measure whether microlending leads to overall reduction of poverty or its just redistribution of income and short-term income generation. The common hypothesis as pointed in the study is that there is no or modest impact of microfinance on aggregate poverty reduction. However, the results of the study suggests that microfinance can reduce poverty at individual as well as aggregate level and has more impact on female borrowers as compared to the male borrowers. It concludes that microfinance helps poor participant as well as the local economy.

Weber and Ahmad (2018) studied the relation between loan cycle and woman empowerment. It compares the woman in higher loan cycles with lower loan cycle using a quasi-experimental research design. The results concluded that microfinance has positive impact on women empowerment. The study a set of indicators to measure empowerment among women. It discusses various studies using multiple indicators to measure empowerment. Children education, control over resources, active participation in household decision making, health, sanitation, income, consumption, harmony in family etc. were some major indicators discussed in the study.

Setboonsarng and Parpiev (2008) tried to study the impact of microfinance on Millenium Development Goals (MDGs) and found to have significant impact on few of the MDGs. The study used Propensity Score Matching (PSM) to take care of the selection bias arising out of the data. MDGs related to women empowerment like health, education, decision making process etc. were found to have weaker significance in the study.

Pitt and Khandker (1998) estimated the impact of group-based credit program on gender in Bangladesh. The results revealed that women are benefited more from group-based credit program of microfinance as compared to men. Results also claim that these the program also has significant effect on social indicators like, woman share of assets, children education, girl children education etc.

As the study above suggests that there exists no consensus related to women empowerment in the microfinance literature even after having a vast literature done on women empowerment. While a group of researchers claim microfinance to significantly increase level of empowerment among women by providing them loan to become self-employed, another group argues them to be illusionary and overrated. Few researchers even claim microfinance to have negative impact on women empowerment. They argue that this increases friction among the male and female members in the family and result in domestic violence in some cases. They also reported the loan amount to be mostly controlled by male members of the family and used for other purpose while the woman is pressurized to repay the debt which disempowers her even more. While presence of existing skill and training which develop skill among the woman borrowers is said to result in empowerment, such study are very less. Hence artisan woman who already possess existing skill for self-entrepreneurship must be studied with respect to microfinance loan and its impact on their level of empowerment.

To measure women empowerment which is very subjective and complex, there are multiple indicators available in the literature. Although it varies from study to study keeping in view the type of respondents. Few indicators which are often found in most studies are children's education, authority over household resources, active participation in household decision making, health and hygiene etc. The study takes four indicators which are widely used for measuring women empowerment which is the third hypothesis of the study. A woman heading the entrepreneurial activity of the household is first indicator which represents the first sub-hypothesis of hypothesis 3, active participation in household decision making is the second indicator which represents the 2nd sub hypothesis and Body Mass Index (BMI) which is an indicator for health and availability of toilet as a proxy for hygiene both represents the third sub-hypothesis of hypothesis 3. BMI is considered to be celebrated proxy for health which indicates whether a woman is given proper care in a household. Coming to hygiene, which has multiple meaning when it comes to women, the most common one is availability of toilet as a lot of women in the country defecate in public due to unavailability of toilets. This brings the risk of infection and also embarrassment while defecating in public. Hence availability of toilets is taken as a proxy of hygiene which is also one of the important ingredients of woman empowerment. Children education is taken in the study because the women artisans that are taken in the sample does not necessarily have children or are married.

Summary

The chapter discusses various studies in author specific style under content specific sections. The summary of each section is provided in the end which connects the studies to form the argument for hypothesis building. The chapter has three major sections, the first discusses some pioneer studies in the area of microfinance, the next section explains the studies that highlight the nature, characteristics, problems and potential of the Indian artisan sector and the final section tries to list out studies from both microfinance and artisan related literature to build

conceptual relation between microfinance and various aspects from Indian artisan sector like labour migration, export activity and women empowerment. This ends the literature review chapter which explains a wide range of studies related to microfinance, artisan sector, women empowerment etc. which helps to provide direction and form arguments and hypotheses for our study, which is explained in the previous chapter.

Chapter 3

Research Methodology

Chapter Structure

This chapter deals with the methods applied to measure the impact of microfinance lending on different parameters of the artisan sector. The chapter starts with defining few terminologies related to the chapter. It further defines the location of data collection and also explains the size of the sample and type of artisans taken as respondents along with their proportion. As the chapter progresses, it lays down various models to test the hypotheses defined in the first chapter. The study uses a quasi-experimental research design to measure the impact of microfinance lending on the artisan households. It takes 400 artisan household from the Federal State of Odisha in India. The study then uses Propensity Score Matching (PSM) and 1:1 Nearest Neighborhood Matching to divide the entire data set into two groups namely, treatment and control group. In the end of the chapter, it lays down 6 different mathematical models to test the pre-defined hypotheses.

Terminologies and their definitions

Quasi-experimental research designs

Quasi-experimental designs are commonly used when it is not practically or ethically possible to carry out true experiments. Quasi-experimental designs try to mimic true experiments in a non-random setting. However, unlike true experiments, they do not follow random setting but segregate respondents into treated and control groups based on some non-randomized criteria (Thomas, “Quasi-Experimental Design | Definition, Types & Examples.”).

Treatment Group

In experimental research to measure impact or proving causality one out of two equally balanced groups is exposed to some kind of manipulation or intervention in the independent variable. This intervened group is called treatment group in research (Tikkanen, 2017). In the current study the group receiving the microfinance lending becomes the treatment group.

Control Group

Similarly in experimental research, the group which is equally or closely balanced as the treatment group but does not get exposure to any manipulation or intervention in the independent variable is known as control group (Tikkanen, 2017). The current study considers those who did not take microfinance loan as control group.

Propensity Score Matching (PSM)

PSM adjusts the treatment impact for measured confounders in non-randomized studies and is a useful alternative to the commonly used regression adjustment (Stuart, 2010). PSM gives us with the probability of a respondent of getting treated on the basis of some pre-determined factors which affects the possibility of the respondent to get treated known as measured covariates.

Average Treatment Effect (ATE)

This is a method used in experimental researches to establish causality by comparing the averages or means between the treatment group and control group in a randomized environment or in a quasi-experimental setting which mimics a true experiment in a non-randomized environment (Imai et al., 2008). This is mostly used in cases where the dependent variables are continuous in nature.

Nearest Neighborhood Matching

The most common type of matching where one respondent from treated group is paired with the closest respondent from controlled group. Matching is done to ensure that both treated and controlled groups are balanced and act as counterfactual of each other (Stuart, 2010).

Ordinary Least Square Regression (OLS)

It is the most common used regression technique to determine the relationship between a dependent variable and one or more independent variables. It is usually used when the

dependent variable is continuous in nature. It explains the degree of change in dependent variable with one unit change in the independent variable by providing coefficients.

Probit Regression

It is used to make prediction about the success or failure of a dichotomous dependent variable based on some independent variable also called the predictors. In common terms, it determines the likelihood of whether an event will happen or not based on changes in some independent variables which may affect the event.

Ordered Probit Regression

It may happen that sometimes the dependent variable may be a set of events which are lined in a hierarchy. The outcome of the event could be an event out of the set of class which has a particular order and the difference between the consecutive classes are always same. In that case Ordered Probit Regression is useful which determines to which hierarchical class the event will fall based on some predicting independent variables.

Endogeneity

In econometrics, endogeneity refers to a situation where the explanatory variable becomes correlated with the error term of the equation. This may result biased estimates of the data and lead to misleading policy implications. Endogeneity may rise mainly due to three reasons namely, Bi-causality, Omitted variable bias and Measurement Error.

(a) Bi-causality: Bi-causality or simultaneity where the independent and dependent variable both influence each other leading to bias in the key results. Instrumental variable (IV) technique is mostly used to deal with such issues.

(b) Omitted variable bias: The second reason for which endogeneity arises is due to omitted variable bias where the omitted variable acts as a confounding variable between the independent and dependent variable. This leads to correlation of error term with the explanatory variable and ends up with biased estimates.

(c) Measurement Error: In the absence of proper counterfactual event, the regression model may be unable to measure the real impact of the independent variable thus resulting into measurement error of independent variable in the regression equation. This problem and the problem above, both can be dealt by using Experimental or Quasi experimental techniques.

Pseudo R-squared

It is reported slight differently from the typical R-squared. It gives us the likelihood by which a model may explain a dependent variable. Normally pseudo R-squared can be found to smaller than R-squared because it shows likelihood as compared to change or variation.

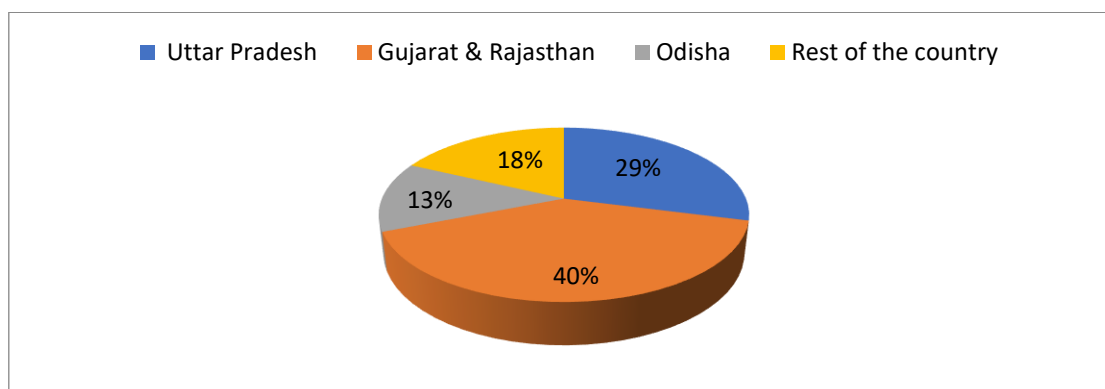
Data Collection Process

The study uses a quasi-experimental research design to measure the impact of microfinance lending on the artisan households. The data for the study is based on primary data collected from the artisans living in the Indian state of Odisha by way of structured schedule. India being a developing nation has a lot of uneven distribution of resources with majority of population living below the poverty line. Further the huge level of microfinance operations in the country and the current socio-economic conditions of artisans make India fit for our study. The reason for selecting Odisha as the place of data collection is as follows:

- As on 31st March 2019, Odisha stands 8th on the basis total Gross Loan Portfolio under Microfinance with loan outstanding to the amount of INR. 2425.028 crores (Status of Microfinance in India, NABARD, 2018-19).
- It is one of the top four states on the basis of number of artisans and contains 13% of the total artisan workforce of the country (Crafting a livelihood, Dasra, 2013), as shown in figure 3.1.

Figure 3.1

Distribution of artisans across states



Note: Sourced from Dasra Report, Export Promotion Council for Handicrafts and Council of Handicraft Corporations and Development Commissioner (Government of India).

Types of Artisans to be taken as respondents

Artisans that are found in Odisha are engaged in making Silk and cotton sarees and other fabric works, brass and bell metal utensils, terracotta crafts, pottery, golden grass and cane work artists, Jute crafts, silver filigree works, applique makers, horn work artists, stone masons, palm leaf painting artists etc.(source: <https://odisha.gov.in/explore-odisha/art-crafts>). This study takes eight major artisan products from the state but excludes products related to precious metals since microloans can hardly fund any entrepreneurial activity related to precious metals. The eight different types of artisans taken for the study are:

- Artisans involved in making bell and brass metal utensils,
- Canvas and palm leaf painting,
- Applique works,
- Stone carving,
- Golden grass crafts,
- Terracotta & pottery crafts,

- Sambalpuri handloom cotton saree and
- Sambalpuri handloom silk saree

Size and Method of Sampling

While calculating sample size, it should be noted that the size of sample increases at a diminishing rate with increase in population and becomes more or less constant at somewhere around 384 when the population reaches to 10,00,000 (Krejcie & Morgan, 1970). The population of artisans across the country is 7 million as per official figures and 200 million as per unofficial figures, with about 13% of them residing only in the state of Odisha (Crafting a livelihood, Dasra, 2013) which makes the population approximately close to 10,00,000 as per official figures and much more than that as per unofficial figures.

For studies related microfinance using PSM doesn't clearly define the adequate sample size required for studies. Further the sample sizes across such studies vary among each other to great extent. For example; Rajbansi et al. (2014), in their study took 703 sample from villages of eastern Nepal to measure the impact of microfinance lending on poverty while addressing the difference between claims made by practitioners and researchers. Similarly, Mazumdaer & Lu (2015), took 500 respondents from villages of Bangladesh to access the impact of micro-lending on rural livelihood. However, Weber and Ahmad (2014) took 90 samples in total to run PSM in his study which tries to establish relationship between loan cycle and level of empowerment among women borrowers of microfinance. This indicates that there is no specific sample size for microfinance related study using PSM. However, one thing can be observed from the studies that the ratio between treatment and control variable is not less than 1:1.5 or vice versa. This is necessary so that the quality of matching becomes better as while matching, one respondent from a group has option to get matched with best and closest respondent out of multiple respondents available from another group.

The sample sizes for similar kind of studies carried before are also given below:

Table 3.1*Sample size of similar studies*

Sl.no.	Study	Sample Size
1.	Rajbanshi et al. (2014)	703
2.	Mazumder & Lu (2015)	500
3.	Weber & Ahmad (2014)	90

Considering the principles of Krejcie and Morgan (1970) and after looking at the sample sizes of the previous studies, we decided to collect sample from 400 artisan households for the study so as to increase the power of the study. For the consistency and comparability of data, we took F.Y. 2015 as the base year for historic data as it is the year of launch of Pradhan Mantri Mudra Yojana (PMMY), a government-initiated microfinance scheme which aims to facilitate and regulate the microfinance lending and also lists the artisan sector as a potential beneficiary sector of microfinance. Since 2015 is the base year, we selected only those treated respondents who got microfinance lending on or after F.Y 2015. All the historical data collected from both the treated and non-treated respondents were taken as on F.Y 2015. For collecting the data and choosing the respondents we plan to visit those districts in a particular state where the artisans are found in clusters and take equal sample from different types of artisans based on their nature of work found and call it a ‘Product Group’ by using the following formula:

Product Group size = 400 Respondents ÷ Types of Artisans in the sample

The study takes 8 types of artisans in the study which divided by 400 respondents gives us the Product group size as 50. We plan to take equal number of representations from each type of artistic work because their proportion in the total artisan’s population is not known. After that, we will stratify the locality where a particular group of artisan shops or houses are present and select few strata. From that we can collect the group respondents by using

systematic sampling by visiting every 'n' th house, where, $n = \text{Number of houses or shops in a stratum} \div \text{Product Group Size (i.e., 50)}$.

