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UTILIZATION OF AGRICULTURE CREDIT BY MARRIED WOMEN: DOES THE HUSBAND MATTER?

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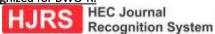
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Abstract

The current study presents an investigation of the utilization of agriculture credit by married women in Pakistan. The purpose of this study is to investigate how husbands in Pakistan's Punjab and Sindh provinces assist their wives in obtaining and using agricultural finance. The current research used descriptive analysis, correlation analysis, and binary logistic regression analysis, among other statistical techniques, to examine the differences and similarities between the two provinces, utilizing primary data from the adopted and modified questionnaire of Tisdell et al. (2020). The findings indicate that men significantly influence the amount of agricultural funding that their wives can obtain. It turned out that husbands in Sindh province support their wives' savings and investments more than do husbands in Punjab province. The study found that the fact that some husbands in both regions exploit their wives' credit for personal benefit may reduce the benefits and empowerment of women in agriculture. Furthermore, the findings of the study identified several factors that affect women's capacity to get and use credit, including income, education, land ownership, household size, and societal norms.

Keywords: Agricultural, Finance, Investment, Ownership, Investments.

Introduction

Agriculture is very helpful in the fight against extreme poverty and hunger in developing countries. The ways to do this include the growth of the GDP of the country, the employment generation, and the guarantee of food security. Mostly, it relies on the achievement of the Millennium Development Goals (MDGs) and sustainable development (Sporchia, F et al, 2024). Aiming for higher output, agriculture is increasingly switching from more traditional to more modern techniques (Chandio et al., 2017a; Hussain and Thapa, 2012; Sagib et al., 2018).

Every rise in agricultural output requires modernizing the input and technology elements of agricultural methods. Financing is a major source of the modern technology that the agricultural business requires to continue growing. Formal agricultural finance is an important farm input that boosts crop outputs combined contemporary when with technology, therefore promoting agricultural modernization and economic advancement. Official agricultural loans are not just necessary for the survival of small and medium-sized farms; large-scale farmers can benefit from them to increase farm income with limited reserves. This is true since bigger farmers can cover more ground (Das et al., 2017). The study by Seibel & Parhusip (2019) demonstrates how to assure food security, improve economic outcomes, and eradicate poverty by fairly distributing formal agricultural loans to small farmers. Many socioeconomic factors affect where a smallholder farmer looks for a loan. Age, degree of education, size of farm, number of animals, and income from off-farm are among the factors taken into consideration. To explain a wide range of socioeconomic aspects related to the availability of government loans to small-scale farmers, numerous studies have been conducted in developing nations. According to a 2019 study by Seibel and Parhusip, the primary favourable characteristics influencing smallholders' access

