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Women's Entrepreneurial Progress and Empowerment: An Evaluation of Microfinance Schemes in Pakistan

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ABSTRACT

Objective: The main objective of the study is twofold; first to identify the reasons why women entrepreneur is unable to progress despite taking microfinance loans from MFIs and second is to examine the relationship between their progress and empowerment.

Research Gap: Existing studies largely rely on single-dimensional measures or descriptive approaches, with limited use of composite indices and advanced econometric techniques to capture the multidimensional nature of women's empowerment and its linkage with entrepreneurial progress.

Design/Methodology/Approach: Principle of Proportion allocation is used to obtain representative sample. A complete sample of 900 women is evaluated with the help of both descriptive and econometric techniques using SPSS and SMART PLS softwares. Two indices i.e. progress index & empowerment index were developed and Partial least Square and Structural Equation Modelling (SEM) are used for finding the intensity of each factor on the progress and empowerment indices.

The Main Findings: Findings showed that all kinds of three factors (Environmental/Social and technical) are positively contributing to the progress of women however the impact of their social factors is much higher than the other two. Moreover progress is also having positive and highly significant relationship with empowerment with path co-efficient of 0.90. However the large proportion of progressed and empowered women is found to be in rural areas.

Theoretical / Practical Implications of the Findings: The findings suggest that strengthening access to finance, social support systems, and institutional facilitation can significantly enhance women's entrepreneurial progress and, in turn, improve empowerment outcomes.

Originality/Value: The development of Progress index and empowerment index is the novelty of this study. So far to our knowledge, there is no evidence of such kind of extensive field survey targeting the women borrowers for their own businesses.

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1. Introduction

Women entrepreneurship is of considerable importance for social and economic growth of Pakistan. Different factors are found to influence the potential women entrepreneurship including financial, social, institutional and environmental determinants. Women entrepreneurs face the issues both from the demand and supply side frameworks of the society (Ahmed et al., 2011). The former one includes the social, institutional and legal setups and the later one depicts the story about the availability of opportunities for them against men. Access to finance, entrepreneurial constraints, social and technical issues are considered as great impediments to the growth for women entrepreneurs in Pakistan. Micro financing is considered as a better and progressive mean to resolve the financial

issues of women entrepreneurs in Pakistan. This system of Microfinance was first launched in Pakistan in 1999. The number of active microfinance borrowers was 600,000 in 1999[1] however today this number of active microfinance borrowers is more than to 2,803,762 out of which 62.26 percent of microfinance clients are women.[2] The economy of Pakistan is facing different challenges like inflation, basic commodities crises, decreasing exports, sever electricity and gas shortage, illiteracy, poor health facilities, poverty and unemployment. In such conditions, it is essential to encourage women to ensure sustained economic growth. For long run economic growth, it is very much likely to provide opportunities to women to participate in income generated activities.

Women represent almost half of the world's population with enormous capabilities and work potential. Empowered women can generate earning opportunities not only for themselves but for others too. Moreover, it has also been observed that if women are engaged in entrepreneurial activities those are mostly low paid sectors and have minimal role in economic growth and development. Being the factor-driven economy, our economy must focus on labor-intensive entrepreneurship as compared to knowledge-intensive. Because if we move to the later one then most of our women will remain reluctant in starting up of their own businesses due to lack of skills and exposure to education and training. As the Entrepreneurship means how to exploit opportunity and when the choice of the policy for the promotion of entrepreneur culture will be knowledge intensive then ultimately the participation rate of women in economic activity will remain low.

The expansion of financial services is mirrored by broader improvements in financial inclusion. Under concerted national efforts, Pakistan's women's financial inclusion rate measured by formal bank account ownership rose dramatically from around 4 % in 2018 to more than 50 % by 2025, with over 37 million women accounts opened and the gender gap narrowing from nearly 39 % to about 30 % (Bajracharya & Amin, 2013).

As per the so far latest report published by Global Entrepreneurship Monitor (2012), in Pakistan the rate of opportunities for entrepreneurial activities are increasing for male and female at the rate of 21.27 and 1.21 respectively showing a very low participation rate of woman in business activities. While in case of established business ownership the gender gap is increasing at this rate i.e. 5.81 and 1.60 for male and female respectively. However, province wise in Punjab and Sindh indicators are showing that people expect highest rate of starting up new business as compared to other two provinces. But the opportunities for women in early-stage entrepreneurial activities are available at the rate of 0.20% in Punjab as compared to 0.80% in Sindh. Why this Gap exists in such a large province? The study aims to suggest solution to the government that as most of the govt. regulations and policies are observed to be 'men streamed' not for the women[3], hence efforts are required to design such an agenda that these policies should be formed as 'gender neutral'. Moreover, a family-friendly policy through the proper provision of basic health care facilities should be introduced by the government because in developing economies child raising is also a big responsibility for women which restricts her freely movement for career and employment.

2. Literature review

This section presents the past literature examining the impact of microfinance with respect to social and economic lives of women entrepreneur. Recent international evidence further strengthens the microfinance–empowerment nexus. For instance, Banerjee et al. (2015) show that while microcredit improves business activity, its impact on broader empowerment outcomes is context-specific. Similarly, World Bank (2020) reports highlight that access to finance, when combined with training and social support, significantly enhances women's decision-making power and economic agency (de Oliveira Carvalho, 2020). More recent cross-country analyses (e.g., 2023 studies in developing economies) also emphasize that institutional quality and social norms critically mediate the empowerment effects of microfinance. Similarly, like authors like Schuler and Nazneen (2018) found that microfinance loans affect positively to the empowerment of women by increasing her power over asset control. But on the other side it has also been observed that these women entrepreneurs couldn't be able to enjoy equally the facilities like access to capital, land, business premises, information technology, training and agency assistance as men entrepreneurs do (Roomi & Parrott, 2008). Rather such women must face complex procedure of loan,

[1] Microfinance performance in Pakistan 1999-2005 , USAID

[2] www.mixmarket.org

[3] http://www.oecd-istanbul.sme2004.org

inaccessibility towards the place of work and less marketing facilities for starting up their entrepreneurial activities. One of the main reasons reported by them was the inadequate opportunities of training for enhancing their business skills (Mughal et al., 2015). However, these authors provided the solution to this problem that the multi-agency cooperation technique among the sectors like media, educational bodies and governmental policies is the only source for increase in development of nation.