However, it must be ensured that in case of treated respondent, the respondent selected should be treated on or after F.Y 2015. In case, the respondent is found to be treated and that to before the base year, then we exclude him/her and move to the house or shop right next to it.

Field Work

The data is collected in the winters of year 2021 from 400 artisan household by way of structured schedule from eight different locations spread across 7 districts over the federal state of Odisha in India. Out of 400 artisan household, 150 were found to be borrowers and 250 non borrowers of microfinance lending. Non responses were less due to schedule way of data collection and hence not recorded or included in the sample of 400. The field locations for collecting data from the eight artisan clusters is discussed one by one below along with highlighting the districts that contain the artisan clusters.

The artisans in Odisha regardless of their religion or caste, relates their work with some temple culture, especially to the Jagannath Temple in Puri district of Odisha. Even across the country the practice has been more or less the same. The garments, sculptures, backdrops, terracotta etc. most of which are connected to some temple culture. The places visited for data collection are discussed below one by one on the basis of the product they deal along with their specific features and significance, the composition and structure of the village etc.

Figure 3.2 shows the districts in a map of Odisha downloaded from www.mapsofindia.com where the location of the field investigation is present. The map has been edited to mark the locations of the districts where the data collection has to take place. The district of Puri holds two places of data collection. Rest of the districts i.e. Nayagarh, Jajpur, Koenjhar, Cuttack, Bargarh and Subarnapur has one location each for data collection.

Figure 3.2

District wise field location for data collection



Note: Sourced from www.mapsofindia.com

(a) Bell and brass metal utensils: The first place that was visited for data collection was a village named Kantilo from Nayagarh district. The Kantilo village of Nayagarh district is home to artisans engaged in making of Bell and Brass Metal Utensil and sculptures. The village is around 35 kms distance from the district headquarters. The significance of the place links to the Nilamadhav Temple in Kantilo which is believed to be the first earthly adobe of Lord Jagannath, an important deity in Hinduism who is currently situated and worshipped in the famous Jagannath temple in Puri district. The artisans relate themselves to the same culture

which can be widely seen in their products and sculptures. Coming to the data collection part, the settlements of the village was in a circular formation mostly around the Temple and a main road connecting it to the district headquarters dividing it into two parts with temple falling on one side of it. The artisans there mostly belong to the Maharana caste who are considered as Other Backward Classes (OBC) as recognized by the GOI. The village was full of small workshops called “Shala” where the artisans used to work. The village market was also full of shops selling products made with bell and brass metals, however they were mostly dealt by traders and very few artisans were involved in such activities. So, the best way to visit the artisans was to either meet them at their home or meet them in the Shalas where they use to work. But the nature of work is laborious and risky which needs focus and it would have been inconvenient to approach the artisans while they were working. So, it was decided to meet them at their residence which was also a difficult task since we got very little time to interview them as in rural areas they sleep early and the rest of the time they use mostly for doing other household chores and reliving fatigue of the work they do.

There were 17 alleys in total in the village excluding the alleys intersecting the main alleys. Every alley has around 40 houses on an average. We started from the 3rd alley and selected alleys in multiple of 3 till we get 5 alleys for our data. Then in each alley we visited every 4th house to collect data which makes it 10 household data collected from each selected alley. Doing it for five selected alleys gave us our target response from one group i.e., 50 which took us 5 days to complete as we had less time when the artisans were available. The number of treated respondents found were 17 and rest 33 were the controlled respondents. There were 4 non responses in total 3 of which were due to people getting microfinance loan before FY 2015 and last 1 respondent decided to stop in between while providing the responses. Figure 3.3 shows few pictures taken in the field with the Bell and Brass Metal artisans of Kantilo village of Nayagarh district.

Figure 3.3

Pictures with Bell and Brass Metal Utensil Artisans of Nayagarh district



Note: Sourced from field survey

(b) Canvas and Palm leaf painting: The second place selected for data collection were Raghurajpur and Dandasahi village in Puri district. These two villages are adjacent to each

other and people widely known the entire area as Raghurajpur village because of it being famous for canvas and palm leaf paintings known as Patachitra. However, both Raghurajpur and Dandasahi are engaged in such painting activities since centuries. These paintings are mostly dedicated to Lord Jagannath and events or characters surrounding it. The Patachitra holds its significance during the famous Rath Yatra of Lord Jagannath in Puri district where the deities leave the temple to visit the Mausi Maa Temple for 7 days. It is believed that, days before the starting of the Rath Yatra, the deities get fever and are quarantined for 7 days during which the famous Patachitra Painting of the deities are kept before the devotees. The data collection started from Dandasahi and followed up to Raghurajpur village. There were no non responses among the selected respondents. Both the villages are adjacent to each other while one village ends the other starts. There were around 300 households in total and they were situated on both sides of a single road. This also made the data collection easier. Every 6th house was visited starting from the houses on left side of the road and coming all the way back on the right side of the road. It took 2 days to complete the data collection of 50 respondents, one from each selected household. Out of 50 respondents, 22 belonged to households who are microfinance borrowers and were taken in the treated group and the remaining 28 respondents were put into the controlled group. Figure-3.4 contains few pictures taken during the field study carried out among the canvas and palm leaf painting artisans in Raghurajpur and Dandasahi Village of Puri district.

Figure 3.4

Pictures with Canvas and Palm leaf painting artisans of Puri district

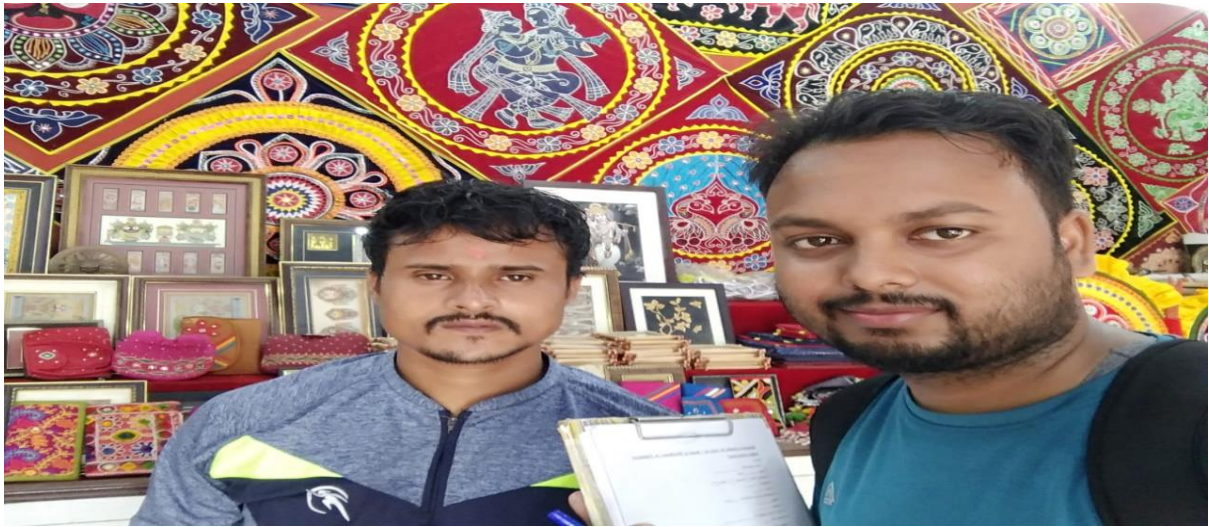


Note: Sourced from field survey

(c) Applique works: The third place that was chosen for the data collection was Pipili town in Puri district. It is 36 Kms from the district headquarters and is situated between Bhubaneswar Puri Road. The town of Pipili is famous for Applique works locally known as “Chandua” and is native home to artisans who are engaged in making and selling such artifacts. The artisans mostly live in a village called Darjisahi in Pipili town. The work mostly involves needle work on colorful cloth, making intricate designs with beads and small mirrors which enhances the look. Like the previous two types of artisans, the artisans of Pipili also have significance related to the Jagannath Temple of Puri. As per tradition the Chandua of Pipili are used in the temple for decoration. The designs of the appliques are heavily inspired by the Jagannath culture. While the artisans in Pipili includes both Hindus and Muslims, yet regardless of their religion they make and sell appliques with designs heavily inspired by the Jagannath Culture. The town falls in between the main road of Bhubaneswar (State capital) and Puri (Major Tourist centre) hence is quite accessible which is why it attracts a lot of tourists both domestic and foreign while they were on their way to Puri. Most of the shops selling the appliques is owned by the artisans. The shops are situated on both the sides of the main road. It was decided to visit the shops of the artisans for the purpose of data collection, rather than the residences. There are around 250 shops dealing with appliques and other products of needle work. Every fifth shop was visited and collected household data from 50 respondents out of which 17 were treated respondents and 33 respondents were kept in controlled group. There were 12 non responses out of which 7 were those who had taken loan before FY 2015 and rest 5 either walked out in between of totally denied to provide data. It took 2 days to collect data from the desired size of 50 respondents. Figure-3.5 consists of artisans of applique works from Pipili town of Puri district.

Figure 3.5

Pictures with Applique work Artisans of Puri district



Note: Sourced from field survey

(d) Stone Carving: Lalitagiri village from Cuttack district was the fourth location for data collection. The artisans residing in the village of Lalitagiri are engaged in stone carving works, making statues and boards for home and temples. Lalitagiri is also famous for its Buddhist sites and the stone carvings reflects it as well. Most of the carvings found are of either related to gods and goddesses in Hinduism or Buddhism. The village is around 60 kms from the district headquarters. Idols and carvings of deities like Hanuman, Krishna, Durga, Saraswati, Laxmi, Jagannath, Vishnu, Buddha etc. can be found in large numbers in the village. A migrated group of people from the same village can be found in Santarapur in Bhubaneswar (state capital), doing same work under various traders who deal with such artifacts. Most of the artisans found in Lalitagiri are mostly OBC and belong to Hindu religion. The village is in a circular structure with houses around it and behind the houses a big ground was present with many small workshops where artisans were engaged in stone carving work. There were approx. 150 workshops which were mostly attached to the backyard of the house. Every 3rd workshop was visited to collect 50 responses with zero non responses. The presence of workshops in a common backyard of the village made it easier for the data to be collected the given size of 50 responses within 2 days out of which 18 respondents fell into the treated group and rest 32 fell in to the controlled group. Figure-3.6 shows the pictures taken during the data collection in Lalitagiri village with the stone carving artisans.

Figure 3.6

Pictures with Stone Carving Artisans of Cuttack district



Note: Sourced from field survey

(e) Golden Grass Crafts: The fifth location for the data collection on golden grass craft artisans were Garhmadhpur and Antia village of Jajpur district. Jajpur being the ancient capital of Odisha preserves a lot of cultural and historical significance out of which the Garhmadhpur village is one. The village holds ancient Palaces, forts and temple along with traditional art of golden grass crafts. The crafts are mostly made by women of the households. The male members are mostly engaged in agriculture and sometimes help the women artisans in collecting the golden grass which grow beside the water bodies. This golden grass locally known as “Kaincha” is used in making beautiful crafts like mattress, pots, baskets, hats, intricate show pieces etc. Antia village which is around 5 kms from Garhmadhpur village also shares the same skills when it comes to craft making from golden grass. The data collection started from Antia village where 25 responses were collected out of around 80 artisan households. The artisans of Antia were mostly coming under Scheduled Caste (SC) as recognised by GOI and few OBC. They claimed to have learned the art from their ancestors who learned it from the artisans of Garhmadhpur who migrated to their village years ago. Out of 25 responses, 9 were treated with microfinance loan while 16 were falling under the controlled group. There were 3 non responses as well. Then from Garhmadhpur village the rest 25 respondents were collected out of around 100 artisan households. The artisans found were majorly OBC’s and few belonging to the general or open category. Out of 25 selected households 12 were found to be of treated group and rest 13 were from the controlled group. There were zero non responses. The total number of desired responses of 50 was reached with 21 respondents belonging to treated group and 29 respondents to controlled group. The major occupation of the two villages were mostly agriculture and only few households were engaged in artisan related and that too as a part time work. The nature of the product which requires a particular type of grass makes it majorly a seasonal work due to unavailability of golden grass in all seasons. Due to the handful of artisan households present in both the villages and scattered

all over the village, made it difficult for data collection. It took 4 days to complete the data collection in both the villages. Figure 3.7 shows the pictures of Golden Grass artisans of the four villages in Jajpur district.

Figure 3.7

Pictures with Golden Grass Artisans of Jajpur district



Note: Sourced from field survey

(f) Terracotta & Pottery Crafts: The 6th location for data collection was Haladharpur village of Keonjhar district which is famous for the terracotta and pottery craft artisans that reside in the village. It is located around 36 kms of distance from the district headquarters. Terracotta is one kind of pottery work where artisans make various decorative pieces with clay like vases, animal structures, idols, dolls etc. Like other artisans this group of artisans were also influenced by temple culture. The horses and few other crafts made by the Terracotta artisans of Haladharpur are used in rituals in the famous Tarini Temple of Ghatagaon village which is at 10 km distance from Haladharpur village. It is believed that the art developed initially around the temple and later got settled in present day Haladharpur village. The artisans mostly belong to SC and OBC category and very few are from general category. There are around 160 artisan household in Haladharpur village whose primary occupation is terracotta and pottery. Few other sections of the village are also involved in agricultural activities and dairy farming. However, the artisans cluster is situated in the eastern side of the village in large numbers which made the data collection easy. The structure of the settlements was as such, it made stratification difficult, hence only systematic sampling was conducted by collecting data from every 5th household that we walked through. There were 7 non responses, mostly due to having microfinance loan before FY 2015. Out of the 50 collected responses 15 were falling into the treatment group and rest 35 respondents were falling into the controlled group.