to financial sources are well-known elements including education, extension services, and paid agricultural iobs. Once the logistic model was applied, the researchers observed that to expedite the lending process and transaction completion, loan and credit offices should be located near farmers. Furthermore, Tisdell et al. (2010) found that smallholder farmers are more vulnerable than other potential clients since formal banking institutions consider them. They discovered that important variables were smallholder farmers' age, savings in formal financial institutions, and level of education. Age has been linked favourably to smallholder farmers' access to credit; other studies have demonstrated that it also favourably affects farmer savings, the number of daily meals eaten at home, the length of the loan payback, and the size of the household. In their 2021 research, Nguyen & Canh discovered that the factors significantly following influence smallholder farmers' access to credit: size of cultivated land holdings, availability of agricultural extension services, formation of groups or provision of collateral, number of livestock owned by smallholder farmers, prior credit experience from a formal financial institution, and membership in a multipurpose farmers' cooperative. Furthermore, number of animals that smallholder farmers own was found by Malik & Shrestha's (2019) study to be a significant motivating element. Using econometric analysis as the primary study tool, the primary goal of this work is to investigate the credit needs of women in Sindh and Vehari districts as well as the role played by husbands in obtaining and using such loans. Advocates of women's microfinance argue that it is an effective way to empower women, accelerate economic growth, and reduce poverty (Lorenzini, 2021; Nouman et al. 2013). Hay, K., et al (2019) reported in their study that empowering individuals is challenging since it disrupts pre-existing gender relations and may result in unexpected effects. If actions to increase people's living standards are not well considered and implemented, they may have unintended consequences. For example, programs aimed at improving women's lives and providing them with economic autonomy can increase women's power, but the same interventions can also alter gender relations, exacerbating domestic violence (Jurik et al., 2019). Economic empowerment challenges feudalism and accelerates the process of redefining rigidly defined gender roles, therefore women in more conservative cultural contexts are more likely to experience domestic abuse (Giannatale & Roa, 2019). This study focuses on the ability of loan schemes to increase the wealth of local producers, particularly women's loans in Pakistan. The majority of studies on agricultural finance focus on supply factors, with less attention to demand-side influences, particularly for lowincome women. However, studies (Sagib et al., 2018; Van Loon et al., 2020) have identified demand-side constraints, such as loan security and complex applications, limiting women's access to loans. This study aims to understand these issues in rural Pakistan and improve financial access for women, enhancing their business potential and family welfare. We use data from focus group discussions with rural women in Sindh and Punjab provinces. In addition, we have analyzed data from interviews and questionnaires conducted with each of these particular wives. Our study's findings indicate that having access to social networks and a greater understanding of how loans can be used to generate economic advantage are both critical components of a successful plan to enhance access to financial services. These findings are consistent with those of previous studies (Lorenzini 2021; Malik & Shrestha, 2019), which have emphasized the importance of social capital in entrepreneurial activities. Furthermore, we discover several other traits that logically hinder women from taking out loans of this nature.

Innovation / Research Gap:

The paper covers a cross-sectional study between Agriculture women of Sindh and Punjab, which is novel in its type. The research delves into the socio-economic dynamics and credit utilization patterns among these women, providing a comparative analysis that highlights regional differences and similarities. By examining how women in these two provinces access and use credit, the study offers valuable insights into the barriers they face and the strategies they employ to utilize such loans where their husband takes the role. This information is of vital significance to the research's stakeholders, including policymakers, financial institutions. development organizations, as it can inform targeted interventions and support mechanisms to enhance the economic empowerment of agricultural women in both regions.

Research Questions

- **1.** Are there significant resources (formal or informal) available for women to avail of the agriculture-purpose loan?
- **2.** Does the household male head play a significant role in attaining and utilizing of agriculture credit facility?
- **3.** Are Punjab are significantly different from Sindh women in terms of utilization of agriculture credit?

Literature Review

Access to "high-quality financial services" will help women achieve more gender equality, a United Nations Sustainable Development Goal, claims international development groups (Hoa et al., 202). The researchers add to the debate on potential gender disparities in financial access concerning loan terms, credit applications, and approvals. Moreover, the researchers also investigate the role that the spouse plays in obtaining and utilizing microfinance.