Raghuvanshi et al. (2017) concluded in his study for India that lack of education, family support, institutional support and acquiring the finance are the most restrictive barriers for women entrepreneur. The authors suggested that the containment of knowledge can only be the source for overcoming these issues. Moreover, in literature this crucial issue of having less control over self-obtained microfinance loans by these women has also been focused (Goetz & Gupta, 1996) along with their obsessed decision-making powers (Haque et al., 2011). Finding showed that mostly 'married' women fall in such group where they have 'no control' over their credit money but even then these women entrepreneurs acknowledged that microfinance loans have helped them in reducing domestic violence from households (Hashemi et al., 1996; Khandker, 1998; Koenig et al., 2003) because when they join any of the microfinance program, it improves their status by increasing their purchasing powers.

These studies are one of the aspects of microfinance and its impact on the socio-economic status of women however this is also one of the important matters that where such women are getting absorbed, whether in formal sectors or informal sector? It's being observed from past studies that in case of developing economies, large chunk of women entrepreneurs gets penetrated in informal sector (Gallaway & Bernasek, 2002) due to less education and low skill levels. No doubt it is considered as inferior alternative to formal sector but still being comprised of small competitive firms, labor intensive methods and petty retail services, the women have less chances of being marginalized here in this sector as compared to formal sector of employment. After going through the most recent literature available on this area, we feel that there is a huge gap existing in this area related to the empowerment of such women with the help of such loans (Zaidi et al., 2007).

Moreover, there is no as such detailed literature available regarding the factors contributing to the progress of women borrower with reference to Pakistan's economy even though the number of female borrowers is increasing yearly in Pakistan. Hence the present study aims to highlight those factors specifically which are either supporting or restricting the economic progress of our women borrower and if she is progressed then to observe whether this is such kind of progress which is empowering them in their social lives or not. While established measures such as the Women's Empowerment in Agriculture Index and the Gender Empowerment Measure provide valuable frameworks, they are largely sector-specific or macro-level indicators. The novelty of this study lies in developing a context-specific, micro-level composite index that captures the multidimensional nature of women's entrepreneurial progress and its direct linkage with empowerment within the microfinance setting, thereby offering more nuanced and policy-relevant insights.

3. Problem statement

Women entrepreneurs in Pakistan are disadvantaged due to diverse factors including lack of finance, security, mobility, limited decision power, and different social and institutional norms. It has also been observed that most of the time the loans taken by the women do not benefit them rather men use these loans by acquiring through a woman. This is the reason that woman in developing countries like Pakistan is unable to improve her living standard. This study is designed to highlight the responsible factors for the less progress of our woman borrower who has set up her business by taking loans from Micro finance institutions. Moreover, this research also aims to relate this progress level with their empowerment in society. Empowerment is defined here as the aggregate of these indicators .e. share of ownership, free mobility, access to information and technology, gender norms, educational attainment and access to business skills, marketing opportunities, income status, consumption risks they have to face, working environment and prosperity indicators measured through improved individual, family, housing, property, health and nutritional status after owning a business venture. In other words, the foremost purpose of conducting this research is to examine that how much these loans have made these women able to gain maximum powers for getting their rights.

4. Research objectives

Following the nature of research problem, below is provided the designed objectives of the study:

- To identify environmental and economic factors which are restricting or supporting women entrepreneurs as microfinance borrowers in both rural and urban areas.
- To identify social/personal factors which are restricting or supporting women entrepreneurs as microfinance borrowers in both rural and urban areas.
- To identify technical factors which are restricting or supporting women entrepreneurs as microfinance borrowers in both rural and urban areas.
- To identify the relationship between the progress of women with their extent of economic empowerment.

5. Hypotheses

H_1: Economic & environmental factors have a positive impact on the progress of women entrepreneur.
H_2: Social & personal factors have positive impact on the progress of women entrepreneur.
H_3: Technical factors have positive impact on the progress of women entrepreneur.
H_4: Progress of Microfinance Borrowers affects positively their Empowerment.

6. Theoretical Framework

The theoretical foundation of this study is anchored in Sen's Capability Approach (Sen, 1999), which emphasizes that development and empowerment are best understood in terms of individuals' capabilities, the substantive freedoms they must lead the lives they value. Applying this framework to microfinance, access to financial resources enhances women's capability to make meaningful choices, increasing their agency in household and community decision-making. Complementing this, women's empowerment theory underscores the multidimensional nature of empowerment, including economic, social, and political dimensions, highlighting how financial inclusion and participation in microfinance programs can transform traditional gender roles and expand women's decision-making power (Kabeer, 1999). Furthermore, microfinance impact theory posits that providing small-scale financial services to underserved populations not only alleviates poverty but also enables social empowerment, creating pathways for greater educational, occupational, and entrepreneurial engagement among women (Armendáriz & Morduch, 2010). Together, these theories provide a robust conceptual framework to examine how microfinance initiatives influence women's empowerment by enhancing both economic opportunities and social agency.
The schematic framework as per theoretical foundations provided above is provided in figure 1 given below:

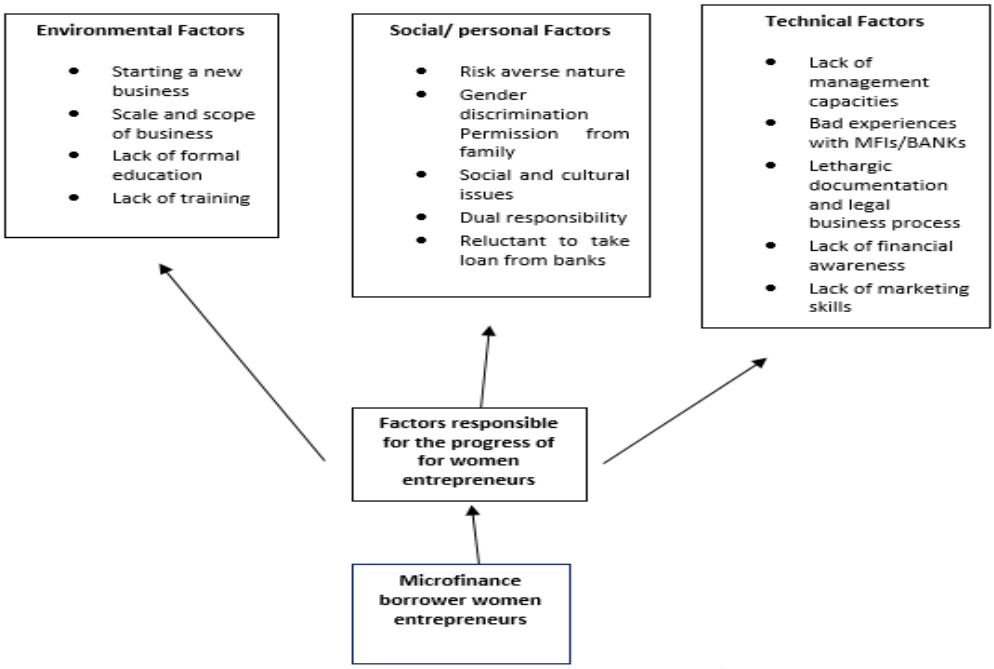


Fig: 1 Factors Responsible for the progress of women entrepreneurs as microfinance borrowers

Source: (Author)

This schematic diagram aims to highlight that in Pakistan women entrepreneur is facing these social, technical and environmental factors in the progress of women entrepreneur. Each of these dimensions covers various indicators which a woman encounters in our society.