Figure 3.8

Pictures taken with Terracotta artisans of Keonjhar district



Note: Sourced from field survey

(g) Sambalpuri Handloom Cotton Saree: The next location for data collection was four villages of Bargarh district where artisans are engaged in weaving of famous Sambalpuri cotton saree. The Sambalpuri sarees are of two types i.e., cotton and silk sarees. They derived their name from the Sambalpur district of Odisha from where they originated. However, post the division of the Sambalpur district the cotton saree hub falls in Bargarh district and the Silk saree hub in Subarnapur (also called Sonepur) district. In Bargarh district the cotton handloom saree hub is located in 4 villages, named Barpali, Khuntali, Bandhapali and Govindpali. They are 21 kms, 43 kms, 22 kms and 2 kms from the district head-quarters respectively. Barpali has the highest number of weaver artisans engaged in making of Sambalpuri cotton saree, followed by Khuntali, Bandhapali and Govindpali. The Sambalpuri Handloom cotton saree is quite famous across the country and is worn by lot of eminent personalities. The speciality of this hand-woven saree is the tie and dye method used to make the saree and the intricate designs that are made through tie and dye method which lasts for a long time without fading. Since the villages are far from each other, 20 responses from Barpali and 10 each from the rest three villages were collected because other three village are almost close to each other in terms of number of artisans and Barpali is almost double of these villages in terms of number of artisans. There were 6 non responses 2 of which took loan before FY 2015 and other 4 decided not to participate in the survey. It took 6 days to complete the data collection since it involved a lot of travelling every day from the district head quarter. Out of the total 50 responses collected only 14 were found to be falling under treatment group and 36 were falling under the control group. The artisans mostly belonged to Meher community who are categorised as OBC's.

Figure 3.9

Pictures taken with Sambalpuri handloom cotton saree artisans of Bargarh district



Note: Sourced from field survey

(h) Sambalpuri Handloom Silk Saree: The last location for the data collection was Sagarpali village of Subarnapur district where the artisans are weavers engaged in making the famous Sambalpuri handloom silk saree. The process of making this saree is same as making the cotton saree of Bargarh district along with similar designs. The only difference is that it is weaved with silk unlike with cotton in Bargarh district. Both Sambalpuri silk and cotton saree are wore by people in Odisha widely. It is also worn by people outside the state and even have a demand in the export market due to their intricate and original designs along with the hand style tie dye weaving which increases its commercial value. The silk saree is mostly costlier than the cotton sarees merely due to the nature of raw material and its cost. Sagarpali village is 45 kms away from the district headquarters of Subarnapur district. The village of Sagarpali has around 250 households who directly engage in weaving activity. The village structure was L shaped with houses on both sides of the village road and no other intermediary alley was there which made the data collection easier. It took 3 days to collect the data from the village including the travel time from the district headquarters every day. Most of the artisans belong to Meher community who are categorized as OBC's. Out of the 50 responses 26 were found to be treated respondents and rest 24 were found to be falling under the controlled respondents and there were zero non responses.

Figure 3.10

Pictures taken with Sambalpuri handloom silk saree artisans of Subarnapur district



Note: Sourced from field survey

Proposed Model

For this study to provide proper results, it was important to deal with possible endogeneity and selection bias that could arise out of the model. To know whether the microfinance lending has any impact on the above indicators, it became necessary to create a counterfactual event which was more or less same as that of the original, while the former didn't get the lending and the later did. For this we used Propensity Score Matching (PSM) technique, popularly known as PSM and Average treatment effect (ATE) to determine the effect of the treatment. "PSM adjusts the treatment impact for measured confounders in non-randomized studies and is a useful alternative to the commonly used regression adjustment" (Stuart, 2010). PSM gives us with the probability of a respondent of getting treated on the basis of some pre-determined factors which affects the possibility of the respondent to get treated known as measured covariates. The expression is as follows:

$$e(x) = P(Z=1|X)$$

where, x refers to propensity score, P refers to probability, $Z = 1$ is the treatment indicator having value 1 for the treatment group and 0 for the control group, the " $|$ " symbol refers to conditional on, and X is a set of observed covariates (Mazumder & Lu, 2015). The motive behind this process of matching was to create two balanced groups out of which one is a control group and another is a treatment group based on some pre-determined covariates. The covariates (X) used for determining the scores are, Level of education, Age, Gender, Past Income level, family size (Mazumder & Lu, 2015) and Distance from nearest micro-lending office in km as on the financial year 2015 since it is taken as the base year for collection of historic data. After getting the probability scores it was proposed to use 1:1 nearest neighborhood matching which is the most commonly used matching technique in studies using PSM. In the next step, progress was made towards the original model for testing the hypotheses. Six different models were taken i.e., first one for hypothesis 1, second and third for the two

sub-hypotheses under hypothesis 2 respectively and fourth, fifth and sixth for the sub-hypotheses under hypothesis 3 respectively. For this, the selection for microfinance loan which is a binary variable with ‘1’ for getting loan or treated respondent and ‘0’ for the control respondent, remains as the independent explanatory variable for all the six models. The following models are depicted below:

Model 1: - Here the study tries to test the first hypothesis which tries to establish a causal link between micro-lending and labor migration from rural to urban areas among the artisan’s household. Since the dependent variable is a binary one a probit model is used, i.e., for those who migrate from the artisan household are coded as ‘1’ otherwise ‘0’. The empirical model is as follows:

$$E(LM|ML) = P(LM=1| ML)$$

Where, “LM” refers to labor migration, “ML” refers to microfinance lending.

Model 2: - This model tries to test the first sub-hypothesis under hypothesis 2 which tries to establish a causal link between micro-lending and the artisan household which are engaged in export activities. Engagement in export by the household is taken as the dependent variable which is a binary variable with those engaged in export are coded ‘1’ while those who doesn’t are coded ‘0’. Since the dependent variable is categorical, a probit model is used which is given below:

$$E(EA|ML) = P(EA=1| ML)$$

Where, “EA” is engagement in export activity, “ML” refers to microfinance lending.

Model 3: - This model tries to test the second sub-hypothesis under hypothesis 2 which tries to establish a causal link between micro-lending and level of sales from export activity by

artisan households. This is similar to previous one except here the study takes the level of sales through export in INR as dependent variable rather than respondents engaged or not engaged in export activity. Since level of sales from export is a continuous variable, OLS regression model is used to test the hypothesis. The model is as follows:

$$SEA = \alpha + \beta_1 ML + u$$

Where, “ α ” refers to the intercept of the equation, “SEA” is sales in amount (INR) from export activities, “ML” refers to microfinance lending and “ u ” is the residual or the error term of the equation.

Model 4: - This model tries to test the first sub-hypothesis under hypothesis 3. This model tries to test whether micro-lending has any impact on women heading an entrepreneurial activity in an artisan household or not. The dependent variable being categorical in nature, i.e., women heading the family entrepreneurial activity is coded as ‘1’ and men heading the same is coded ‘0’, again a probit model is used which is given below:

$$E(WH|ML) = P(WH=1|ML)$$

Where, “WH” refers to women heading an entrepreneurial activity and “ML” refers to microfinance lending.

Model 5: - For the second sub hypothesis under hypothesis 3, probit model is used again with women’s participation in decision making in a household as dependent variable. In an artisan household if a woman actively participates in the decision making then it is coded it as ‘1’, otherwise ‘0’. The model is as follows:

$$E(WPDM|ML) = P(WPDM=1|ML)$$

Where, “WPDM” refers to women’s participation in decision making and “ML” refers to microfinance lending.

Model 6: - The third sub hypothesis under hypothesis 3 hypothesis tries to test the impact of micro-lending on women’s health and hygiene. Health and hygiene of the women artisans is

depicted empirically in the model by taking Body Mass Index as proxy for health and availability of toilets as proxy for hygiene where the level of health and hygiene is the dependent variable. For those having BMI within healthy range and available toilets will be coded as '2', if either of the two indicators is present then '1' and if none are present then '0'. Since the dependent variable is categorical and has a hierarchy as well, an Ordered Probit model is used for the analysis. The model is given below:

$$HH = \alpha + \beta_1 ML + u$$

Where, “ α ” refers to the intercept of the equation, “HH” is health and hygiene level, “ML” refers to microfinance lending and “u” is the residual or the error term of the equation.

Software used

The study used 3 software for storing, sorting and analyzing the data collected by way of structured schedule. The data has been stored and sorted in MS Excel. The matching process has been done in R programming and finally all the rest analysis has been done in Stata 13, the results of which are presented and briefly interpreted in the next chapter.

Chapter 4

RESULTS

Chapter Structure

This chapter contains the results of the analysis done with the collected data and the meaningful interpretation related to whether microfinance loan has any impact on the pre-determined parameters within the artisan sector. The chapter starts with summarizing the data collected with number of treated and controlled respondents from different locations of data collection. Further, it advances with matching results of the data by summarizing the respondents' data post matching. To ensure that the matching is ideal, it lays down the results of quality estimates of the matching which includes t-tests and few graphical representation of the data pre and post matching. The chapter then advances towards the models defined in the previous chapter to test the formulated hypotheses. It presents the results of the probit and OLS models and interprets them to make meaningful insights. Impact of microfinance was tested on labor migration, export and women empowerment and was found to be significantly affecting the above parameters in Indian artisan sector.

Summarization of Collected data

The first step in the results chapter is to summarize the collected data from various locations. A brief profile of the 400 respondents has been provided location-wise along with their nature of work and whether they fall into treated or controlled group before matching. Further the demographic summary of the 400 artisans in the study has been presented.

Table 4.1*Summary of Types of Artisans on the Basis of Products*

Sln.	Type of Product	Location	Number of treated respondents	Number of controlled Respondents	Total
1.	Bell & Brass Metal Utensils	Kantilo (Naygarh District)	17	33	50
2.	Canvas and Palm leaf painting	Dandasahi & Raghurajpur (Puri District)	22	28	50
3.	Applique works	Pipili (Puri District)	17	33	50
4.	Stone Carving	Lalitagiri (Cuttack District)	18	32	50
5.	Golden Grass Crafts	Garhmadhpur & Antia (Jajpur District)	21	29	50
6.	Terracotta & Pottery Crafts	Haladharpur (Keonjhar District)	15	35	50
7.	Sambalpuri Handloom Cotton Saree	Khuntpally, Bandhpally, Barpally & Gobindapally (Bargarh District)	14	36	50
8.	Sambalpuri Handloom Silk Saree	Sagarpally (Sonepur District)	26	24	50
Total			150	250	400

Note: Sourced from author's own compilation from collected primary data

Table 4.1 shows the summary of the artisan respondents on the basis of type of products they deal with. Each type of products consists of total 50 respondents. Out of total 400 artisans only 150 were found to be treated and rest 250 fell into controlled group. Artisans dealing with the Sambalpuri silk handloom saree were the one having highest treatment rate (52 %) with 26

out of 50 respondents being treated and the Sambalpuri cotton handloom saree artisans has the lowest among all (28%) with 14 out of 50.

The next process was to summarize the key demographic variables pre and post matching. This is being done to provide a brief idea about the data collected and the data available after matching.

Table 4.2

Descriptive summary of the Data before Matching

Variable	Obs	Mean	Std. Dev.	Min	Max
Age (Years)	400	42.78	12.53	20	81
Years of Education	400	8.47	3.60	0	18
Family size	400	5.65	2.65	1	25
Distance from Nearest Micro-lending office (Kms)	400	6.51	5.17	1	35
Income range (FY 2015)	400	2.63	1.65	1	10
Income range (FY 2020)	400	3.6	1.89	1	10
Height (cms)	400	153.04	70.80	120	184
Weight (Kgs)	400	52.99	10.11	35	95
Size of loan (INR) (Only borrowers)	150	75803.33	108645.86	10000	500000
Rate of interest (%) (Only borrowers)	150	17.02	6.676	14	30

Note: Sourced from author's own compilation from collected primary data

Table 4.3*Descriptive summary of the Data after Matching*

Variable	Obs	Mean	Std. Dev.	Min	Max
Age (Years)	300	41.65	11.81	20	78
Years of education	300	8.85	3.478	0	18
Family size	300	5.47	2.56	1	25
Distance from Nearest Micro-lending office (Kms)	300	6.29	4.64	1	18
Income range (FY 2015)	300	2.66	1.65	1	10
Income range (FY 2020)	300	3.72	1.913	1	10
Height (cms)	300	153.18	81.52	120	184
Weight (Kgs)	300	53.34	10.01	35	95
Size of loan (INR) (Only borrowers)	150	75803.33	108645.86	10000	500000
Rate of interest (%) (Only borrowers)	150	17.02	6.676	14	30

Note: Sourced from author's own compilation from collected primary data

Table 4.4*Gender distribution of the respondents*

Pre-Matching (n=400)			Post -Matching (n=300)		
Gender	Treated	Control	Gender	Treated	Control
Male	96	172	Male	96	98
Female	54	78	Female	54	52
Total	150	250	Total	150	150

Note: Sourced from author's own compilation from collected primary data

Table 4.2 and 4.3 above presents the descriptive statistics of the demographic variables in the data pre and post matching. Pre matching sample was 400 and post matching the sample became 300. While there are not major differences, income of FY 2020, size of loan and rate of interest can be found to vary largely across both the tables. This could be the result of the increased proportion of treated variables in the sample post matching. Discussing few other variables, the minimum age is 20 for both pre and post matching while maximum age is 81 for pre matching and 78 for post matching. Years of education varies from 9 to 18 in both pre and post matching samples. Minimum and maximum range of family size, Income (FY 2015 & FY 2020), height and weight remain same across both the tables. Gender being a categorical variable is represented in Table 4.4 separately in form of its distribution across genders both pre and post matching period.

Quality checking of the Matching Process

The second step was to ensure the quality of the matching done, before moving into testing of our hypothesis with the original regression models (Caliendo & Kopeinig, 2008). For checking the quality of the matching, independent sample t-test was applied (Ross et al., 2017) on the confounding variables or covariates among borrowers and non-borrowers both pre and post matching. Few scatter plots were also used to support the matching process. Table 4.4, shows

the results of t-test which was done to ensure the quality of matching. Before matching the sample was 400 and after matching it became 300. For PSM to work, the difference between borrowers and non- borrowers must be very less. The matching process aims to reduce the difference between the treated group and control group on the basis of pre-determined covariates. In table 4.5 t-test was applied to ensure whether there is any significant difference between the borrowers and non-borrowers on the basis of covariates namely, Age, Years of Education, Family size, Income FY 2015 and Distance from nearest Micro-lending office, both pre and post matching. The results suggests that there is no significant difference among the covariates in treated group and control group after matching. Further, the mean differences post-matching is comparatively less as compared to mean differences of pre-matching among all the covariates. The pre-matching results shows us that age has significant difference across both groups which became insignificant post matching and the mean difference also decreased as a result of matching. Rest all covariates though were not having any significant difference even before matching, were found to have lesser mean difference across both the groups post matching.