Gender and development studies heavily weigh women's access to and usage of credit facilities, particularly in rural areas where credit can be crucial in improving women's economic empowerment, livelihoods, and well-being. One of the biggest influences on women's credit behavior is the role male heads play, usually the women's spouses or fathers. The views, tendencies, and level of decision-making of male heads can either help or impede women's access to and use of credit institutions. It is also crucial to understand how men's minds influence women's behavior and outcomes, and how this differs depending on the place and circumstance. According to Hussain & Thapa (2012), female business owners in countries with a high level of gender bias are more likely to opt out of the loan application procedure. Several of these disparities in credit market demand can be attributed to women's perceived lack of financial awareness and risk tolerance (Jurik et al. 2019). In a similar vein, Lamontagne-Godwin et al. (2018) found that this effect is exacerbated when loan officers have little or no prior experience with female borrowers. Similarly, an Italian study found that when loan applications are approved, banks charge higher interest rates to female-led businesses (Edeme, Asogwa, & Yusuf, 2022). In addition to credit market discrimination, female-owned firms face cultural barriers (Hoa et al. 2022), institutional rigidities (Armitage, Hou, Liu, & Wang, 2020), and restrictions on firm size and profitability (Edeme, Asogwa, & Yusuf, 2022), all of which limit loan availability. In general, previous empirical investigations have yielded mixed results and the question of whether female-owned and operated businesses face discrimination while seeking loans from formal financing institutions is still debated. The situation for women seeking loans in Pakistan is similar to that outlined below. The experiences of female entrepreneurs in Pakistan are not unique. A World Bank study titled "Are Pakistan's Women Entrepreneurs Being Served by the Microfinance Sector?" found that just 25% of Pakistani businesswomen microloans. To start and grow their enterprises,

female entrepreneurs in Pakistan must explore outside loan providers (Hag & Safavian, 2013). Equal rights for women benefit the business community. A report was issued in Islamabad on October 17, 2012. "Access to finance remains one of the biggest challenges for Pakistani women who want to start and grow a business," said Rachid Benmessaoud, World Pakistan Bank Country Director. The microfinance sector is less accessible to Pakistani women entrepreneurs because of "strict guarantor requirements" and "business loan products offered exclusively to men." Women often fund their firms through personal savings and family loans. Women cannot be guarantors for microfinance loans Safavian, 2013). & Our findings contribute actual data to the growing corpus of research on the gender difference in credit availability. Prior research has primarily focused on obtaining bank loan approvals and varying loan terms (Malik & Shrestha, 2019). Our large sample from two developing districts in Pakistan expands on Parker & Veasey's (2021) findings, and to the best of our knowledge, this is the first study to examine the mediation role of spouses in the association between females and access to bank loans. Even though microfinance is becoming a more important source of funding for female business owners in emerging economies (Sagib et al., 2018), academics have paid little attention to its ability to influence bank to Nouman et al. (2013) examine the effects of male and female participation in microfinance programs in rural Bangladesh on women's autonomy and gender relations within the family. (Zaheen, Arshad, 2023), The study found that women's engagement in microcredit schemes helps to empower them. encourages women to participate more in household decision-making by expanding their access to financial and economic resources, social networks, bargaining power relative to their husbands, and freedom of movement. Female credit also tends to increase overall communication between spouses about family planning and parenting difficulties. In contrast, male credit had a negative influence on women's empowerment in a variety of ways, including physical mobility, access to savings and economic resources, and the ability to control some family transactions. While the World Bank and other key development agencies have identified empowerment as a top goal, no standard methodology for monitoring and tracking progress in this area has yet been developed (Lorenzini, 2021). Whether or not a woman works for a living, her age at first marriage, the age gap between her and her husband, the number of years between their education levels, the prevalence of purdah (veil), the fear of disagreeing with a spouse, domestic abuse, and access to technology are all indicators of women's empowerment and autonomy that have been studied in the literature. The evaluation of whether women empowered by engaging in microfinance is dependent on how scholars define 'women's empowerment,' the technique used, and the epistemological approach to data analysis. Numerous organizations (e.g., IMF, World Bank, MFIs) and scholars (e.g., Lamontagne-Godwin et al., 2018) view women's financial advancement as a form of empowerment. According to this viewpoint, the primary barrier to women's empowerment is a lack of access to financial resources. Because microfinance gives women access to capital, it is considered that they have more control over their economic circumstances and have a higher chance of escaping poverty. In a similar vein, economists such as Nguyen & Canh (2021) use quantitative metrics such as 1) an increase in borrower women's income, 2) investment with return and loan repayment rate, 3) the duration of women's participation in microfinance schemes, and 4) MFI loan disbursement and recovery rates to argue that financial gain equals empowerment for women.