7. Methodology and Estimation

7.1. Sample Design

The research design of this study is explanatory, descriptive and empirical research based upon questionnaires. The selected loan variable is taking different mean values for each subpopulation (cities) which are heterogeneous in nature, though each of which is considered internally homogenous. These subpopulations are non-overlapping and together comprise the whole of the population. Therefore, the more precise estimates of characteristics of the whole population quantities can optimally be obtained by taking the stratified random sampling. In a stratified sampling, the sample reflects the population with respect to the stratification variable (loans). In other words, the sample in each stratum is the miniature version of the population, therefore, we used the "**proportional allocation**" to design the sample.

The following Table shows the stratified random samples sizes of each stratum with proportional allocation. The selection of the six cities is based on their high concentration of women engaged in entrepreneurial activities and significant microfinance outreach, making them representative hubs for examining women borrowers' progress and empowerment across both urban and peri-urban contexts.

Table: 1 Sample Design

Stratum	PRSP (No of active Borrowers)	Akhuwat (No of active Borrowers)	Stratified Random Sample of PRSP (Rural)	Stratified Random Sample of Akhuwat (Urban)
Faisalabad	4983	598	89	72
Gujarat	4459	484	80	59
Gujranwala	-	822	-	99
Lahore	4422	168	79	20
Sargodha	3491	657	62	80
Sialkot	10642	578	190	70
Total	**27997**	**3306**	**500**	**400**

The focused age group lies between the age group of ***15-64***. Furthermore, that sample is categorized into whether majority belongs to rural or urban areas of Punjab. Moreover, the analysis also focuses on what type of entrepreneurial activity was started with the help of that loan to know the trend of industry with which these women are engaged i.e. either handicraft, manufacturing or some else which will be found after interviewing those as well. However, the focus of the study is the women entrepreneurs of six mega cities. The main purpose of this study is to evaluate the impact of such financial assistance on the well-being of women and their status. Status here refers to the progress and empowerment of the women. The research question is that if the statistics are depicting the fact that the number of women borrowers from MFIs is increasing on yearly basis then what are the main social, economic & environmental and technical hurdles in their progression and empowerment? SPSS and Smart Partial Least Squares (PSL) have been used for evaluating the impact of responses collected through questionnaires. PSL is a specialized software and an extended version of SPSS which is used when we aim to find the impact of a category on another category made up of various constructs. In this study, various sub-indices are made to with the help of defined categories in questionnaire and then with the help of those sub-indices, index of progress and empowerment has been constructed to evaluate the impact of progress of women entrepreneur on their empowerment. The details about these indices are given below in the section of Descriptive Analysis.

7.2. Questionnaire

The present research used three questionnaires in total, each of which covers various dimensions of the study. To identify the factors which are becoming hurdles in the progress, two sets of questionnaires following Huxhiu[4] (2015) are used. First is based upon the existing literature review highlighting the factors on the basis of which the economic

[4] www.cek.ef.uni-lj.si/magister/Haxhiu1846-B.pdf

decision of these women entrepreneurs can be based. The second questionnaire is prepared by augmenting already available one in literature applied by Duflo (2012) and (Javed & Prawiromaruto, 2025) to know more about the nature of obstacles these women borrowers can face in using microfinance loans for setting up their business ventures. However a third one is also added in this study which is measuring the empowerment of women who are obtaining these loans using the indicators provided by International Centre for Research on Women (ICRW). The detailed questionnaires can be provided upon request. The responses from the three questionnaires were first standardized using a normalization technique (e.g., min–max scaling/z-scores) to ensure comparability across different measurement scales. Subsequently, the normalized indicators were aggregated into composite indices using appropriate weighting (equal/empirically derived), thereby enabling a consistent and unified measure of women's entrepreneurial progress and empowerment. Further equal weighting to avoid subjective bias or empirically derived weights (e.g., factor loadings/principal component analysis) to reflect the relative contribution of each dimension, thereby ensuring robustness and consistency in the construction of the main indices.

8. Descriptive Analysis

The collected data is analyzed using both descriptive statistics and econometric models. SPSS is used for calculating the descriptive statistics of the collected data. Response on each question is tabulated after coding the questions properly. In this section descriptive statistics are explained in proportions for each categorical variable i.e. rural, urban, progress, otherwise and for empowerment and non-empowerment of women. The findings showed that majority of the respondents were falling under the category of 'can't read and write' i.e. 71%, 21% under matriculation, 4% intermediate, 2% under graduation and only 2 had their access to university. The maximum number of respondents were under the age bracket of 35-44 out of which 83% were married. Most of the women who were in sample expressed that these started their own business because of having no other option for them to fight with their poverty as the family size is above than five members. The majority took the loan of the amount between this range 15,000-30,000 and were engaged in goods sector. 639 respondents out of 900 were sole proprietors and to access financial support was easy for them. Women borrowers supported that these have easy access to right people for help in their business and there is no such obstacle found related to credibility and trust in the working environment. The major obstacle for them was to create balance between their domestic and work life. Majority responded that they lack the opportunity to learn from training and whatever they acquire this comes from the experience of their family. Personal savings and bank loans remained important sources of their financing and survey reported that these women agreed financial and banking institutions have been very supportive for them in taking business initiative. Progressed women borrower gave credit of their success in business first to the supportive role of their husbands and afterwards guidance from women entrepreneur associations in providing them business advice.

In case of economic and environmental factors, majority supported easy access to financial support, information and markets for their products. Majority disagreed that their business is supported by government bodies. Responses against business registration and interest rates charged by MFIs and MFBs were satisfactory. These women agreed that taxes on their businesses are reasonable and these faced very minimum gender bias in their working environment. Majority responded that they did not find any cultural barrier in opening their own ventures.

Table 2 shows the percentage of samples collected from each city.