Since one of the covariates i.e., Gender is a categorical variable and t-test might not provide with proper insight about whether there exists significant difference among treatment group and control group on the basis of gender. Hence a Chi-Square test of association was used to see whether there exists any difference among the borrowers (treatment group) and non-borrowers (control group) on the basis of gender, both pre and post matching. Table 4.6, depicts the results of the chi-square test which suggests that there is no significant difference among treatment group and control group on the basis of gender both pre and post matching.

Table 4.5*Results of t-tests for Ensuring Quality of Matching*

Covariates	Comparing Borrowers & Non-Borrowers of pre-matching sample (n=400)		Comparing Borrowers & Non-Borrowers of post-matching sample (n=300)	
	t-val	Mean diff	t-val	Mean diff
Age	2.463** (0.0142)	3.168	1.243 (0.2150)	1.693
Years of Education	-1.497 (0.1351)	-0.556	0.166 (0.8684)	0.067
Family Size	1.394 (0.1642)	0.381	0.429 (0.6685)	0.127
Income F.Y 2015	0.094 (0.9253)	0.016	0.456 (0.6489)	0.087
Distance from nearest micro-lending office	0.589 (0.5561)	0.315	-0.099 (0.9209)	-0.053

Note: 1. *** p<.01, ** p<.05, * p<.1;

2. Figures in the brackets are the p-values of the respective covariates.

Table 4.6*Results of Chi-Square test for Ensuring Quality of Matching (For Gender)*

Indicators	Pre-Matching	Post-Matching
Pearson Chi-Square	0.977	0.058
Degrees of Freedom	1	1
P-value	0.323	0.809
Number of respondents (n)	400	300

Note: *** p<.01, ** p<.05, * p<.1

Few Line and Bar graphs are also used to depict the spread of covariates both pre and post matching. Since the treated group of 150 respondents remains same both before and after matching, in the line graph the line of pre and post matching treated group overlap with each other in all the cases. The control group of 250 respondents before matching can be seen as having more fluctuations in the line graphs and being distant from the treated respondent's line in all cases as compared to the control group of 150 after matching. This means that the average distance of control respondents from the treated respondents has reduced after matching. The line and bar graphs are presented below for a better understanding.

Figure 4.1

Age of treatment and control group (pre and post matching)

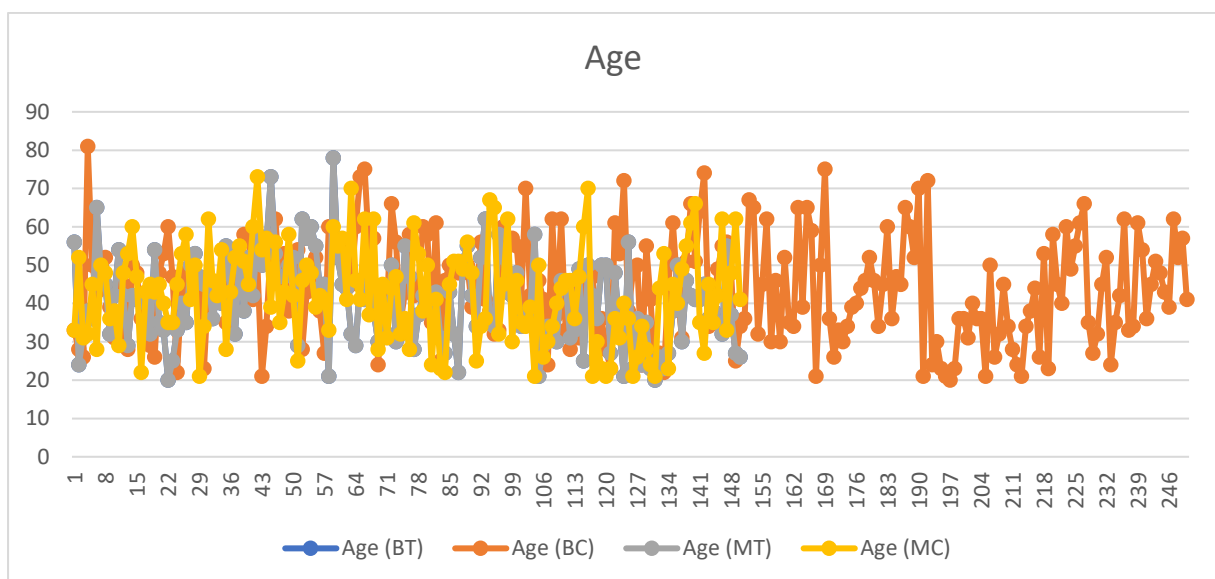


Figure 4.2

Years of education of treatment and control group (pre and post matching)

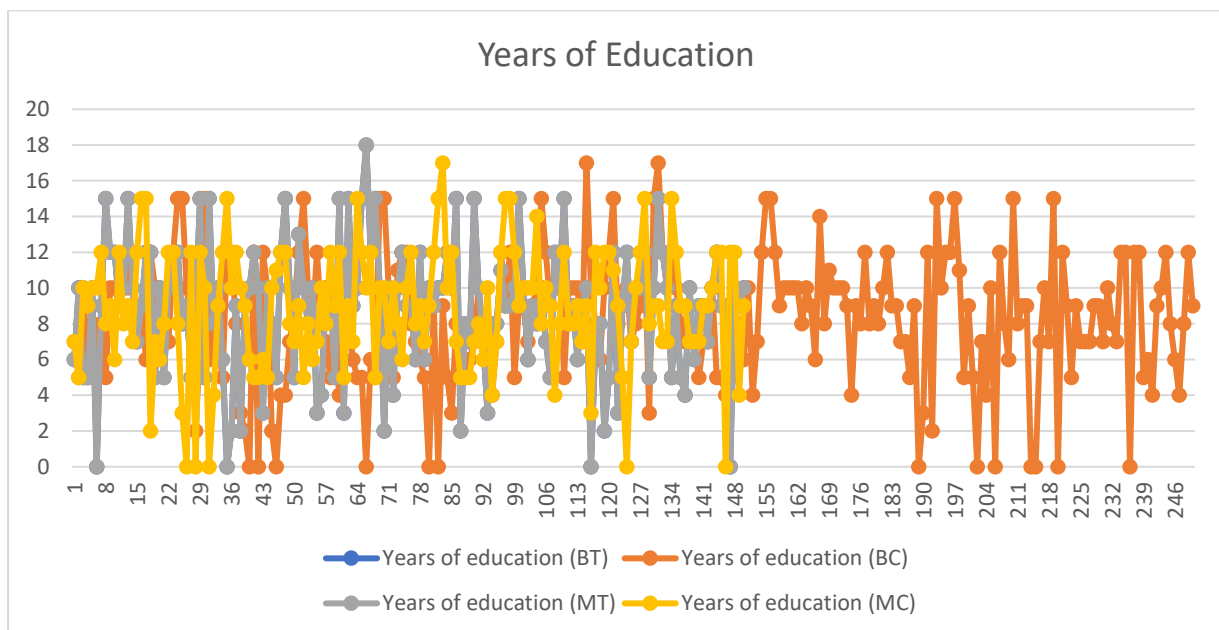


Figure 4.3

Family size of treatment and control group (pre and post matching)

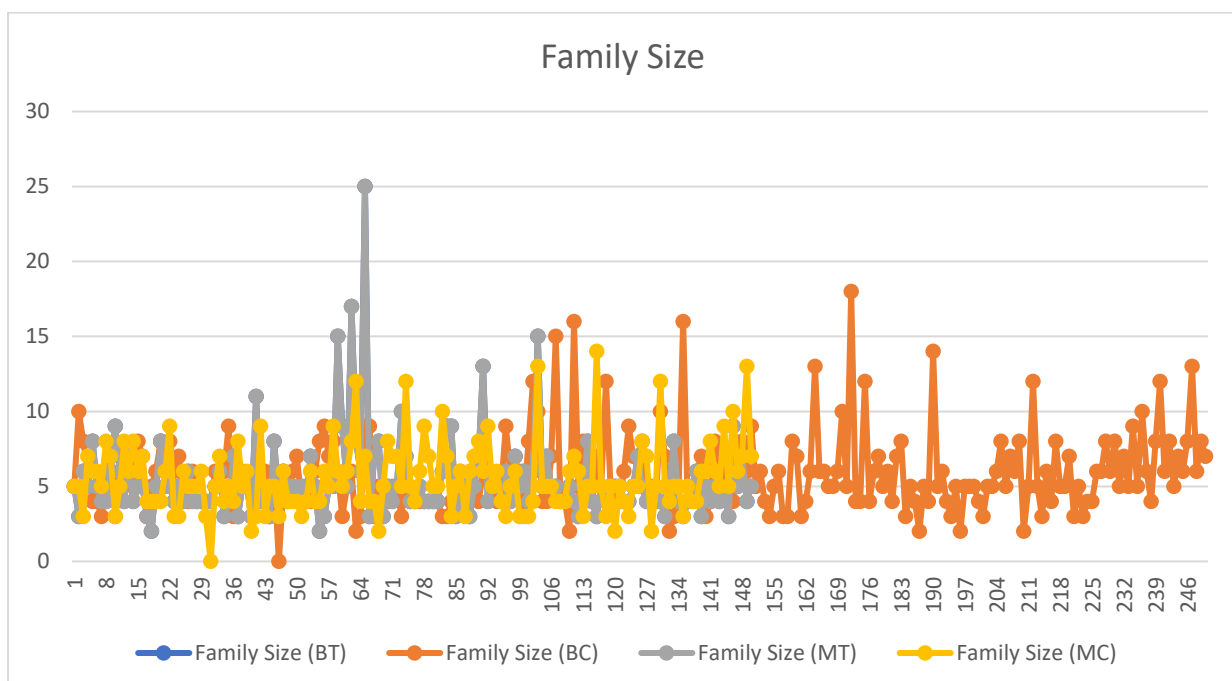


Figure 4.4

Income for Financial year 2015 of treatment and control group (pre and post matching)

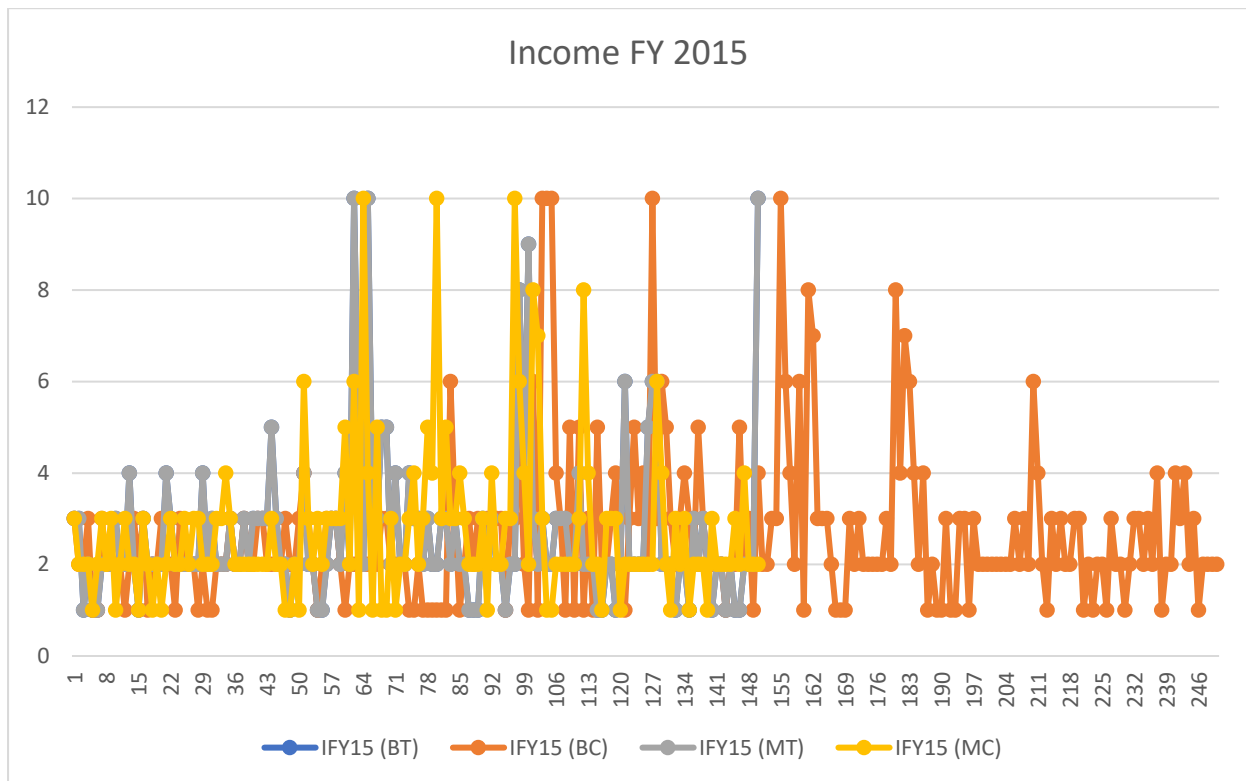
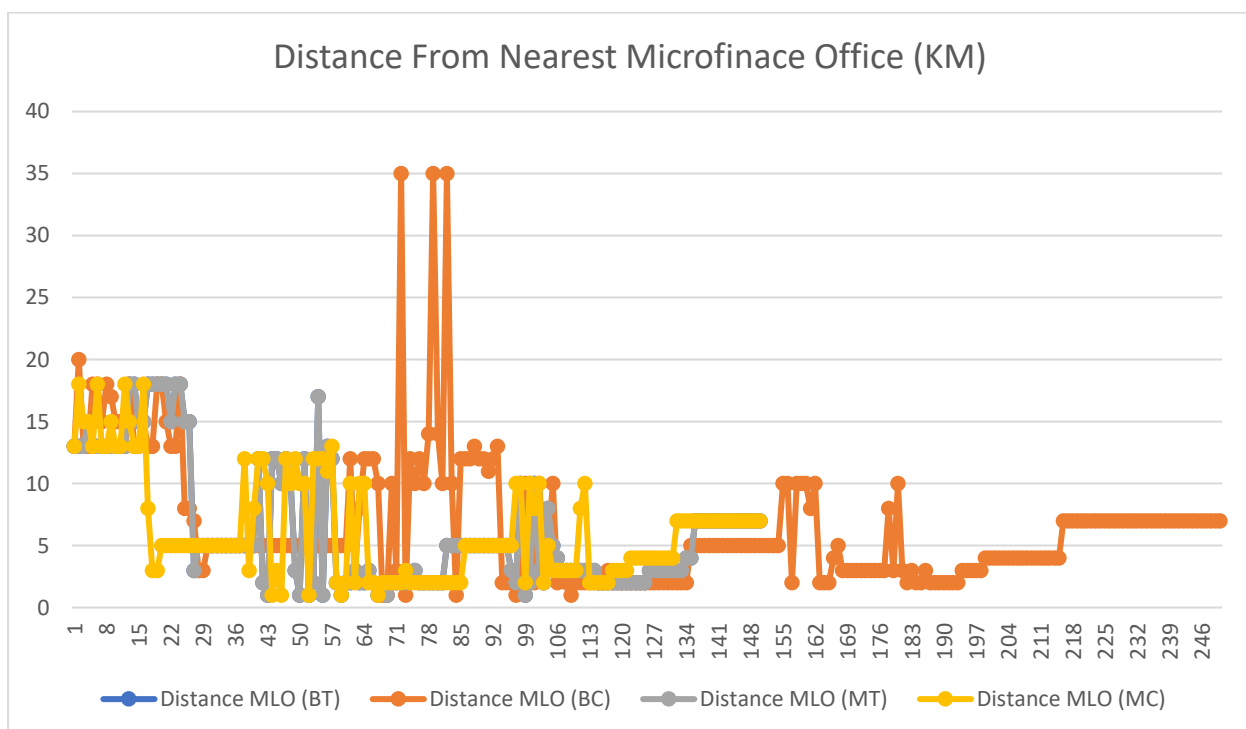


Figure 4.5

Distance from Nearest Micro-lending office of treatment and control group (pre and post matching)



In the above figures i.e., 4.1 to 4.5, shows the spread of the respondents on the basis of covariates where,

- ‘BT’ refers to Before Matching Treated respondents and marked blue in color,
- ‘BC’ refers to Before Matching Controlled respondents and marked red in color,
- ‘MT’ refers to After Matching Treated respondents and marked grey in color and
- ‘MC’ refers to After Matching Controlled respondents marked as yellow in color.