Methodology

This research uses mixed methodology quantitative (combining and qualitative techniques). Mixed methods research is guided by philosophical assumptions that enable the and mixing of quantitative qualitative approaches throughout the research process (Hanson, et al., 2005). The philosophy of pragmatism advanced the notion that the consequences are more important than the process and therefore that 'the end justifies the means. It advocates eclecticism and a needsbased or contingency approach to research method and concept selection so that researchers are free to determine what works to answer the research questions (Kaushik, & Walsh, 2019). The pragmatic research approach asserts that research should not be driven solely by theory or data. Instead, it recommends abduction, allowing movement between induction and deduction through continuous inquiry (Giannatale & Roa, 2019). This study was conducted in the selected districts (and their related Tehsils) of Punjab (Vehari) and Sindh (Nawabshah) which are rich cotton grower areas of both provinces respectively. The population of our study is the agriculture-working-women of these districts. Convenience sampling (based on the willingness of women) will be used for conducting interviews and filling out survey forms. (Naila, Muhammad, Khattak, 2023), We tried to provide incentives to women to collect random samples from these districts. For statistical analysis, we have used ordinary least squares and analysis of variance to see the difference between Sindh and Vehari perspectives of working women.

Conceptual Framework



Figure 1:

Conceptual Model designed for this study.

The conceptual structure shown in Figure 1 is intended to evaluate how male heads affect women's access to and usage of credit facilities (CF), especially in the Punjab and Sindh provinces. It explains how women may obtain credit through both official and unofficial means. The functionality of male heads is thus highlighted while using the credit facility. The model also suggests contrasting the rates of loan use among women in Sindh and Punjab. The conceptual framework is predicated on Figure 1, which shows the significant factors and interactions influencing availability to and utilization of loan facilities. Three main parts make up the model: (1) credit sources; (2) credit facilities for women; and (3) credit use. Along with comparing credit behavior and results among Punjabi and Sindh women, the model also considers the influence of male heads on credit availability and use. (Qin, Su, Wang, et. al. 2024), Gender norms, household bargaining, and intra-household allocation are among the many variables that the model suggests moderate the influence of male heads. The model offers a practical structure for evaluating state-of-the-art studies and pinpointing the significant themes and issues related to the impact of male heads on women's access to and use of credit facilities. This study explores the sources available for women to avail of the credit facility. These sources can be formal (banks and MFIs) or informal (NGOs, family or friends' loans, etc.). The next step is to test the hypothesis that the head of the family (husband, father, brother, etc.) will play a significant role in gaining and utilization of the credit facility. In the last part, this study makes a comparative analysis between Punjab women and Sindh women for effective utilization of credit facilities.

Population and Sample of the Study

The population of our study is district Vehari from Punjab and district Nawabshah from Sindh, out of which one hundred and fifty respondents were selected as a sample of the study. For conducting this research, having the most agricultural significance, we selected respondents from Nawabshah and Vehari. First, we conducted ten interviews in Punjab and Sindh to explore new insights. Secondly, we collected the data through an adopted and modified questionnaire from the Tisdell et al. (2020) study.

Sampling Method

This study tried to follow the convenience sampling technique. Through this, we went to different commercial and agriculture banks that provide loans to the women of agriculture. We tried to get the data from all those banks and approach our target customers. Our prime focus was to reach out to those women who have succeeded in getting loans from the banks and to get these loans their husbands might help them for getting the loans. However, we had to face different types of challenges to approach these working ladies or females who succeeded in getting agricultural loans.

Data Collection and Tool

A systematic questionnaire based on a survey was adopted and used to obtain the data. The data was pre-tested on respondents before completing the main study to establish its validity and reliability using AVE and Cronbach's alpha, respectively.