Table: 2 Valid Samples from Six Districts

	Rural	Urban	Total	Percentage
Lahore	79	20	99	11%
Gujranwala	0	99	99	11%
Sialkot	190	70	260	29%
Faisalabad	89	72	161	18%
Gujarat	80	59	139	15%
Sargodha	62	80	142	16%
	500	400	900	100

The figures in this Table 2 report the percentage of responses received from each city. Sample proportion of Sialkot is higher because this city is having large chunk of our self-employed women. Afterwards Sargodha and Gujrat can be seen as providing these borrowers with better chances for opening their business. These two cities have much

importance for their domestic industries falling into informal sector. Our women have more chances for finding its place in informal sector due to less procedural formalities for entering business and lower level of education. Moreover, from sample it has been observed that much of the portion of such loans is obtained by our rural women who even does not know how to read and write. For them informal sector is the last hope of creating their source of income. Now the sections (9.1& 9.2) given below explain very important part of this study i.e. construction of progress and empowerment index which have been developed following the theoretical footings provided by international organizations (explained in the sections given below). This brings novelty in the study.

8.1. Construction of Progress Index

Index of progress has been calculated with the help of four sub-indices i.e. decision-making index, economic life index, family life index and health index. Decision making index covers various constructs i.e. participation in taking decisions about spending, easy access to funds and no obstacle in free mobility of these women to visit business associates, economic life index includes the saving and income structures of these women and share of income being spent on herself and children, family life index is composed of factors i.e. husband support, ability to negotiate with their husbands, extent of domestic violence and lastly health index is constructed using the perceptions of respondents regarding the impact of their entrepreneurial activities on health condition, improvement in nutritional level and extent of happiness being added in to their lives after receiving those loans. After calculating each sub-indices and assigning equal weightage of 25% to each category, we reach at the final estimates of progress index ranging from 0-1. '1' is indicating 'progress' and is assigned to all values above than '0' and the minimum value '0' indicates 'otherwise' category which contains all negative values of the calculated index including 0 itself showing the proportion of women who have not shown any progress even after obtaining loans and setting up their own sources of income. Now Table 3 depicts the overall findings of both city and location of business wise in the context of both categories i.e. progress and otherwise. This Table is very illustrative as this is not only reporting the status of the women falling in these two categories rather it further explains the proportion of progressed women both rural and urban region wise.

Table: 3 Distribution of Entrepreneurs on the basis of Growth Experience			**location of business**		**Total**
			Rural	**Urban**	
Lahore	Status	Otherwise	39	11	50
		Progress	40	9	49
	Total		79	20	**99**
Gujranwala	Status	Otherwise	NA	51	51
		Progress	NA	48	48
	Total		NA	99	**99**
Sialkot	Status	Otherwise	87	24	111
		Progress	103	46	149
	Total		190	70	**260**
Faisalabad	Status	Otherwise	61	45	106
		Progress	28	27	55
	Total		89	72	**161**
Gujarat	Status	Otherwise	34	23	57
		Progress	46	36	82
	Total		80	59	**139**
Sargodha	Status	Otherwise	10	57	67
		Progress	52	23	75
	Total		62	80	**142**
Total			**500**	**400**	**900**

Overall, the percentage of progressed women in Lahore is found 49 % out of which 40% lies in rural areas and 9% in Urban. In case of Gujranwala the data was not available for rural women however rate of progressiveness among women borrowers is 48% in this city. In Sialkot, more than 57% women are found progressed after obtaining these

loans and becoming entrepreneur. However again higher rate is found for women entrepreneur in rural areas i.e.40% out of 57%. This rate has been 34% for Faisalabad and proportion of this progress both in rural and urban areas is observed almost same. While in case of Gujrat and Sargodha, the proportion of progressed women is found 60% and 53% respectively again with higher proportion in rural areas. From these results, it seems very clear that such loans have really helped our rural women to be more prosperous and successful in their lives and these can be a great source for eradication of poverty from such households.

8.2. Construction of Empowerment index

Empowerment is a subjective measure and is difficult to define it in absolute terms. However, empowerment can be any one of these factors like extent of power, gender equality, asset control, easy access to education etc. Keeping in view this diversified nature of empowerment, this study has attempted to develop an index of empowerment which is composed of ten sub-indices which includes various constructs like share of ownership, free mobility, access to information and technology, gender norms, educational attainment and access to business skills, marketing opportunities, , income status, consumption risks these have to face, working environment and prosperity indicators measured through improved individual, family, housing, property, health and nutritional status out of their entrepreneurial activities. This index again like progress index contains values ranging from positive to negative figures. However, in the same manner as done previously, these calculated values are converted into dichotomous variables i.e. 0-1. All positive values and greater than 0 are assigned vale '1' showing empowerment and all negative values including 0 are assigned value '0' showing no empowerment. Table 4 is now the extended version of Table 3 with the addition of empowerment status of these women borrowers further. Here both progress and empowerment levels are cross tabulated just to get the answer for the hypotheses of the study.

Table 4: Distribution of Entrepreneurs on the basis of Empowerment			location of business		Total
			Rural	Urban	
Not Empowered	Status	Otherwise	177	163	340
		Progress	86	53	139
	Total		263	216	479
Empowered	Status	Otherwise	54	48	102
		Progress	183	136	319
	Total		237	184	421
			500	400	900

From the Table, we can see that overall, 47% of women out of total sample are empowered with the help of these microfinance loans and the higher proportion of this empowerment falls under the category of progressed women within the rural area. In case of describing the 'not empowered' category, it is obvious from results that the large pie of such women is falling under the category of 'otherwise'. This shows that empowerment is associated with progress of women after setting up her business, but if she remains unable to improve herself in those four domains defining progress here in this study then she will never be able to be empowered.

Now Table 5 reports city wise the empowerment and progress of the women in detail. It is found that in case of each city highest rate of empowerment of women is associated with progress of women. 81% in Lahore has been observed, 73% in Gujranwala, 78% in case of Sialkot, 54% for Faisalabad, 79% for Gujrat and 83% for Sargodha. All these findings are showing that empowerment is conditioned to the progress status of a women which she obtains out of her business activity contacts.