It can be observed that the blue and grey lines in the line graph overlap with each other which is obvious as the respondents in treatment group before and after matching remains same. Further it can be seen that the yellow lines are much closer to the blue and grey lines as compared to the red lines which means that the matching has reduced the average distance of the covariates among the treatment and control group.

Further, Bar graphs are also used to showcase the average values of the covariates both before and after matching. Figure 4.6, 4.7, 4.8, 4.9 & 4.10 presents the bar graphs showing the averages of treatment and control group both before and after matching. Here also the terms used for distinguishing between treatment and control group and pre and post matching groups are as follows:

- ‘BT’ refers to Before Matching Treated respondents,
- ‘BC’ refers to Before Matching Controlled respondents,
- ‘MT’ refers to After Matching Treated respondents and
- ‘MC’ refers to After Matching Controlled respondents.

Figure 4.6

Average age of treatment and control group (pre and post matching)

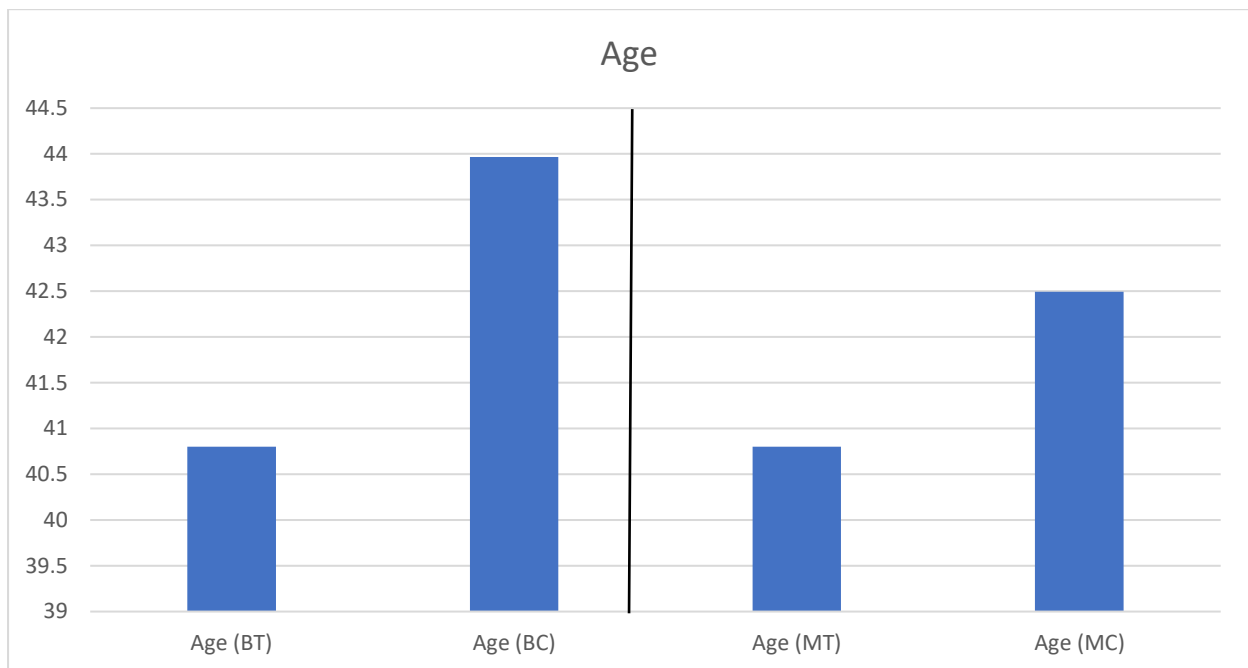


Figure 4.7

Average years of education of treatment and control group (pre and post matching)

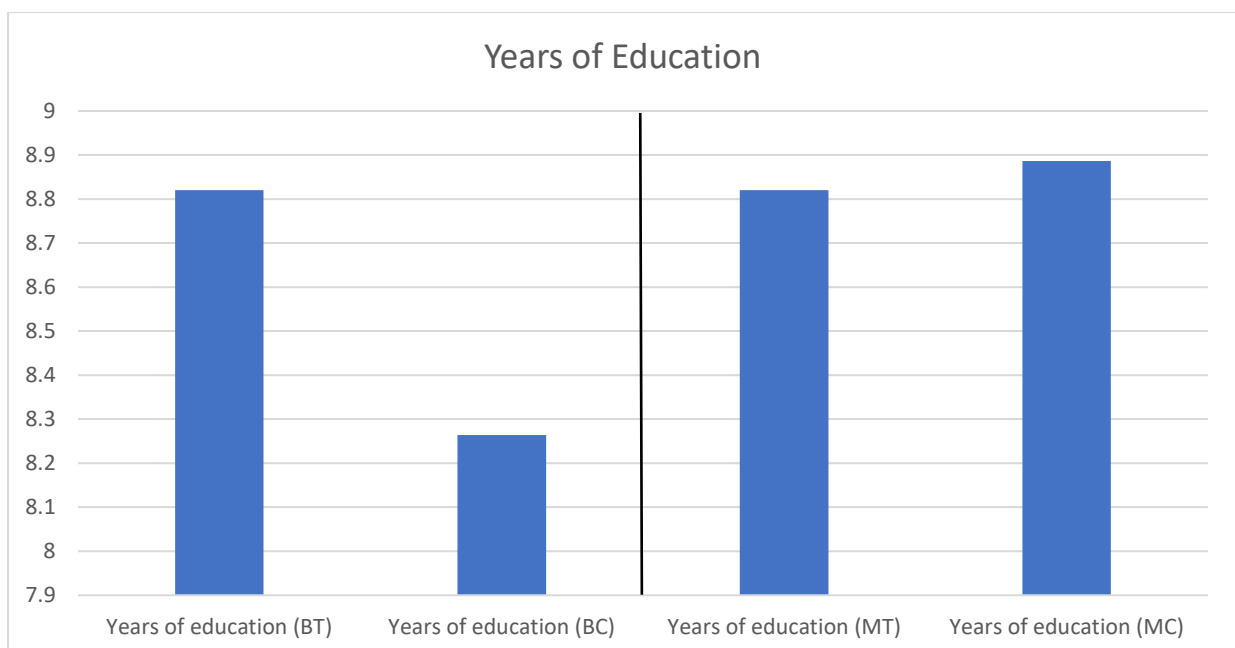


Figure 4.8

Average family size of treatment and control group (pre and post matching)

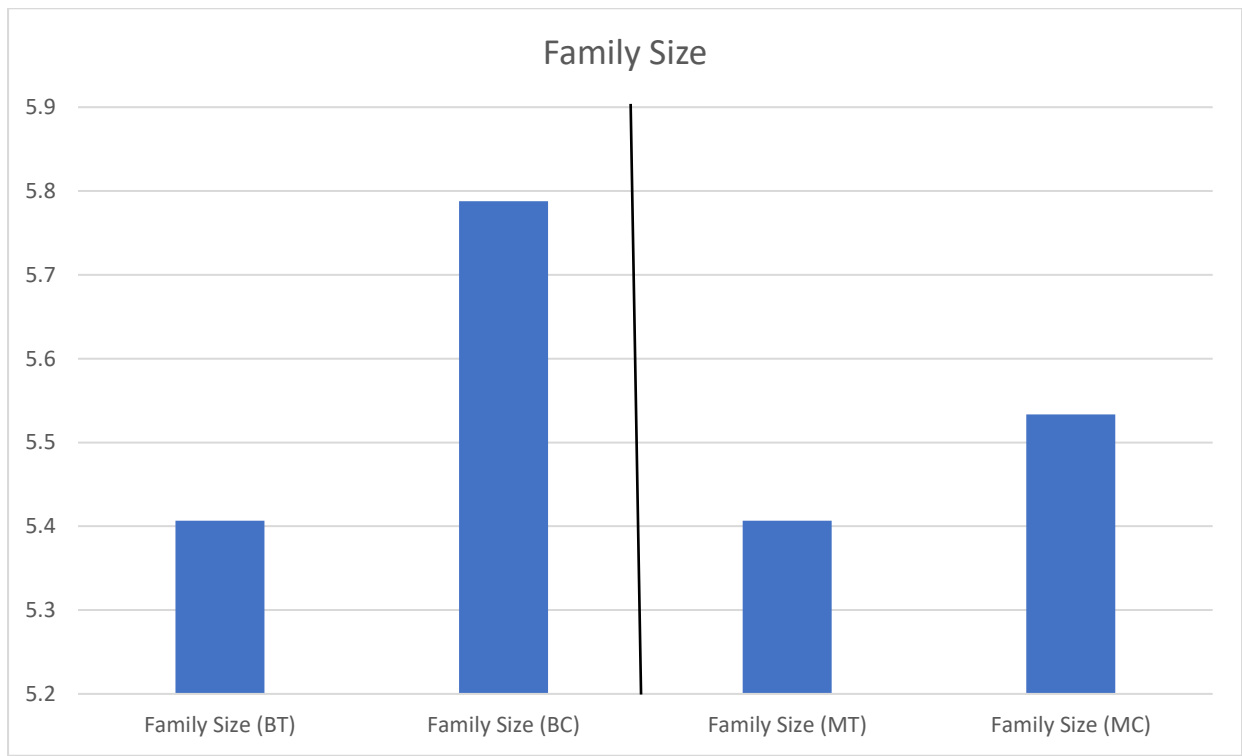


Figure 4.9

Average income for financial year 2015 of treatment and control group (pre and post matching)

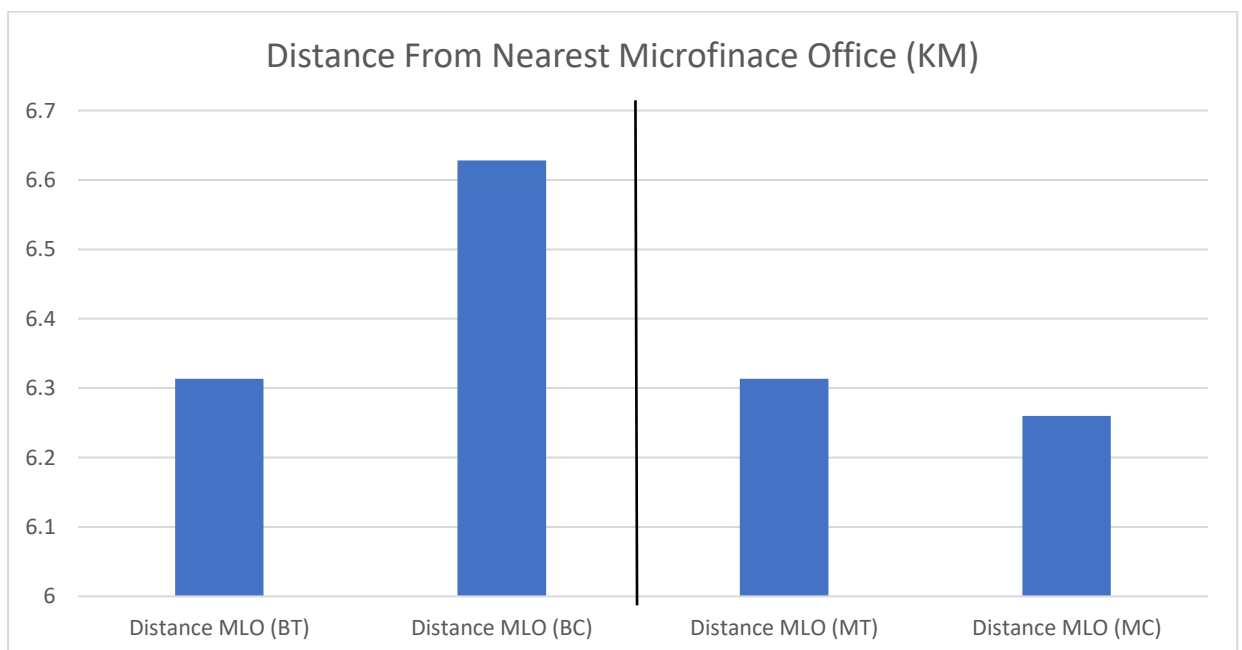
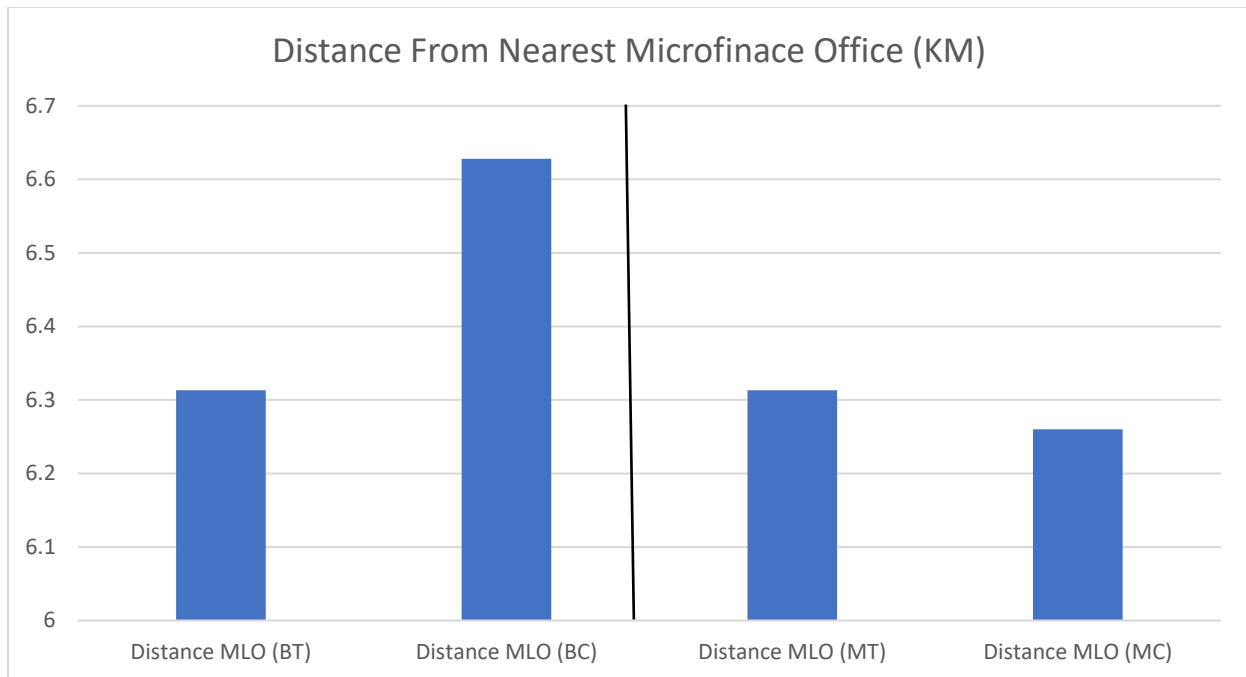