Results and Data Analysis

Three steps were taken in the data analysis: descriptive. measurement model, structural model analysis. Through the use of the SPSS and STATA software, a descriptive analysis of the respondents' demographic traits was carried out. This part covers the basic and advanced data analysis performed for this study. Basic data analysis includes graphical representation of the data; descriptive statistics; and correlation analysis. Whereas advanced data analysis includes analysis of variance; model selection; and binary logistic regression analysis were performed on data. The study employed ordinary least squares for the measurement of the effect of independent variables on dependent variables. The exploratory aspect of the study can influence the decision. First, we elaborated the basic analysis by presenting graphs which are given below:

Statistical Analysis and Discussion

Table-1.0: Variables used and their acronyms.

| Acronym | Variable | | | | | | |
|---------|--|--|--|--|--|--|--|
| UC | Utilization of Credit | | | | | | |
| cfw | Credit facility for women | | | | | | |
| cfwi | Credit facility for women (informal) | | | | | | |
| cfwf | Credit facility for women (formal) | | | | | | |
| roh | Role of Husband | | | | | | |
| size | Farm Size | | | | | | |
| edu | Education Level | | | | | | |
| dis | Disease/Disability/deficiency | | | | | | |
| ign | Ignorance of things/facilities/opportunities | | | | | | |

Descriptive Analysis

The following portion shows the descriptive analysis, correlation analysis, and logistic regression analysis for the collected data from Sindh and Punjab.

See Annex A

The results in Tables 1.1 and 1.2 show the mean values of various variables related to credit utilization, women's access to credit, and other socio-economic factors in Punjab and Sindh. Here is a possible interpretation of these results:

• Credit Utilization: This metric measures how much credit rural women borrow for various purposes, including agriculture, education, and health promotion. Higher values generate greater credit. According to the findings, Sindh has a mean value of 0.61 and Punjab of 0.54. This suggests that rural Sindhi women use credit more than Punjabi women. It also suggests that how easily or difficulty rural women could get credit from banks, microfinance institutions, and family members is determined by the

Credit Facility for Women variable. The value increases as project finance becomes easier to get. According to the data, Punjab (0.36) has a lower mean score than Sindh (0.64). It follows that rural women in Sindh have more credit possibilities and fewer limitations than those in Punjab.

- Husband Influence: This element evaluates how a rural woman's husband affects her credit-using decisions. (Mu, 2024), When the value is higher, the husband has more power or influence over the situation. With 0.6 as the average, the functions of husbands are equally significant in Sindh and Punjab. According to the findings, the mean values of both regions are similar. Known by another name, the farm size, this variable indicates how much land rural women or their families own or work. Greater values denote bigger farms. The average agricultural size of Punjab and Sindh is 8.94. The results indicate a comparable mean value for both areas.
- The Educational Level variable is used to determine the level of education that rural women have attained. The greater the values, the higher the level of education it represents. Considering the findings, Punjab and Sindh share the same mean value of 3.92, which indicates that the levels of education in both regions are equivalent.

Disease/Disability/Deficiency: This variable evaluates the prevalence of diseases, impairments, or deficiencies that restrict the access to credit that rural women have. A higher score indicates that illness, disability, or defect prevalent in the population. Considering that the findings do not include the mean value for this variable, it may be inferred that the data is either lacking or inadequate. (Seife, Ayele, Alan, et. al. 2016)

• Correlation: The association between several qualities and the amount of money borrowed in Punjab and Sindh is depicted in tables 2.1 and 2.2 with accompanying tables. The relationship between two variables that change at the same time is referred to as a correlation. When one

variable rises, a positive correlation means that the other variable also increases at the same rate. When one variable increases while the other variable decreases, this is an example of a negative correlation. When it is somewhat close to either 1 or -1, the correlation is increased. As the value becomes closer and closer to zero, the link grows even weaker.