Table 5: City Wise Distribution of Entrepreneurs on the basis of Empowerment & Growth Experience

Area	Empowerment			location of business		Total
				Rural	Urban	
Lahore	Not empowered	Status	Otherwise	33	11	44
			progress	20	3	23
			Total	53	14	67
	Empowered	Status	Otherwise	6	0	6
			progress	20	6	26
			Total	26	6	32
Gujranwala	Not empowered	Status	Otherwise	NA	36	36
			progress	NA	7	7
			Total	NA	43	43
	Empowered	Status	Otherwise	NA	15	15
			progress	NA	41	41
			Total		56	56
Sialkot	Not Empowered	Status	Otherwise	60	16	76
			progress	18	6	24
			Total	78	22	100
	Empowered	Status	Otherwise	27	8	35
			progress	85	40	125
			Total	112	48	160
Faisalabad	Not empowered	Status	Otherwise	49	35	84
			progress	13	16	29
			Total	62	51	113
	Empowered	Status	Otherwise	12	10	22
			progress	15	11	26
			Total	27	21	48
Gujarat	Not Empowered	Status	Otherwise	26	17	43
			progress	20	10	30
			Total	46	27	73
	Empowered	Status	Otherwise	8	6	14
			progress	26	26	52
			Total	34	32	66
Sargodha	Not Empowered	Status	non-progress	9	48	57
			progress	15	11	26
			Total	24	59	83
	Empowered	Status	non-progress	1	9	10
			progress	37	12	49
			Total	38	21	59
				500	400	900

After descriptive statistics, one way Analysis of variance (ANOVA) test is also performed to determine whether there exist any significant differences between the means of two independent and unrelated categories i.e. progress and otherwise in the present analysis. These values of F-Statistics confirms that there exists significant difference between progressed and empowered women with reference to their demographic, income, family size, economic, technical and social factors, and power and agency indicators.

8.3 Econometric Mode: Partial Least Square Structural Equation Modeling

Now this section covers the parametric analysis between the desired dependent and independent variables. For this purpose, partial least square structural equation modeling techniques have been applied using two models i.e. measurement model and structural model

8.3.1 Measurement Model

In measurement model, two analyses were performed to check the validity of the selected econometric model i.e. common factor analysis and confirmatory factor analysis (CFA). These analyses were performed and their detail is presented as following one by one.

8.3.1.1 Common Factor Analysis

Common factor analysis is the first step of measuring the desired model. At this stage, the importance of all constructs are verified with the help of which both dependent variables and various dimensions which can impact progress are determined. This is done by checking outer loading for each variable included in model. Outer loadings show correlation of observed variables with their respective latent5 construct. As per criterion, if the resultant value of outer loading is below 0.50 then that item is dropped (Hair et al., 2022). The common factor analysis of study variables (i.e. Progress, Environmental and Economic factors, technical factors, Social and Personal factors, and empowerment) is as below. Table 6 shows this test for progress variable of the present study.

8.3.1.1.1: Progress (Dependent Variable)

The first variable of the study is progress which is measured through 4 items i.e. P1 (decision making index), P2 (family life index), P3 (economic life index), and P4 (health index), and not a single item is dropped due to poor outer loading as below which is recorded at 0.50. The range of outer loading of these items is 0.513-0.876 and our four components fall within the acceptable range. Results are presented in following Table 6.

8.3.1.1.2: Environmental and Economic Factors. The second variable of the study is Environmental and Economic factors which is denoted as ENVECO. Environmental and Economic factors are defined as easy access to loans, markets, business, information and technology, raw materials, managerial skills, experience in business ownership, ownership of land, inherited capital and optimism. All these components are 11 in total and each of these are labelled as i.e. ENVECO1, ENVECO 2, ENVECO 3, ENVECO 4, ENVECO 5, ENVECO 6, ENVECO 7, ENVECO 8, ENVECO 9, ENVECO 10, and ENVECO 11 but five items i.e. ENVECO 1, ENVECO 2, ENVECO 7, ENVECO 8, and ENVECO 11 are dropped due to poor outer loading as below 0.50. So, Environmental and Economic factors are examined by 6 items i.e. ENVECO 3, ENVECO 4, ENVECO 5, ENVECO 6, ENVECO 9, and ENVECO 10. The range of outer loading of these items is 0.55-0.89. Results are presented in following Table 7.

Table 6: Outer Loading of Progress

Description	Item[6]	Outer Loading
Economic Empowerment	P1	0.739
Family life	P2	0.876
Health improvement	P3	0.513
Decision making	P4	0.566

[6] P1, P2, P3, P4 are the same sub-indices which have been explained in the above section.

Table 7: Outer Loading of Environmental and Economic factors

Description	Item	Outer Loading
Access to business trainings	ENVECO 3	0.879
Access to information and networks	ENVECO 4	0.890
Possess managerial skills	ENVECO 5	0.878
Have experience in business ownership	ENVECO 6	0.819
Inherited capital from my business	ENVECO 9	0.663
Access to raw material	ENVECO 10	0.550

8.3.1.1.3: Technical factors

The third variable of the study are technical factors which is denoted as TECH. Technical Factors include support by the government, approach to policy makers, business procedures, interest rates on loans, grants, and taxes charged by the government on business. These are 8 in total and labelled as TECH 1, TECH2, TECH3, TECH4, TECH5, TECH6, TECH7, and TECH8, however four items i.e. TECH 3, TECH 4, TECH 5, and TECH 6 are dropped due to poor outer loading as below 0.50. So, psychological empowerment is examined by remaining 4 items i.e. TECH 1, TECH 2, TECH 7, and TECH 8. The range of outer loading of these items is 0.79-0.85. Results are presented in following Table 8.

Table 8: Outer Loading of Technical Factors

Description	Item	Outer Loading
Business is supported by Government bodies	TECH1	0.79
Access to policy makers	TECH2	0.80
Beneficiary of Government grants	TECH7	0.85
Taxes charged on my business are reasonable	TECH8	0.83

8.3.1.1.4: Social and Personal Factors

The fourth variable of the study are Social and Personal factors which is denoted as SOCPER. Social and Personal factors are defined as gender biases, societal perspective regarding business, contacts and networking, support of family and friends and is measured through 9 items i.e. SOCPER 1, SOCPER 2, SOCPER 3, SOCPER 4, and SOCPER 5, SOCPER 6, SOCPER 7, SOCPER 8, and SOCPER 9 but no item is dropped due to poor outer loading as below 0.50. So, Social and Personal factors is examined by 9 items. The range of outer loading of these items is 0.583-0.748. Results are presented in following Table 9.