Figure 4.10

Average distance from Nearest Micro-lending office of treatment and control group (pre and post matching)



In the figures 4.6 to 4.10, it can be observed that post matching the differences in the average of the covariates are less as compared to the difference in the average of the covariates before matching. This supports the claim made by the study that the matching quality is adequate.

Hypotheses Testing with the help of defined Regression Models

This section which is the third step in the results section, deals with testing of 3 different hypotheses which tries to test the impact of microfinance lending on labor migration in the Indian artisan sector, export in the sector and women empowerment among artisan women.

Micro-lending's impact on labor migration is the first hypothesis of our study and has no sub hypotheses. While the second hypothesis which aims to measure the impact of micro-lending on export activities in the sector has two sub hypotheses out of which the first one is

micro-lending's impact on engagement in export activities and second one is its impact on export sales value. The third hypothesis which tests whether micro-lending leads to empowerment of women artisans, has three sub hypotheses. The first one deals with micro-lending's impact on women heading an entrepreneurial activity in an artisan household, second is on women's participation in decision making and third is microlending's impact on Women's health and hygiene. In total, there are 6 models that test the hypotheses. The results of these hypotheses are presented below.

Model 1: $E(LM|ML) = P(LM=1|ML)$

Where, "LM" refers to labor migration, "ML" refers to microfinance lending.

Table 4.7

Results of probit regression model 1

LM	Coef.	St.Err.	t-value	p-value	[95% Conf. Interval]		Sig
ML	-1.578	.167	-9.44	0	-1.906	-1.251	***
Constant	.468	.107	4.39	0	.259	.676	***
Mean dependent var		0.407	SD dependent var		0.492		
Pseudo r-squared		0.245	Number of obs		300		
Chi-square		99.510	Prob > chi2		0.000		
Akaike crit. (AIC)		309.863	Bayesian crit. (BIC)		317.271		

*** $p < .01$, ** $p < .05$, * $p < .1$

Table 4.7, reports the result of the probit regression model which tests the impact of micro-lending on labor migration from artisan households. It reports a negative and significant (-1.578, $p\text{-val} < 0.01$) impact of microfinance lending on labor migration in an artisan

household. The model is found to be a good fit (Prob>chi2 =0.000). Pseudo R-squared of the study is reported at 24.5% which indicates the likelihood of microfinance lending explaining the labor migration in the sector. This infers that an artisan household with microfinance loan has less chance of its family member migrating to other place as compared to an artisan household which does not have a microfinance loan.

Model 2: $E(EEA|ML) = P(EEA=1|ML)$

Where, “EEA” is engagement in export activity, “ML” refers to microfinance lending.

Table 4.8

Results of probit regression model 2

EEA	Coef.	St.Err.	t- value	p- value	[95% Conf. Interval]		Sig
ML	2.028	.185	10.95	0	1.665	2.391	***
Constant	-1.405	.149	-9.43	0	-1.697	-1.113	***
Mean dependent var		0.407	SD dependent var		0.492		
Pseudo r-squared		0.365	Number of obs		300		
Chi-square		147.768	Prob > chi2		0.000		
Akaike crit. (AIC)		261.605	Bayesian crit. (BIC)		269.013		

*** $p < .01$, ** $p < .05$, * $p < .1$

Table 4.8, reports the result of the probit regression model which tests the impact of micro-lending on engagement in export activities of artisan households. It reports a positive

and significant (2.028, p-val<0.01) impact of microfinance lending on engagement in export activities in an artisan household. The model is found to be a good fit (Prob>chi2 =0.000). Pseudo R-squared of the study is reported at 36.5% which indicates the likelihood of microfinance lending explaining the engagement in export activities in the sector. This infers that an artisan household with microfinance loan has more likelihood of its family member to engage in export activities compared to an artisan household which does not have a microfinance loan.

Model 3: $SEA = \alpha + \beta 1 ML + u$

Where, “ α ” refers to the intercept of the equation, “SEA” is sales in amount (INR) from export activities in financial year 2020, “ML” refers to microfinance lending and “u” is the residual or the error term of the equation.

Table 4.9

Results of OLS regression model 3

SEA	Coef.	St.Err.	t-value	p-value	[95% Conf. Interval]		Sig
ML	168366.67	28114.875	5.99	0	113037.82	223695.52	***
Constant	45733.333	19880.219	2.30	.022	6609.927	84856.74	**
Mean dependent var		129916.667	SD dependent var		257285.306		
R-squared		0.107	Number of obs		300		
F-test		35.862	Prob > F		0.000		
Akaike crit. (AIC)		8295.035	Bayesian crit. (BIC)		8302.443		

*** $p < .01$, ** $p < .05$, * $p < .1$

Table 4.9, reports the result of the OLS regression model which tests the impact of micro-lending on Export Sales in amount of artisan households. It reports a positive and significant (168366.67, p-val<0.01) impact of microfinance lending on export sales in amount

in an artisan household. The model is found to be a good fit (Prob>F =0.000). R-squared of the study is reported at 10.7 % which indicates explaining power of the independent variable on the dependent variable. This infers on an average a household with microfinance loan makes export Sales of Rs 1,68,366.67 more than an artisan household which does not have microfinance loan.

Model 4: $E(WH|ML) = P(WH=1| ML)$

Where, “WH” refers to women heading an entrepreneurial activity and “ML” refers to microfinance lending.

Table 4.10

Results of probit regression model 4

WH	Coef.	St.Err.	t-value	p-value	[95% Conf. Interval]		Sig
ML	1.05	.176	5.96	0	.705	1.395	***
Constant	-1.321	.142	-9.27	0	-1.6	-1.041	***
Mean dependent var			0.243	SD dependent var		0.430	
Pseudo r-squared			0.117	Number of obs		300	
Chi-square			38.816	Prob > chi2		0.000	
Akaike crit. (AIC)			298.120	Bayesian crit. (BIC)		305.527	

*** $p < .01$, ** $p < .05$, * $p < .1$

Table 4.10, reports the outcome of the above probit model which tries to measure the effect of microfinance lending on the women heading a household entrepreneurial activity in the artisan sector. The results generate a significant and positive (1.05, p-val<0.01) impact of micro-lending on Women heading the entrepreneurial activity in an artisan household. This infers that those households which have taken microfinance loan has more likelihood of having

a woman heading the entrepreneurial activity as compared to those who did not take a microfinance loan. The model is also a good fit (Prob>chi2 =0.000) and pseudo R-squared of 11.7% indicates the likelihood of Microfinance Lending explaining the dependent variable.

Model 5: $E(WPDM|ML) = P(WPDM=1| ML)$

Where, “WPDM” refers to women’s participation in decision making and “ML” refers to microfinance lending.

Table 4.11

Results of probit regression model 5

WPDM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
ML	2.283	.224	10.18	0	1.844	2.722	***
Constant	-.449	.106	-4.23	0	-.657	-.241	***
Mean dependent var		0.647	SD dependent var			0.479	
Pseudo r-squared		0.401	Number of obs			300	
Chi-square		156.310	Prob > chi2			0.000	
Akaike crit. (AIC)		237.381	Bayesian crit. (BIC)			244.789	

*** $p < .01$, ** $p < .05$, * $p < .1$

Table 4.11, reports the final results of the relationship between of microfinance loan and artisan women’s participation in household decision making. Significant and positive results are reported as per the generated table (2.283, p-val<0.01) which indicates that microfinance lending increases the likelihood of an artisan women’s participation in household decision making. The model is found to be a good fit (Prob>chi2 =0.000) with a pseudo R-squared of 40.1% indicating the likelihood by which micro-lending may explain participation of women in decision making of an artisan household.

Model 6: $HH = \alpha + \beta 1 ML + u$

Where, “ α ” refers to the intercept of the equation, “HH” is health and hygiene level, “ML” refers to microfinance lending and “ u ” is the residual or the error term of the equation.

Table 4.12

Results of ordered probit regression model 6

HH	Coef.	St.Err.	t-value	p-value	[95% Conf. Interval]		Sig
ML	1.045	.14	7.46	0	.771	1.32	***
Constant	-.69	.105	.b	.b	-.896	-.483	
Constant	.648	.105	.b	.b	.443	.853	
Mean dependent var	1.313			SD dependent var	0.710		
Pseudo r-squared	0.096			Number of obs	300		
Chi-square	57.694			Prob > chi2	0.000		
Akaike crit. (AIC)	550.040			Bayesian crit. (BIC)	561.151		

*** $p < .01$, ** $p < .05$, * $p < .1$

Table 4.12, reports the result of the ordered probit regression model which tries to tests the impact of micro-lending on health and hygiene of artisan women in the sector. Here two conditions i.e. adequate body mass index (BMI) and availability of toilets is taken as proxy for health and hygiene respectively. Two points for satisfying both the conditions, one point for satisfying any of the condition and zero for satisfying none of the conditions was given as scores and these scores ranging from zero to two becomes our dependent variable.

The table reports a positive and significant (-1.045, p-val<0.01) impact of microfinance lending on health and hygiene of the women artisans in the household. The model is found to be a good fit (Prob>chi2 =0.000). Pseudo R-squared of the study is reported at 9.6 % which indicates the likelihood of microfinance lending explaining the health and hygiene in the sector. This infers that a woman in an artisan household with microfinance loan has more chance of having better indicators in terms of health and hygiene as compared to a woman in an artisan women household which does not have a microfinance loan.

Summary

The above chapter reported the generated results of the models drawn in the previous chapter. It started with summarizing the data collected and then laying down tests which ensured the quality of the matching. Finally, it reported the results of the 6 models representing the three major hypotheses of the study along with brief interpretation of the results. The results and the inferences of this chapter are explained in more elaborative way in next chapter of the study.

Chapter 5

DISCUSSION

Chapter Structure

The chapter consists of the meaningful discussion and interpretation of the results that were shown in previous chapter. It starts with an overview, followed by explaining the descriptives of the demographic indicators. The study then explains hoe the effectiveness of the matching was ensured. Then the study discusses each objective and their results one by one and relates their relevance with previous literature and the addition that it makes. The chapter then ends with discussing policy implications and limitations of the study.

Overview

The study collected total 400 samples of household data from artisans of 8 different locations. out of which 150 were borrowers of microfinance loan while 250 were taken as control group as shown in table 4.1. From the data collected of those 400 respondents, the analysis was done and the result section of the study reported key results for the four objectives of the study along with some of the descriptives and tests related to the propensity matching process. From the objectives of the study the first objective does not form into a hypothesis as it is subjective and not testable. Descriptive table was used to make interpretation about the first objective. The rest three objectives form into three major hypothesis representing objective two, three and four respectively. Out of those the second and third hypothesis has two and three sub-hypotheses respectively while the first major hypothesis as no sub-hypothesis. This led in laying down seven regression models, one for the matching process and rest six for testing the hypotheses. The chapter discusses it one by one below after discussing the descriptive tables of the demographic variables.

Descriptive Statistics

This section discusses the descriptives of the key demographic variables to provide information about the sample data which has given prima facie idea about the artisan population. Table 4.2,

of the result section demonstrates the descriptive indicators of the demographic variables pre-matching. While pre-matching sample is 400, the post matching sample becomes 300. However, the variables ‘size of loan’ and ‘rate of interest’ have 150 samples both in pre and post matching samples. This is because the information is collected only from the borrowers who are 150 out of 400. In table 4.2, which illustrates the pre-matching descriptives, the average age of the artisans in the sample is 42.78 years, however the Standard deviation is around 12.53 which means that there is lot of variation in the age group of artisans. The range also varies from 20 years to 81 years. The average years of education is 8.47 years with a standard deviation of 3.60 which indicates that most of the artisans have received elementary level education. Average family size is 5.65 with a standard deviation of 2.65 which is quite high and indicates that the sample includes mostly all kinds of families starting from 1 to maximum 25. The average range of household Income for FY 2020 is 3.6 which means the average income lies between Rs 1.5 -2 lakhs. An approximate estimation using average of 6 people in a family with Rs 2 lakhs income per household comes to around Rs 33,333 as average per capita income of an artisan, which is around Rs 90 per day. This is considered as people living in extreme poverty as per lot of researchers.