See Annex B

- Credit Facility for Women (Informal): This indicator measures how easy or difficult it is for rural women to obtain credit from unofficial relatives, sources, such as friends, moneylenders, and other similar individuals. Based on the data presented in the table, it can be observed that women in Punjab and Sindh are more likely to make use of informal credit when it is simpler for them to acquire it. While the informal loan facility for women in Sindh appears to have a smaller impact on credit utilization, the correlation between the two states in Punjab is significantly higher (0.46).
- Credit Facility for Women (Formal): This variable measures the ease or difficulty with which rural women can access credit from official sources, such as banks, cooperatives, microfinance groups, and other similar institutions. As the table demonstrates, the ease with which women in Punjab and Sindh can receive official credit is directly correlated to the frequency with which they make use of credit. Nevertheless, the correlation is larger in Punjab (0.6) than it is in Sindh (0.46), which suggests that the formal credit facility for women has a greater influence on the amount of credit that is used in Punjab.
- Educational Attainment: This criterion evaluates the level of education of the rural women who have completed their education. As shown in the table, the rate of credit utilization among women in Punjab decreases with increasing levels of educational attainment. (Anirban, Ganguly, Asim, et. al. 2019), The nature of this relationship is toxic. On the other hand, this variable and credit utilization are positively connected in Sindh,

which means that women make greater use of credit the higher their educational degree is. This shows that the level of education has a different impact on the usage of credit in the two locations. This could be due to the possibilities or expectations that are placed on educated women, as well as the availability of education or the quality of education.

See Annex C

Suggestions and Policy Implications

We have developed policy proposals based on our results to better the situation of women in agriculture and expand the amount of loans that are accessible to and used by them. We believe that men and women should be more aware of the advantages and importance of women's empowerment and involvement in agriculture, as well as the government and other interested parties should raise financial literacy and improve women's knowledge and abilities in managing and using credit sensibly. Women's groups and cooperatives should be promoted and made easier to start as well as join to guarantee that women have equal rights and opportunities to own and control land and other productive assets, which can increase their bargaining power and decision-making authority in the home and the market. (Arain, Irfan, et. al. 2024) Regarding women's empowerment, income, productivity, and wellbeing in particular, more study and analysis are required on the implications of their using and having access to agricultural finance. Together with social assistance and collective bargaining, these organizations can give women access to knowledge and resources. These elements need to be closely watched over and managed to ensure that the conditions and lending practices of credit providers—such as banks and microfinance organizations—are fair, transparent, and considerate of the needs of women. To ensure that neither men nor women will have unexpected or detrimental effects, they might also need meticulous planning, execution, and assessment. Thus, it is critical to customize the approaches according to the particular conditions and elements that affect the behavior and function of male heads in every single place and situation.

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Appendix Annex A

Table 1.1: Descriptive Statistics for Sindh

| Variable | Obs. | Mean | Std. Dev. | Min | Max |
|--|----------|------|-----------|-----|-----|
| Utilization of Credit | 150 | 0.54 | 0.5035 | 0 | 1 |
| Credit facility for women | 150 | 0.36 | 0.4849 | 0 | 1 |
| Credit facility for women (informal) | 150 | 0.46 | 0.5035 | 0 | 1 |
| Credit facility for women (formal) | 150 | 0.6 | 0.4949 | 0 | 1 |
| Role of Husband | 150 | 0.6 | 0.4949 | 0 | 1 |
| Farm Size | 150 | 8.94 | 2.6062 | 5 | 150 |
| Education Level | 150 | 3.92 | 2.1461 | 1 | 8 |
| Disease/disability/deficiency | 150 | 0.04 | 0.4149 | 0 | 1 |
| Ignorance of things/facilities/opportunities | f 150 | 0.52 | 0.4628 | 0 | 1 |

