LENDWITHCARE ASSESSMENT PROJECT

AKHUWAT ISLAMIC MICROFINANCE REPORT

UNIVERSITY OF PORTSMOUTH

JANUARY 2018

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Summary

This report is part of the Lendwithcare (LWC) assessment project and focuses on the evaluation of LWC Pakistani partner, the microfinance institution AIM Islamic Microfinance (AIM). The report was prepared by the University of Portsmouth (UoP), partner in the project, after a second wave of a household survey to a sample of AIM clients who have been supported by the LWC crowdfunding platform.

The study sample included 500 new AIM clients and 100 non-clients, first interviewed in 2015 by a team of independent interviewers recruited from local universities. The second wave of interviews took place in 2017, after all the clients had completed repaying their first loan (20 to 22 months later).

This report offers an initial snapshot of how the lives of LWC supported entrepreneurs have changed since they became AIM clients. Considering the nature of the methodology used, the analysis does not give definite explanations for the identified changes but provides critical data on the microcredit clients' lives and the existence of correlations between the factors studied. In this sense, it can become the foundation of a more in-depth analysis and an important incentive for the establishment of continuous evaluation processes in the microfinance institution involved in the project.

The results show that AIM/LWC clients are mainly male (63%), married (90%), with low levels of literacy (48% illiterate), living in family houses (58%) in households of 6 members. The average age is 39 years old, and on average they have significant business experience (10 years). 54% work alone in the business and they report working an average of 64 hours per week. Their first loan was, on average, 20,000PKR (approximately $190) and was destined mostly to fund working capital. By the time of the second interview, 63% of the clients had successfully applied for a second loan and 13% were considering applying.

The data collected in both waves of the survey point towards an improved situation for most of the clients' businesses, with a significant share of them reporting increased business revenues and less constraints in the access to capital for their businesses. Positive changes were also identified in the employment indicators: a considerably lower number of entrepreneurs were working alone in their business in 2017, and a reported net increase of 191 jobs during the period. It is important to note, however, that this increase in employment was concentrated in a relatively small group of entrepreneurs, and that these created 'jobs', even if paid, were mostly informal.

The analysis of the changes at the household level was based mainly on the variation of the PPI, Progress out of Poverty Index (renamed in October 2017 as Poverty Probability Index). Most clients (55%) have seen their PPI total score increase between 2015 and 2017, anticipating an improvement in the economic circumstances of their households. Further analysis of the changes in the different components of the index will be necessary to identify the reasons for the direction and amplitude of the variations, including for those who have experienced a deterioration of the score.

Among the findings, it is interesting to note that two of the clients' segments that were found to be comparatively poorer at the baseline survey – female and illiterate clients – registered slightly larger increases in their average PPI scores, suggesting a reduction in the poverty gaps for these sub-groups of clients. Furthermore, the comparative analysis of clients and non-clients identified that the access to the loan was one of the statistically significant factors associated with the changes in the PPI score for those respondents who have experienced positive variations. Simultaneously, for respondents who experienced negative variations the loan was not statistically significant. Given the limitations of the study, especially the difference between clients and non-clients sample sizes, this result requires further corroboration.

A final remark would be to call attention to the overall positive evaluation made by the clients regarding the changes in their lives - 68% declared having a better quality of life in 2017. It is also interesting to note that 93% of these clients have since become AIM donors, with 66% reporting making regular donations to the institution.

Introduction[1]

The Lendwithcare assessment project started in 2014 with the main objective of assessing the experience of borrowers supported by the crowdfunding platform. By the end of 2014, AIM in Pakistan had been chosen as the first field partner to participate in the evaluation, and the University of Portsmouth also became a partner in the project.

AIM is a Pakistani microfinance institution (MFI) with its headquarters in Lahore (Punjab). It is a NGO funded mainly by national and international donations, which has enabled the institution to finance thousands of micro entrepreneurs through *qard hasan* or interest free loans, compliant with the principles of Islam. AIM's microcredit programme is unique in some of its features, including the family-loan approach and the public signature of loan contracts in religious sites. The use of mosques, and on occasions churches, in addition to strengthening the client's relationship with the institution, is part of a strategy to reduce fixed costs. The physical structure composed of simple and small branches and the support of volunteers are also vital elements of this strategy.

The institution started operations in 2001. Today it is the largest microfinance institution in Pakistan in terms of number of active borrowers, with more than 855,000 clients, 700 branches spread throughout the country provinces and 5,600 staff.[2] AIM has been LWC's partner in Pakistan since February 2013. As of 30th September 2017, more than 11,300 loans, with an average amount of $236, have been funded by LWC.