In the post-matching descriptives as presented in table 4.3, the overall indicators are not much different in terms of averages and standard deviations from indicators in table 4.2. However, the descriptives of the demographic variables between the treatment group and control may still have significant difference before matching due to which the matching process was done to reduce the difference, which are presented in table 4.5 & 4.6.

Discussing the Effectiveness of Matching

The study used propensity score matching technique followed by 1:1 nearest neighborhood matching to create balance between the treatment and control group. The technique used a specialized probit model to generate the propensity score for each respondent on the basis of 5

confounding variables which influence a respondent to get a microfinance loan. The confounding variables were, level of education, age, gender, past income level, family size (Mazumder & Lu, 2015) and distance from nearest micro-lending office in kms. These variables were part of the historic data collected as on the financial year 2015 as it is taken as the base year for collection of historic data.

The respondents were provided with a score which indicated their likeliness of being treated regardless of whether they were actually treated or not. Then each respondent from treatment group was matched to another respondent from the control group with the nearest score. When all of the respondents from treated group were matched to the control group, the rest respondents were dropped. By this a final sample of 300 respondents was reached with 150 respondents in each treated and control group. Further the results of independent sample t-test and Chi-Square test is reported in table 4.5 & 4.6, respectively which was done to ensure the quality of matching which means that the respondents in the treatment group are not significantly different from the respondents in the control group on the basis of the confounding variables or covariates mentioned above.

Independent sample t-test ensured that there is no significant difference among the covariates of the treatment group and control group post matching with mean difference less than that of the pre matching groups. However, gender was not included in the t-test because it is a binomial variable for which a chi-square test was done and found to have no significant difference between the two groups post matching. All the p-values of the t-test and chi-square test were reported to be greater than 0.05, which indicated the matching process to be ideal. Further the line and bar graphs shown in figure 4.1 to 4.10, also shows the difference to have reduced post matching and supports the claim that the matching is ideal. Since the matching is ideal, this leads us to discussion of the results related to the objectives of the study.

Objective wise discussion of key findings

This section deals with discussing the key findings of the study on the basis of objectives and hypotheses which were laid down in previous chapters. The study is based on 4 research objectives from which the 1st one is descriptive and subjective in nature while the 2nd, 3rd and 4th objectives were formulated into 3 major hypotheses. Out of those 3 major hypotheses the 1st hypothesis has no sub-hypothesis while the next two have 2 and 3 sub hypotheses respectively. Micro-lending's impact on labor migration is the first hypothesis of our study and has no sub hypotheses. While the second hypothesis which aims to measure the impact of micro-lending on Export activities in the sector has two sub-hypotheses out of which the first one is micro-lending's impact on engagement in export activities and second one is its impact on export sales value. The third hypothesis which tests whether micro-lending leads to empowerment of women artisans, has three sub hypotheses. The first one deals with micro-lending's impact on women heading an entrepreneurial activity in an artisan household, second is on women's participation in decision making and third is micro-lending's impact on women's health and hygiene.

Table 5.1, systematically summarizes the objectives, related hypotheses and the decision related to them.

Table 5.1

Objective wise Summary of key Findings

Objective 1: <i>To study the depth and breadth of microfinance outreach among artisan households.</i>
Findings: The objective is descriptive in nature and does not form into a hypothesis. The findings are subjective in nature and is discussed in below sections using the descriptive indicators from the tables 4.1 to 4.4.

Objective 2: To examine the impact of microfinance on rural-urban migration in artisan households.		
Hypothesis 1 (H₁₁) Microfinance lending negatively affects the rural-urban migration in the artisan households		Supported
Objective 3: To determine whether microfinance lending affects the export activity of the artisan households.		
Hypothesis 2 (H₁₂) Microfinance lending positively affects the export activities done directly or indirectly in the artisan households		
Sub-Hypothesis 1 [SH₁₂(1)]	Microfinance lending leads to more number of artisan household engaging in export activities either directly or indirectly.	Supported
Sub-Hypothesis 2 [SH₁₂(1)]	Microfinance lending leads to more amount of export sales either directly or indirectly in artisan households.	Supported
Objective 4: To determine whether microfinance lending affects the export activity of the artisan households.		
Hypothesis 3 (H₁₃) Microfinance lending has a positive impact on empowerment of women artisans in a household.		

<i>Sub-Hypothesis 1 [SH₁₃(1)]</i>	Microfinance lending has positive impact on women heading an entrepreneurial activity in an artisan household.	Supported
<i>Sub-Hypothesis 2 [SH₁₃(2)]</i>	Microfinance lending has positive impact on women's participation in decision making in an artisan household.	Supported
<i>Sub-Hypothesis 3 [SH₁₃(1)]</i>	Microfinance lending has positive impact on women health and hygiene in an artisan household.	Supported

Note: Author's compilation by referring to results section

Depth and Breadth of Microfinance within the Indian Artisan Sector

The first objective of the study tried to study the depth and breadth of outreach of microfinance among the artisans. In the literature of microfinance, the depth and breadth of outreach refers to the quality of loan given and quantity of borrowers served. As shown in table 4.1, the current study collected sample from 400 artisan household out of which 150 were found to be treated with microfinance loans. This makes around 37.5% outreach among the artisans. Sambalpuri silk handloom saree, has the highest rate of breadth of outreach i.e., 52 %, Sambalpuri cotton handloom saree artisans have the lowest outreach among all i.e., 28%.

Coming to outreach of women which is around 13% (54 out of 400) as compared to male members having 24 % (96 out of 400) of outreach in the total sample of 400. Out of the treated borrowers of 150, the proportion of women stands around 36 % (54 out of 150) as compared to 64 % (96 out of 150) of male borrowers. This indicates that even if women artisans are in majority in the artisan workforce, the proportion of outreach to them as compared to men is still very less. While the overall outreach among the artisans in the sector is decent, the

segmentation among the gender seems to be inconsistent with the social objectives of microfinance.

Further the average loan size is also quite large i.e., Rs 75,803 with even high standard deviation of, 1,08,645. This raises concern about the depth of outreach as it is commonly believed that microfinance loans should be smaller in size so that it can be served to a large number of clients and at the same time there should not be much variation between the loan size across the clients so as to ensure adequacy of the loan amount among the clients. But the higher average loan size and very high standard deviation indicates that the bigger loans may been given to deep pocket borrowers to ensure better repayment rate and very small size loans may have been given to marginal artisans to whom the loan may not be adequate. Average interest rate of 17.02 % with a standard deviation of 6.676 may seem a bit high initially but looking at the level of risk and frequent requirements of loan within short period of time, the rate seems fair as reasonable compared to bank loans which has stringent eligibility criteria along with provision for collateral.

The sample from the artisan sector reveals key aspects of the condition of artisan population and the status of microfinance within the sector. While the breadth of outreach of microfinance among artisans seems to be reasonable, the depth of outreach is still unsatisfactory in terms of loan size and group segmentation. This means that microfinance loan to some artisans may be available easily, but not to all, especially the vulnerable ones and even if they do, they might not get what they needed in terms of loan quality. While interest rate seems reasonable, the size of loan may not be adequate and it may not necessarily be given to those who need it the most, like women in a poor household. In other words, the most vulnerable group of artisans either may not get a loan or have high chance of getting a loan which is inadequate, while the privileged artisans who may not need a loan will be pushed with large size loans by the MFIs for ensuring better repayment ratio. These revelations are

consistent with the studies which claims that there exists a trade-off between the social and financial objectives of microfinance which results in mission drift. However, the reasons for such mission drifts are not unavoidable and can be controlled with proper policies and regulations.

Microfinance and Labour Migration in Indian Artisan Sector

The second objective of the study tried to establish causal relationship between microfinance and rural-urban labour migration by artisans. It is represented by the first hypothesis which claims that microfinance has negative impact on rural-urban migration among artisan households. The study used a probit model with microfinance lending as independent variable and rural-urban labour migration as a dependent variable which is presented as Model 1 in the third chapter of the study. Both the variables were dichotomous. The results as presented in table 4.7, provides us with a negative coefficient along with a significant p-value (-1.578, $p\text{-val} < 0.01$), which indicates that the artisans which are borrowers of microfinance loan have less likelihood of migrating from its native place to urban areas as compared to those who are not the borrowers of microfinance loan. The pseudo r-square which is reported at 24.5%, indicates the likelihood of Microfinance Lending explaining the Labor Migration in the sector is considered decent when dealing with probit models. This infers microfinance loan to have negative impact on rural-urban migration in the artisan sector.

While impact of microfinance on labour migration itself is a niche area with very few studies in it, the current study is as per best of our knowledge the first one which tries to test this relationship in context with the Indian artisan sector in which labour migration is a major problem. The results of objective of the study are consistent with that of the study made by Banerjee et al. (2015), in which they tried to measure the impact of microfinance lending on labour migration along with various other variables in the slums of Hyderabad. The findings related to this particular objective portrays microfinance as a possible solution towards one of

the major concerns within the artisan sector i.e., rural-urban labour migration. As discussed by Venkatesan (2009), the artisan sector is one of the largest sectors of occupation in India and has the potential to absorb the problem of rural-urban migration by providing near hand employment to the artisans. Thus, with the help of microfinance lending the sector can generate self-employment opportunities (Biswal & Mishra, 2022) to provide near hand employment to the artisans which may ultimately reduce the rural-urban labour migration happening in the sector.

Microfinance and Export Activity in Indian Artisan Sector

The third objective of the study tried to establish causality between microfinance lending and export activity in the Indian artisan sector. It is represented by the second hypothesis of the study which claims microfinance to have positive impact on export activities in the Indian artisan sector. It had two sub-hypotheses of which the first one tried to measure the impact of microfinance loan on engagement in export activities and the second one tried to measure its impact on the value of export sales. The first sub-hypothesis had both dependent and independent variables as dichotomous hence a probit model was used as represented as Model 2 in chapter 3. The second sub-hypothesis had a continuous dependent variable and dichotomous independent variable, hence an Ordinary Least Squares (OLS), regression model, represented as Model 3 in the Research Methods chapter, was used to measure the impact of micro-lending on export sales value.

The results of model 2 as shown in table 4.8, provides us with significant and positive effect of microfinance on export engagement in the artisan sector (2.028, $p\text{-val} < 0.01$). The pseudo r-square of 36.5 % also indicates a strong likelihood for microfinance lending explaining export engagement in the sector. This infers that those artisans who are borrowers of microfinance loan are more likely to engage in export activities as compared to those artisans who are not borrowers of microfinance loan. Similarly, table 4.9, reports the results of the OLS

regression specified in Model 3, which represents the second sub-hypothesis. It reports a significant and positive of microfinance on export sales value (168366.67, $p\text{-val} < 0.01$), with an Adjusted R-squared 10.4 %. This indicates that the artisans who have borrowed microfinance loan have on an average Rs 1,68,366.67 more export sales than those artisans who do not borrow from microfinance. So, it can be said that microfinance not only increases the likelihood of engaging in export activities, it's also positively affecting the sales value from export, thus increasing the income of the artisans and providing them an opportunity to earn a sustainable livelihood. At the same time, it will also contribute to the foreign exchange reserves of the country.

The ability to export is one of the unique and a major potential of the Indian artisan sector (Crafting a livelihood, Dasra, 2013) among the types of borrowers that microfinance cater. Like labour migration, impact of microfinance on export is also an underexplored area in the literature of microfinance which the current study tried to explore in context with the Indian artisan sector. The findings are important for the microfinance literature because of two reasons. First, due to the nature of the artistic products which are in high demand in international markets and remains mostly untapped by the Indian artisans. Second, this study on impact of microfinance on export with context to the Indian artisan sector is probably as per the best of knowledge is the first of its kind. The results of the specific objective depict microfinance as a recipe to exploit the potential of exportability of the Indian artisan sector to provide them better income and sustainable livelihood by exploiting untapped markets where they can sell their products at better prices with less competition.

Microfinance and women empowerment in Indian Artisan Sector

The fourth objective of the study which tried to estimate the impact of microfinance on women empowerment carried three sub hypotheses. Microfinance on impact on Woman heading a household entrepreneurial activity, women's participation in household decision making and

women's health and hygiene were the first, second and third hypothesis respectively. All the three sub-hypotheses were represented by Model 4,5 & 6 respectively.

Table 4.10, presents the results of Model 4 which represents the first sub-hypothesis under hypothesis 3. It provides a significant and positive coefficient (1.05, $p\text{-val} < 0.01$) with a pseudo r-square of 11.7 %. This infers that reveals that the women artisan that are borrowers of microfinance are more likely to head the household entrepreneurial activity as compared to those women artisans who are non-borrowers. As highlighted by researchers and discussed in the previous chapters of the study, control over assets is one of the key indicators of women empowerment. In an artisan household where usually standard of living is very low, the household artisan entrepreneurial activity and the capital goods related to it are the most valuable assets, hence heading the household entrepreneurial activity is considered by the study as a proxy for control over resources.

Table 4.11, presents the results of Model 5 which represents the second sub-hypothesis under hypothesis 3. The results reveal that microfinance has a positive and significant impact on woman's participation in active decision making of the household (2.283, $p\text{-val} < 0.01$). According to the results, microfinance lending has 40.1 % (pseudo r-squared) likelihood of explaining whether a woman will participate in active decision making of the household or not. In a poor household where women are generally considered to be vulnerable, having right to participate in the decision making of household related to investment, savings, child education, conducting religious functions, purchasing assets etc. indicates the higher status of women in a household. The results reveal that microfinance not only empower women financially but also increases their social status at home. Hence the results are important for literature related to microfinance, artisan sector and women empowerment.

Table 4.12, provides with results Model 6, which tries to test the impact of microfinance lending on women health and hygiene. This indicator is measured by two proxies i.e., Adequate BMI and availability of toilet in an ordered probit setting. Having adequate BMI and toilets, indicates the level of care that a woman receives in terms of health. The result was found to be positively significant (1.045, $p\text{-val} < 0.01$), which means that on an average the artisan woman who are treated with microfinance loan are more likely to have better health and hygiene at household. Thus, microfinance as a tool for development can also be used to achieve better health indicators among artisan women in India.