Table 1.2: Descriptive Statistics for Puniab

| Table 1.2. Descriptive Statistics for Funjab | | | | | | | | | |
|--|----------|------|-----------|-----|-----|--|--|--|--|
| Variable | Obs. | Mean | Std. Dev. | Min | Max | | | | |
| Utilization of Credit | 150 | 0.61 | 0.4949 | 0 | 1 | | | | |
| Credit facility for women | 150 | 0.64 | 0.4849 | 0 | 1 | | | | |
| Credit facility for women (informal) | 150 | 0.36 | 0.4849 | 0 | 1 | | | | |
| Credit facility for women (formal) | 150 | 0.46 | 0.5035 | 0 | 1 | | | | |
| Role of Husband | 150 | 0.6 | 0.4949 | 0 | 1 | | | | |
| Farm Size | 150 | 8.94 | 2.6062 | 5 | 100 | | | | |
| Education Level | 150 | 3.92 | 2.1461 | 1 | 8 | | | | |
| Disease/disability/deficiency | 150 | 0.07 | 0.3949 | 0 | 1 | | | | |
| Ignorance o things/facilities/opportunities | f 150 | 0.76 | 0.4314 | 0 | 1 | | | | |

Table 2.1: Correlation Matrix of Variables for the Study (Sindh)

| Variables | | uc | cfw | cfwi | cfwf | roh | size | edu | dis | ig n |
|---|----|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|---------|
| Utilization of Credit | | 1 | | | | | | | | |
| Credit facility for women | | - 0.0602 | 1 | | | | | | | |
| Credit facility for women (informal) | | 0.2077 | -0.107 | 1 | | | | | | |
| Credit facility for women (formal) | | 0.3113 | -0.068 | 0.344 | 1 | | | | | |
| Role of Husband | | - 0.0983 | 0.1021 | 0.344 | 0.5833 | 1 | | | | |
| Farm Size | | - 0.1303 | - 0.3217 | 0.239 2 | - 0.3196 | -0.193 | 1 | | | |
| Education Level | | - 0.0914 | - 0.2267 | -0.343 | 0.1614 | 0.0269 | - 0.2855 | 1 | | |
| Disease/disability/deficiency | | - 0.3014 | 0.1466 | 0.363 6 | 0.0601 | 0.1392 | 0.381 | 0.094 | 1 | |
| Ignorance things/facilities/opportunities | of | - 0.5656 | 0.3239 | -0.186 | - 0.1721 | - 0.1243 | -0.004 | 0.133 1 | 0.159 4 | 1 |

Table 2.2: Correlation Matrix of Variables for the Study (Punjab)

| Variables | | uc | cfw | cfwi | cfwf | roh | size | edu | dis | ign |
|---------------------|---------------------------------|---------|---------|---------|--------|---------|---------|--------|-------|-----|
| Utilization of Cre | dit | 1 | | | | | | | | |
| Credit facility for | women | 0.2381 | 1 | | | | | | | |
| Credit facility for | women (informal) | 0.1021 | -0.0451 | 1 | | | | | | |
| Credit facility for | women (formal) | 0.344 | -0.2274 | -0.107 | 1 | | | | | |
| Role of Husband | | 0.5833 | 0.068 | -0.068 | 0.344 | 1 | | | | |
| Farm Size | | -0.193 | -0.1628 | -0.3217 | 0.2392 | -0.3196 | 1 | | | |
| Education Level | | 0.0269 | 0.0698 | -0.2267 | -0.343 | 0.1614 | -0.2855 | 1 | | |
| Disease/disabilit | y/deficiency | -0.1392 | 0.1279 | 0.1466 | 0.3636 | 0.0601 | 0.381 | 0.094 | 1 | |
| Ignorance of | things/facilities/opportunities | -0.0765 | 0.0663 | -0.0663 | 0.0489 | 0.2103 | 0.0958 | 0.2654 | 0.114 | 1 |