Table 9: Outer Loading of Social and Personal factors

Description	Item	Outer Loading
Have no prejudices and gender biases	SOCPER 1	0.648
Attitude of society towards my business is positive	SOCPER 2	0.625
Have good and progressive relationship with men entrepreneurs	SOCPER 3	0.691
Have better contacts and networks	SOCPER 4	0.729
I am not affected by gender discrimination	SOCPER 5	0.748
I have support from my family and friends	SOCPER 6	0.616
I have enough time to spend with my family and friends	SOCPER 7	0.583
Low level risk taking attitude is another factor affecting women's decision to enter the business	SOCPER 8	0.657
I have no cultural influence in my business	SOCPER 9	0.634

8.3.1.1.5: Empowerment

The fifth variable of the study is Empowerment and is measured with the help of ten factors reported in the section of the construction of empowerment index. These are labelled as e.g. EMP 1, EMP 2, EMP 3, EMP 4, EMP 5, EMP 6, EMP 7, EMP 8, EMP 9, and EMP 10 but three items i.e. EMP 4, EMP 8, and EMP 9 have dropped due to poor outer loading as below 0.50. So, Empowerment is examined by remaining 7 items i.e. EMP 1, EMP 2, EMP 3, EMP 5, EMP 6, EMP 7, and EMP 10. The range of outer loading of these items is 0.507-0.776. Results are presented in following Table 10.

Table 10: Outer Loading of Empowerment

Description	Item	Outer Loading
Control over resources	EMP 1	0.527
income	EMP 2	0.776
consumption	EMP 3	0.574
Productivity	EMP 5	0.507
Business practices	EMP 6	0.626
Prosperity	EMP 7	0.660
Mobility	EMP 10	0.521

8.3.1.2: Confirmatory Factor Analysis

At second step, confirmatory factor analysis (CFA) was examined for all latent variables (i.e. Progress, Environmental and Economic factors, technical factors, Social and Personal factors, and empowerment). This analysis supports to examine internal consistency[7], convergent validity[8], and discriminant validity[9] of all latent variables. 12 items were dropped due to low outer loading and finally 23 items included in study (outer loading > 0.50). Confirmatory factor analysis is as follows.

8.3.1.2.1: Internal Consistency; Cronbach Alpha

Internal consistency which examines reliability was tested first for theoretical model. Two methods are used for testing this internal consistency (i.e. Cronbach alpha and composite reliability). These are presented below.

Cronbach alpha is used to test the internal consistency initially. Cronbach alphas provide estimation of reliability by utilizing correlation between research variables with assumption that equal reliability lie between variables. Cronbach alpha of research variables ranged between 0.613-0.873. Results characterize high internal consistency as Cronbach alpha of variables is upper than threshold of 0.60 recommended by (Fornell & Larcker, 1981). Table 11 reports the results of the reliability test.

Table 11: Results of Cronbach Alpha

Variable	Cronbach Alpha
Progress	0.613
Environmental and Economic factors	0.873
Technical factors	0.837
Social and Personal factors	0.839
Empowerment	0.709

Following the rule of thumb i.e. if the value of this statistic is higher than 0.60 then it means used variables are reliable to be entered into econometric model. Here we can see that for each latent variable which is composed of various constructs is showing value of test higher than 0.60 proving internal consistency of the variables used in analysis.

8.3.1.2.2: Composite Reliability

Composite reliability is another test used to test internal consistency of research variables. Outer loadings are used to gauge composite reliability. (Arnold & Reynolds, 2003) suggested that if the value of test lies between 0.68-0.93 then it means model contains high internal consistency. As per our estimation, this value is above 0.70 which is the again an indication of internal consistency. Table 12 reports the results of this test performed for variables used in this study.

7 Cronbach alpha is used to test the internal consistency initially. Cronbach alpha provides estimation of reliability by utilizing correlation between research variables with assumption that equal reliability lies between variables.

8 Convergent validity is the extent to which a measure correlates positively with other measures (indicators) of the same construct. To establish convergent validity, researchers consider the outer loadings of the indicators, as well as the average variance extracted (AVE).

9 Discriminant validity is the extent to which a construct is truly distinct from other constructs by empirical standards.

Table 12: Results of Composite Reliability

Variable	Composite Reliability (CR)
Progress	0.774
Environmental and Economic factors	0.907
Technical factors	0.889
Social and Personal factors	0.874
Empowerment	0.798

8.3.1.2.3: Convergent Validity

This is another test to check the reliability of the variables proposed to use in theoretical model of the study. For this purpose, Average variance extracted (AVE) is used which will test the convergent validity. Existing literature (Carlson & Herdman, 2012) suggests if the value of this estimate is above than 0.40 then it shows convergent validity. However for the present study these values are in the range between 0.336-0.668 showing validity of the latent variables of the study. Table 13 shows the results for the test explained above.

Table 13: Results of Convergent Validity

Variable	Average Extracted Variance (AVE)
Progress	0.474
Environmental and Economic factors	0.625
Technical factors	0.668
Social and Personal factors	0.437
empowerment	0.366

These two test i.e. Composite reliability and Average variance extracted, are related to the quality of the measures used in the study and their estimated values proves this for the variables of present study.

8.3.1.2.4: Discriminant Validity

Finally, discriminant validity concerns with degree of difference among measures of different constructs. Discriminant Validity actually determines whether the variables in the model are highly correlated among them or not. It compares the Square Root of AVE of a particular variable with the correlation between that variable with other variables, a measure proposed by Fornell et al. (1996). According to this if the value of Square Roof of AVE is higher than the correlation then it means there exists the validity of variables used for analysis. Secondly its value must be greater than 0.5 and above the correlation coefficients for each type of other variables (values not in bold). Results given in Table 14 showed that square root of AVE are above correlations values of research variables.

Table 14: Results of Discriminant Validity

Constructs	EMP	ENVECO	PROGRESS	SOCPER	TECH
Empowerment	**0.605**				
Environmental and Economic factors	0.53**	**0.79**			
Progress	0.293**	0.476	**0.689**		
Social and Personal factors	0.493**	0.330	0.51**	**0.661**	
Technical factors	0.412	0.61**	0.331	0.167	**0.817**

**. Correlation is significant at the 0.01 level (2-tailed)

Bold values on the diagonal represent the square root of AVE of respective variables. In case of first variable which is empowerment. We can see its square root of AVE is above the values of correlations with other variables in the same vertical column. Similarly for other variables too, the same pattern of relationship between AVE and correlations can be observed from the Table proving the fact that all variables used in the study are valid for developing an econometric model. Below in Table 15 is given the summary of all these pre-estimation tests to get a quick glance for further steps.

8.4: Summary of Measurement Model

Summary of all results of measurement model (i.e. common factor analysis and confirmatory factor analysis) are presented in the following Table 15. First column shows the labels of variables used in the study, second confirms the validity of constructs with the help of which those five variables are constructed. For example, environmental and economic factors included 11 constructs and out of those six were found to be reliable for measuring the effects of these environmental and economic factors. Column three shows the criteria for outer loadings i.e. each value must

be greater than and equal to 0.5. Next three columns are informing us about the internal consistency and reliability of these five variables as per the tests recommended in past literature. The statistics of each test validated the inclusion of these variables for further theoretical model.