Microfinance's impact on women empowerment is one of the most debatable topics in the literature related to microfinance. This study falls among the group of studies which claims microfinance to have positive and significant impact on women empowerment. However, the study is unique in terms of the respondents taken as they already possess the existing skills and idea for starting an entrepreneurial activity. The Indian artisan sector which has women as majority in the workforce also is in a vulnerable state where the women suffer the most in terms of health, sanitation, control over assets and decision making. This study found microfinance as a tool for empowering women artisans who constitute the majority in the total number of artisans in India and have an existing skill set and business idea that makes them a unique respondent of microfinance as compared to others.

Policy Implications

Implications of the study are mostly policy related implication due to the nature of the study which aims at developing a certain sector of the Indian economy. At the same time the study also has some implications for the Microfinance industry as well. The study will aid the makers of policies in the country in two ways. First, it will provide a blueprint to policy makers as how they can use microfinance as an instrument to lift artisan sector by way of generating self-employment and growth within the sector, which is the second largest occupation of rural

people in the country after agriculture. Secondly, it will encourage the government to allocate more resources to promote microfinance for empowering women in areas where the women already possess pre-requisite skills and ideas of self-employment. The study will also attract the eyes of Micro Finance Institutions (MFI's) towards the Indian artisan sector, especially the women in the sector and will also guide them to allocate their limited resources in a more efficient way to increase their success rate. Microfinance and its effectiveness have always received contradicting views. Further women empowerment and its indicators are also much debatable in microfinance literature. The current study makes an effort to measure the effectiveness of microfinance on women of Indian artisan sector and claims it to be a tool for uplifting the women of the sector according to few widely accepted indicators and concludes by claiming microfinance to have a positive impact on these indicators.

Limitations of the Study

The study used a quasi-experimental research design to establish causality because the intervention was not in the hands of the researcher. Further the data collection was done during winters of 2021 but the data collected were historical in nature and were for two points of time i.e., FY 2015 and FY 2020. For this, the researchers had to rely on the information given by the respondents regarding their past data which may not be precise. Researchers believe that a longitudinal study with field experiments where intervention is in the hands of the researcher could generate better results. Further role of education and awareness in the context of microfinance and women empowerment could also be studied to bring deeper insights into the topic.

Conclusion

Microfinance as a tool for development has been used since long time by both government and private entities all over the world. However, the presence of microfinance is dominant in developing economies where there is large income disparity and substantial proportion of the

population live in poverty. The targeted beneficiaries of microfinance agencies are mostly the vulnerable population in a country.

The current study tries to target the Indian artisan sector, which is woman majority sector in terms of workforce and also is in a stage of decline due to its unsustainable income. It tries to establish causal relation between microfinance lending and three major factors of the sector which are Labour Migration, Export activity and Women empowerment. The results of this study dives into the niche areas in the literature of labour migration and exportability effect of microfinance. Further it tries to bring in microfinance as a solution for those artisans who are unable to live a sustainable life and are deprived of basic necessities of living. Labour migration which is one of the major problems in the artisan sector currently is found to have negative effect from micro lending. Export engagement and increase in export business which was positively influenced by micro lending, may lead to increase in the disposable income and rise in bargaining power of the artisans along with tapping into the unused potential of the sector. Local level economic growth, income equality and alleviation of poverty along with generation of forex reserve is something the policy makers should be interested in when they use microfinance as an intervention in the artisan sector.

Results of this study also support the group of researches which claims microfinance to significantly result in women empowerment. The study tries to measure women empowerment by using three indicators i.e., Woman heading an entrepreneurial activity, woman's active participation in household decision making and women's health and hygiene in an artisan household. Children's education is excluded because all the artisan women in our sample are not necessarily married or have children. These indicators and their proxies are better explained in literature and methodology chapters of the study.

Microfinance and its impact, which is a contentious issue in literature of microfinance provides scope for deeper studies to get new insights. The current study which tired looking deeper into the Indian artisan sector with context to microfinance. The findings of this study will provide a roadmap to the policy makers to make policies to boost employment and empower women. Further it will also contribute to the local economy and the national foreign exchange. While the overall impact of microfinance is debated, the study reveals microfinance to have positive impact on Indian artisan sector.

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Appendices

I. Field-work Instruments

A. Participant Information Sheet

School of Management Studies

University of Hyderabad

Title: Impact of Microfinance on Indian Artisan Sector

Before you decide to take part in this study, please take time to read the following information carefully and discuss it with others if you wish as it is important for you to understand why the research is being done. In-case of any doubt, feel free to clarify it with the Investigators. Take time to decide whether or not you wish to take part in this study.

What is the purpose of the study?

The study aims at explaining the relationship between microfinance lending and performance of artisan households on an average in an effort to suggest ways to bring development in the sector. It also tries to focus on the demographic distribution of the artisans and the quality of microfinance lending that currently prevails in the sector. We are collecting the data from various kinds of artisans from the state of Odisha. Results obtained from the study will help in giving recommendations.

Do I have to take part?

Your decision to take part in the study is purely voluntary. You can also withdraw anytime in the middle of the interview if you wish to do so without giving any reason.

What is the Procedure?

If you wish to participate, we will conduct a small survey related to some socio-economic variables and ask you few questions regarding it. It will take only 10 mins time.

What are the possible benefits of taking part?

There are no financial benefits for participating in the survey. However, it will be for your own benefit if it goes for policy recommendations in future.

Will my taking part in this project be kept confidential?

Records from this study will be kept as confidential as possible. No individual identities will be used in any report or publication resulting from the study. The study is purely for academic purpose and will not be used for any commercial activity.

B. Consent Form

School of Management Studies

University of Hyderabad

Title: Impact of Microfinance on Indian Artisan Sector

- I confirm that I have read and understand the Participant Information Sheet.
- I was given the opportunity to ask questions and got them answered.
- I understand that all efforts will be made to ensure my identity is not revealed and all of my personal information will remain confidential.
- I agree that data gathered in this study may be stored anonymously and securely, and may be used for future research.
- I understand that my participation is voluntary in nature and that I have the right to withdraw at any time without giving any reason.

I agree ()

I disagree ()

Signature of the Principal Investigator

Name & Signature of the Participant

Date:

C. Structured Schedule

Part i:

1. Name (optional): _____
2. Age: _____ years
3. Gender: Male ☐ Female ☐ Others ☐
4. Religion: _____
5. Caste: _____
6. Completed years of education _____ years
7. State _____
8. District _____
9. Type of work engaged in _____
10. Family size _____
11. Distance from nearest micro-lending office _____ kms

Part ii:

12. Whether the household received a microfinance loan? Yes ☐ No ☐ , If yes, which _____ year

13. Annual household income (INR) range as on beginning of base financial year (2015):

☐	☐	☐	☐	☐
Below 50,000	50,000-1lakh	1-1.5 lakhs	1.5-2lakhs	2-2.5 lakhs
☐	☐	☐	☐	☐
2.5-3lakh	3-3.5 lakhs	3.5-4 lakhs	4-4.5 lakhs	Above 4.5lakhs

14. Annual household income (INR) range as on beginning of current F.Y (2020):

☐	☐	☐	☐	☐
Below 50,000	50,000-1lakh	1-1.5 lakhs	1.5-2lakhs	2-2.5 lakhs
☐	☐	☐	☐	☐
2.5-3lakh	3-3.5 lakhs	3.5-4 lakhs	4-4.5 lakhs	Above 4.5lakhs

15. Whether any family member from the household migrated to urban area for doing manual labor or blue collared job: Yes ☐ No ☐

16. Whether the household is engaged in export activity (directly and indirectly): Yes ☐ No ☐

If yes, whether Directly ☐ ; if directly, EIC code _____

Indirectly ☐ ; if Indirectly, Name of intermediary _____

17. Level of sales in value as on beginning of F.Y 2020: INR _____

18. Level of export sales in value as on beginning of F.Y 2020: INR _____

19. The household entrepreneurial activity is headed by: Men ☐ Women ☐

20. Whether there is women's active participation in household decision making: Yes ☐ No ☐

21. Whether toilets are available: Yes ☐ No ☐

22. Height of a woman from the household _____ cms

23. Weight of the above woman _____ kgs

24. Whether BMI of the above person is in adequate range: Yes ☐ No ☐ (BMI value____
)

Part iii (for treated respondents) :

25. Number of loan cycle: _____ times

26. Size of recent loan: _____ INR

27. Size of EMI: _____ INR

28. Rate of Interest _____

29. Frequency of repayment: _____

30. Loan given to: Men ☐ Women ☐

31. Name of the lending organization _____

32. Whether any training/induction programme organized by the lending organization:

Yes ☐ No ☐

Thankyou

Impact of Microfinance on Indian Artisan Sector: Evidence from the State of Odisha

by Ankit Biswal

Submission date: 05-Sep-2023 12:15PM (UTC+0530)

Submission ID: 2158067099

File name: ANKIT_BISWAL.pdf (3.45M)

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"Big Data Analytics for Cyber-Physical System in Smart City", Springer Science and Business Media LLC, 2021

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III. Copy of Publications

A.

Exploring the relation between micro-lending and economic growth – evidence from Indian macro environment

Ankit Biswal* and Pramod Kumar Mishra

School of Management Studies,
University of Hyderabad,
Hyderabad, India
Email: ankitbiswal29@gmail.com
Email: pramod.mishra@uohyd.ac.in
*Corresponding author

Abstract: Mixed results on the impact of microfinance continue to create concern among the policymakers due to the opportunity cost of the resources allocated towards micro-lending. While microfinance reduces income inequality, it becomes necessary to know its effect on economic growth, as income equality and growth are negatively correlated in developing economies. We hypothesise that microfinance leads to the economic growth of the nation at the macro level, using India's state wise panel data extracted by exploiting the database of Microfinance Institutions Network and database of the Reserve Bank of India. The study uses a random effects instrumental variable model to deal with the endogeneity and state and time effect involved due to bi-causality and panel data respectively. Results obtained, suggest that micro-lending has a significant and positive impact on the economic growth of a nation, which implies that microfinance can also contribute towards positive economic growth along with its role of reducing income inequality.

Keywords: micro-lending; growth; gross domestic product; GDP; India; macro environment; gross loan portfolio; GLP.

Reference to this paper should be made as follows: Biswal, A. and Mishra, P.K. (2022) 'Exploring the relation between micro-lending and economic growth – evidence from Indian macro environment', *Int. J. Economics and Business Research*, Vol. 24, Nos. 1/2, pp.145–158.

Biographical notes: Ankit Biswal is working as a Research Scholar at School of Management Studies, University of Hyderabad. His areas of research interests are microfinance and economic development.

Pramod Kumar Mishra is working as an Assistant Professor in School of Management Studies, University of Hyderabad in the areas of operations management and quantitative techniques. He has done his PhD in Management Studies from School of Management Studies, University of Hyderabad. He has also worked at IIM Bangalore as a Post Doctoral Research Fellow right after his PhD. Has published papers in various national and international journals of repute. He has also organised several training programmes in the areas of data science and operations and supply chain management.

Banking Service Availability And Agricultural Productivity: A Case Study Of Rice Cultivation In Odisha

Ankit Biswal* Dr. Pramod Kumar Mishra ** Preetam Kumar Mahala

Abstract : *Rice is one of the central crop cultivated in Odisha, covering 65% of its total cropping area is the 4th largest producing engaging a large portion of the population in this activity for their economic livelihood. While availability of formal financial services are necessary to support economic activities, few studies exist on the impact of availability of banking services on agricultural productivity in the state of Odisha. Rice being the central crop in Odisha faces many challenges like lack of rain, pests, change in climatic temperature & humidity, floods etc. Banks provide services like crop insurance, seed capital, and equipment financing etc to support agriculture. With large number of population engaged in this activity, more bank branches should mean more banking services resulting in more productivity. This paper, taking district wise data tries to establish causal relationship between availability of banking services and agricultural productivity of rice in the state of Odisha by using a Multiple Regression Model where the prior aims to explain the later while controlling for other variables like average rainfall, irrigation facility, fertilizer usage, humidity etc. It was found that availability of banking services does not have any significant impact on rice productivity in Odisha.*

Keywords : Agriculture, Productivity, Economic Livelihood, Financial Services, Irrigation, Crop insurance, Equipment manufacturing etc.

Introduction

According to the World Bank Group, agriculture finance enables poor farmers to increase their income and food production. Formal credit system and availability of financial services, especially by commercial banks are necessary to support and promote agricultural growth (Anifowose, O. L. & Ladanu, W.K. 2015). Financial institutions like banks along with loan facilities provide services like crop insurance, seed capital, and equipment financing etc to enable agriculture to face challenges like lack of rainfall, pests, technological obsolescence, natural hazards etc. Therefore more banking branches should mean greater support to agriculture and greater productivity. Also more branches mean

* Research Scholar in School Of Management Studies, University of Hyderabad, Hyderabad
Email-ankitbiswal29@gmail.com, Ph.no- 8093277429, 9078783001 ;

** Asst Professor in School of Management Studies, University of Hyderabad, Hyderabad

*** Lecturer in commerce, Bhadrak Autonomous College, Bhadrak, Odisha

C.

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William Waller, Editor
waller@hws.edu, jei@hws.edu

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2 June 2023

Ankit Biswal
University of Hyderabad
School of Management Studies
Prof. CR Rao Road
Gachibowli Hyderabad 5000046
India

Pramod Kumar Mishra
University of Hyderabad
School of Management Studies
Prof. CR Rao Road
Gachibowli Hyderabad 5000046
India

Certificate of Acceptance for publication in the *Journal of Economic Issues*

Dear Mr. Biswal and Mr. Mishra

This letter is to confirm your paper, "Does Microfinance Empower Women Artisans?: Evidence from Indian Artisan Sector" has been accepted for publication in the *Journal of Economic Issues* (acceptance date 2 June 2023).

The article will likely appear in the *Journal of Economic Issues* in the March 2024 issue (which is volume 59, no. 1) or September 2024 (which is volume 59, no. 3). The DOI number will be assigned six weeks before publication. A caveat—our publication queue has been 18-24 months; however, the size of the journal has just been increased by 20%. Therefore, publication may be sooner than the projection above which is based on the previous page budget of the journal.

Thank you for submitting your research to the *Journal of Economic Issues*. We look forward to future submissions from you.

If you have any questions about the article, feel free to contact me at any time.

Sincerely,

William B. Waller Jr.

William Waller, editor
Journal of Economic Issues
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Chair, Department of Economics
Hobart and William Smith Colleges
300 Pulteney Street

Geneva, New York 14456-3397

Pandemic Phone: 315 237-1840
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