Annex C

Binary Logistic Regression Analysis

| Model Summa | ary | | Important Stats | | | | |
|-------------|---------|-----|-----------------|----------------|---|---------|--|
| Source | SS | df. | MS | Number of obs. | = | 50.0000 | |
| Model | 8.3586 | 8 | 1.0448 | F (8, 41) | = | 10.5500 | |
| Residual | 4.0614 | 41 | 0.0991 | Prob > F | = | 0.0000 | |
| Total | 12.4200 | 49 | 0.2535 | R-squared | = | 0.6730 | |
| | | | | Adj R-squared | = | 0.6092 | |
| | | | | Root MSE | = | 0.3147 | |

| Table 3.1: Results of Logistic Regression (Sindh) | | | | | | | | | |
|---|-------|-----------|---|-----|------------|-----------|--|--|--|
| Variables | Coef. | Std. Err. | t | P>t | [95% Conf. | Interval] | | | |

| Credit facility for women | 0.4876 | 0.1359 | 3.5900 | 0.0010 | 0.2132 | 0.7620 |
|--|---------|--------|---------|--------|---------|---------|
| Credit facility for women (informal) | 0.3759 | 0.1269 | 2.9600 | 0.0050 | 0.1196 | 0.6322 |
| Credit facility for women (formal) | 0.4885 | 0.1273 | 3.8400 | 0.0000 | 0.2314 | 0.7456 |
| Role of Husband | -0.5293 | 0.1168 | -4.5300 | 0.0000 | -0.7651 | -0.2935 |
| Farm Size | 0.0476 | 0.0267 | 1.7800 | 0.0820 | -0.0063 | 0.1016 |
| Education Level | 0.0645 | 0.0304 | 2.1200 | 0.0400 | 0.0031 | 0.1260 |
| Disease/disability/deficiency | -0.0946 | 0.0248 | -3.8100 | 0.0000 | -0.1448 | -0.0444 |
| Ignorance of things/facilities/opportunities | -0.3428 | 0.0588 | -5.8300 | 0.0000 | -0.4615 | -0.2240 |
| Constant | 0.5610 | 0.2864 | 1.9600 | 0.0570 | -0.0174 | 1.1393 |

| Model Summa | ry | | Important Stats | | | | | |
|-------------|--------|----|-----------------|----------------|---|---------|--|--|
| Source | SS | df | MS | Number of obs. | = | 50.0000 | | |
| Model | 6.6077 | 8 | 0.8260 | F (8, 41) | = | 6.2800 | | |
| Residual | 5.3923 | 41 | 0.1315 | Prob > F | = | 0.0000 | | |
| Total | 12 | 49 | 0.2449 | R-squared | = | 0.5506 | | |
| | | | | Adj R-squared | = | 0.4630 | | |
| | | | | Root MSE | = | 0.3627 | | |

Table 3.2: Results of Logistic Regression (Punjab)

| Variables | Coef. | Std. Err. | t | P>t | [95% Conf. | Interval] |
|--|---------|-----------|---------|--------|------------|-----------|
| Credit facility for women | 0.4177 | 0.1293 | 3.2300 | 0.0020 | 0.1566 | 0.6789 |
| Credit facility for women (informal) | 0.4232 | 0.1616 | 2.6200 | 0.0120 | 0.0968 | 0.7496 |
| Credit facility for women (formal) | 0.4553 | 0.1622 | 2.8100 | 0.0080 | 0.1276 | 0.7829 |
| Role of Husband | 0.5496 | 0.1333 | 4.1200 | 0.0000 | 0.2804 | 0.8189 |
| Farm Size | 0.0603 | 0.0349 | 1.7300 | 0.0910 | -0.0102 | 0.1307 |
| Education Level | 0.0836 | 0.0394 | 2.1200 | 0.0400 | 0.0040 | 0.1632 |
| Disease/disability/deficiency | -0.0561 | 0.0330 | -1.7000 | 0.0970 | -0.1228 | 0.0106 |
| Ignorance of things/facilities/opportunities | -0.3524 | 0.1352 | -2.6100 | 0.0130 | -0.6255 | -0.0794 |
| Constant | -0.4559 | 0.3648 | -1.2500 | 0.2180 | -1.1927 | 0.2808 |