Table 15: Summary of Measurement Model

Latent Variables	Items Retained	Outer Loading	Cornbrash Alpha	CR	AVE
Progress	P1, P2, P3, and P4	0.513-0.876	0.613	0.774	0.474
Environmental and Economic factors	ENVECO 3, ENVECO 4, ENVECO 5, ENVECO 6, ENVECO 9, and ENVECO 10	0.55-0.89	0.873	0.907	0.625
Technical factors	TECH 1, TECH 2, TECH 7, and TECH 8	0.79-0.85	0.837	0.889	0.668
Social and Personal factors	SOCPER 1, SOCPER 2, SOCPER 3, SOCPER 4, and SOCPER 5, SOCPER 6, SOCPER 7, SOCPER 8, and SOCPER 9	0.583-0.748	0.839	0.874	0.437
Empowerment	EMP 1, EMP 2, EMP 3, EMP 5, EMP 6, EMP 7, and EMP 10	0.507-0.776	0.709	0.798	0.366

The interpretation of estimated coefficients is further elaborated by explaining both their magnitude and direction in economic terms. The results indicate that social and personal factors exert the strongest influence on women's progress, followed by economic and environmental factors, while technical factors show a comparatively modest effect. Moreover, the high and significant coefficient of progress in the empowerment equation confirms that improvements in entrepreneurial outcomes substantially enhance women's empowerment levels, which is consistent with prior empirical findings (Banerjee et al., 2015; Kabeer, 2005).

8.5: Structural Model

After meeting all requirements of pre-estimation tests in above sections, now structural model is tested for research hypotheses. Recalling the objectives of the study here again, first was to find the important dimension of factors which can affect the progress of women borrower and second to see the impact of this progress on their economic empowerment. Graphical representation of Structural model is presented in Figure 2 given below.

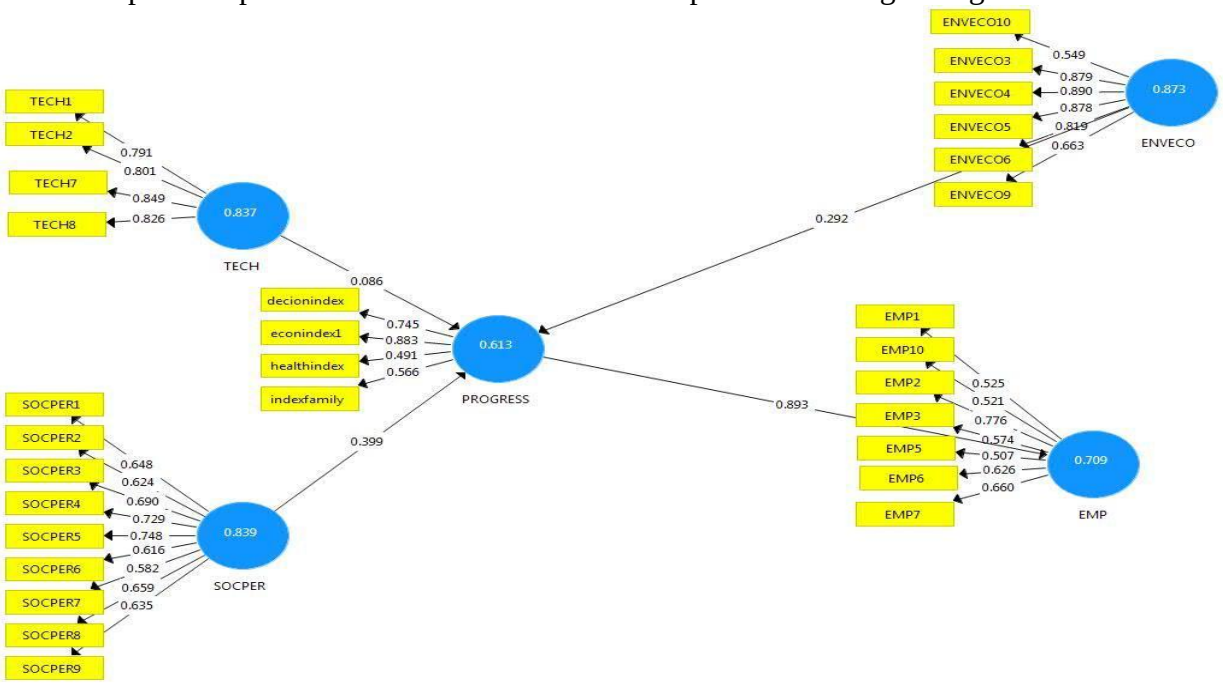


Figure: 2 Graphical representations of structural model based on author's estimation

The structural model presents the mean score of five latent variables. Out of these variables, Environmental and Economic factors, technical factors, and Social and Personal factors, are taken as independent variables in measuring

those equations where the objective was to measure the factors supporting or restricting progress of our women borrower and entrepreneur. These can also be regarded as exogenous variables which are not being affected by any other variable included in the model rather than these are assumed to be given. Progress in case of first objective is treated as dependent variable while for second objective empowerment is used as dependent one. Now with the help of these variables model is estimated in Table 16. These coefficients reports 'direct effects' of these variables.

Table 16: Estimation of Model

Hypotheses	Path	Path Coefficient	Standard Error	t Statistics	p Value	Decision
H1	ENVECO➐Progress	0.292	0.035	8.303	0.00	Accepted
H2	TECH➐ Progress	0.086	0.035	2.482	0.013	Accepted
H3	SOCPER➐ Progress	0.399	0.030	13.310	0.00	Accepted
H4	Progress ➐ Empowerment	0.893	0.005	172.22	0.00	Accepted

8.6: Discussion of results

Table 16 reports the path coefficients against each designed hypothesis. These findings are consistent with prior empirical studies, which emphasize the critical role of social support, access to finance, and institutional conditions in shaping women's entrepreneurial success and empowerment. The strong influence of social and personal factors aligns with existing literature highlighting the importance of family support, social acceptance, and networks in developing economies, thereby reinforcing the validity of the study's results in a broader context. When progress is regressed for environmental and economic factors then it can be seen from results that 29% of the progress is affected by those five factors which were found reliable and valid with the help of composite, convergent and discriminant validity tests for the variable labelled as ENVECO. As it was hypothesized that environmental and economic factors significantly affect progress of microfinance borrowers hence estimated coefficient revealed that these factors have positive impact on progress of women borrowers both in rural and urban areas. Most women entrepreneurs recorded their positive opinion for having their access to loans and finance for their business and negated that they took start from inherited capital from their family. Moreover, under this category, these women shed light on this bitter reality that these face issue in have access to correct information and building networks which ultimately restrict their progress and growth in their business. Likewise, these reported no role of technology in their business activity and clearly no know-how about social media for networking. When the model was run for keeping TECH variable as independent one then we can see very meagre impact of this category of factors on the women well-being in Panjab i.e. 8% confirming the alternative hypothesis that technical factors have positive impact on progress. However, respondents provided majority of their opinion in support of the construct that they have been facilitated to take loans without much technical formalities which include collaterals. And showed least interest of the govt. bodies to play their role in this regard. They reported during the questionnaire filing process that there are no steps from the govt. to give them relief through policymaking regarding small businesses. Moreover, the respondents highlighted this factor that they have no interactions with those people who can give them better advice and guidance with respect to business decisions. They found missing role of such policy makers who can drag these small, scaled women entrepreneur along with them for bringing change in their lives. In case of third variable i.e. SOCPER we see that it has larger impact on progress of women in our analysis. Here under this category, women respondents emphasized on the positive role society towards their business and the optimistic ole and support of their families in this regard. They claimed through their responses that no gender biases these women had to face for setting up their businesses and rejected this opinion that low-level risk-taking attitude keeps women away from entering business. Hence in the end based on path coefficient of this variable our third alternative hypothesis is also confirmed i.e. Social and personal factors have positive impact on progress of women. Now to fulfill the second objective of the study and see whether this progress is contributing towards the empowerment of women or not, fourth equation is measured taking progress as independent variable and knowing its impact on empowerment of women entrepreneur. The path coefficient of 0.893 shows a highly significant and strong association between progress and empowerment in the model supported by distinct construct measurement and satisfactory discriminant validity results (Fornell & Larcker, 1981; Henseler et al., 2015). All this confirms the validity of fourth hypothesis that progress of microfinance borrowers significantly affects their Empowerment.

9: Conclusion and recommendation

9.1: Conclusion

This study moves beyond a descriptive summary of findings by stating the results within broader theoretical frameworks of women's empowerment and entrepreneurship. The strong relationship between entrepreneurial progress and empowerment reinforces the core premise of Human Capital Theory and Gendered Institutions Theory, suggesting that access to resources alone is insufficient unless supported by enabling social structures and institutional environments. The dominant role of social and personal factors further highlights the relevance of Intersectionality Theory, where empowerment outcomes are shaped by overlapping socio-cultural constraints and opportunities.

Moreover, the findings contribute to the ongoing debate in microfinance literature by demonstrating that empowerment is not an automatic outcome of financial access but is mediated through progress in entrepreneurial activities. This aligns with capability-based perspectives, emphasizing that real empowerment occurs when women can translate resources into meaningful agency and decision-making power. Therefore, the study not only empirically validates existing theories but also extends them by providing context-specific evidence from a developing economy, underscoring the multidimensional and process-driven nature of women's empowerment. Approximately 143 constructs are used to identify separately various types of impediments and facilities these women face in their field work then these are distributed under the broad headings of segregation given above. The analysis covers the province of Punjab and its six cities i.e. Sialkot, Faisalabad, Sargodha, Lahore, Gujrat and Gujranwala. Furthermore, the analysis is disaggregated into rural and urban divide. Urban borrowers are covered through Akhuwat which is the largest lending microfinance institution while information about rural women borrower is collected from Punjab Rural Support Program. Sample of 900 is selected through principle of proportional allocation in each city and SPSS along with Smart Partial Least Squares (PSL) software has been used for evaluating the impact of all these factors on the progress of women entrepreneur and then the impact of this progress on their empowerment. Two indices progress index and empowerment index are developed with the help of 4 & 10 sub-indices ranging from 0-1, 0 shows minimum level of progress and empowerment and 1 shows maximum level of progress and empowerment. Based on these two indices, descriptive analysis is done district and location of business wise. Parametric and non-parametric techniques are used for evaluating data. Findings of model confirmed the direct relationship between social, technical and economic & environmental factors and progress and supported the alternative hypothesis that progress of these women borrowers is helping them to improve their economic empowerment.

Majority of women confirmed that these own 100% assets regarding their business. The descriptive statistics also showed that the most of these women have maximum involvement in decision making process of household. Role of social media has been seen nowhere for them to access information while telephonic way of communication has been very helpful in networking. Mostly progressed women strongly agreed that such loans have improved their well-being both health and wealth wise.

However, the impact of Social & Personal construct found to be quite stronger via path coefficients in the progress of women borrower as compared to the other two. Further women entrepreneurs reported that the positive attitude of the society stood important factor for their progress and gave less weights to the impact of gender bias in their way to grow. From Economic & Environmental factors, easy loan and market access were regarded as the most effective tools for them in taking their business decisions while the role of ***information technology*** and ***role of training*** was highlighted as missing for them. Lastly form technical factors these women have given more priority to the easy access of loan without the title of asset as collateral as one of the major supporting factors in their business and showed their least concern towards the role and access to the policymakers.

9.2: Policy Implications

The policy recommendations are directly derived from the empirical findings of the study. Given the dominant role of social and economic factors, policymakers should prioritize initiatives that enhance access to finance, strengthen social support systems, and improve training opportunities for women entrepreneurs. Additionally, addressing institutional and technical barriers through inclusive policies and improved governance mechanisms can further amplify the positive impact of microfinance on women's empowerment.

- For improving further, the effect of environment and economic factors, such policies should be devised which could facilitate these women borrowers for getting professional trainings and help them in easy access to information. Moreover, networking is also one of the issues which restricts them in their contact building. For this purpose, efforts must be made by such MFIs to introduce IT workshops for these borrowers weekly/monthly to get know how about the use of technology because most of the respondents reported that these are unaware of the use of social media technique of assessing information. If such measure is adopted for understanding the use of new technology, then the rate of progress of these women can be enhanced more.
- In case of the impact of technical factors on the progress of women, the analysis highlighted the missing role of govt. bodies in providing assistance for their entrepreneurial activities therefore the govt. must play its role in terms of easy access to finance from banks without the requirement of collaterals and easy accessibility towards policy makers in women associations. Hence such steps can enhance the positive impact of technical factors on the progress of women entrepreneur.

- As the study has shown that social and personal factors are very supportive in nature for our women entrepreneurs for the progress therefore the govt. should make efforts to continue its tight control in reducing the gender prejudices and this can be addressed by arranging time to time seminars/awareness schemes for them where such women can have chance for sharing their obstacles with each other and can find many ways for their solution.

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