The borrowers supported by LWC lenders come from 4 branches within the Lahore area: Badami Bagh, Kot Khawaja Saeed and Kahna Nau are located within the city, while Kasur is situated around 30 miles from Lahore. During the months of April and May 2015, a sample of 500 AIM new clients selected from the four branches and 100 non-clients were interviewed by a team of independent interviewers recruited from a local university. The interviewers received training from the UoP/LWC team to apply the questionnaire, which was prepared by UoP with contributions from LWC and AIM. The baseline survey allowed for the characterisation of the respondents and established a basis for comparative analysis in 2017, after the implementation of a second wave of the survey.

The second questionnaire was to be applied to the same clients and non-clients, after the clients had completed the first loan cycle. It included some questions identical to the first questionnaire, new questions about the changes in a selection of outcomes at business and household level, and two open questions aiming to capture the perception of the interviewees regarding the observed changes. In both surveys, the PPI form was also completed.[3]

Longitudinal studies present several challenges, one of the most significant being attrition. As expected, two years after the baseline survey not all participants were located or were available to be interviewed again. This was the case for a significant number of non-clients, particularly in the branch of Kahna Nau. The final dataset included

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[1] All figures and tables are based on survey data.

[2] Data by 30th September 2017 available in MicroWatch Issue 45
(http://www.pmn.org.pk/publications/category/MicroWatch)

[3] PPI is a poverty measurement tool initially developed by the Grameen Foundation under the name of Progress out of Poverty Index. It has been renamed in October 2017 as Poverty Probability Index. Further information on PPI can be found at https://www.povertyindex.org/.

valid data for the two periods for 447 clients and 52 non-clients.[4] The reasons for non-participation by the clients in the second survey include death (3), moving to other country or city (21), not located by the interviewer (26) and incomplete interviews (3).

The geographical distribution of the sample for both 'clients' and 'non-clients' in the two surveys is shown in Table 1.
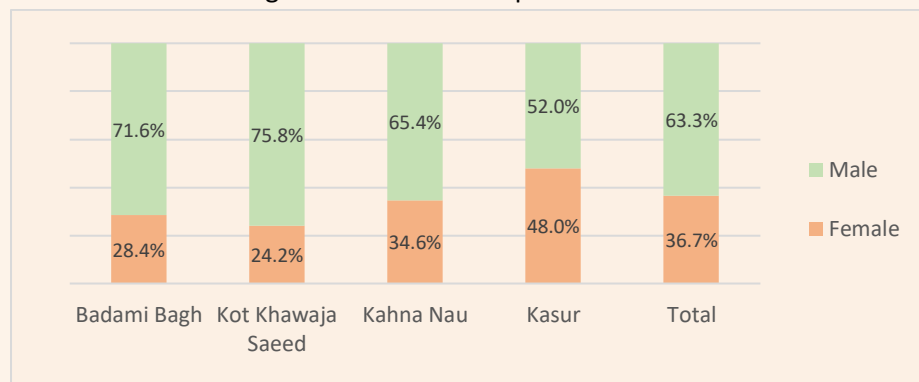
Table 1 – Sample geographical distribution

Branch	Clients 2015	Clients 2017	Non-clients 2015	Non-clients 2017
Badami Bagh	79	74	28	14
Kot Khawaja Saeed	105	91	21	16
Kahna Nau	132	107	32	10
Kasur	184	175	19	12
Total	**500**	**447**	**100**	**52**

Part I - The clients and their businesses

AIM clients are mainly male. The distribution of clients is unbalanced in terms of **gender (**Figure 1), but it is overall in line with the gender distribution of the microcredit program for the institution as a whole (40% of female borrowers in 2015, when the sample clients were first interviewed).[5]

Figure 1 – Gender Sample Distribution

Female participation is lower in the more urban and economically developed areas of Badami Bagh and Kot Khawaja Saeed. Considering that during the period of the baseline survey, all new clients from the four branches were invited to participate in the study, and the level of the microfinance on offer was similar in all areas (15 main microfinance service providers have branches in these four areas, with 4 further providers present in all but Kasur),[6] it can be conjectured that women are more likely to look for MFI funding for their businesses in the poorer areas.

The average **age** of the clients in the sample is 39 years. Figure 2 illustrates the distribution of the clients by age groups and the concentration on clients between 30 and 50 years (70%). The focus is, therefore, on more

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[4] Interviews took place mainly between February and May 2017; non-clients from Kahna Nau were interviewed in November 2017.
[5] See Khan *et al.* (2017)
[6] See MicroWatch Issue 35: Jan-Mar 2015 available at http://www.pmn.org.pk/publications/category/MicroWatch

experienced entrepreneurs, which also reflects the average **business time** (10 years for those with active businesses in 2017). Female clients are, on average, older than male clients (41 years vs 37 years) but less experienced in the business (9.1 years vs 10.5 years).
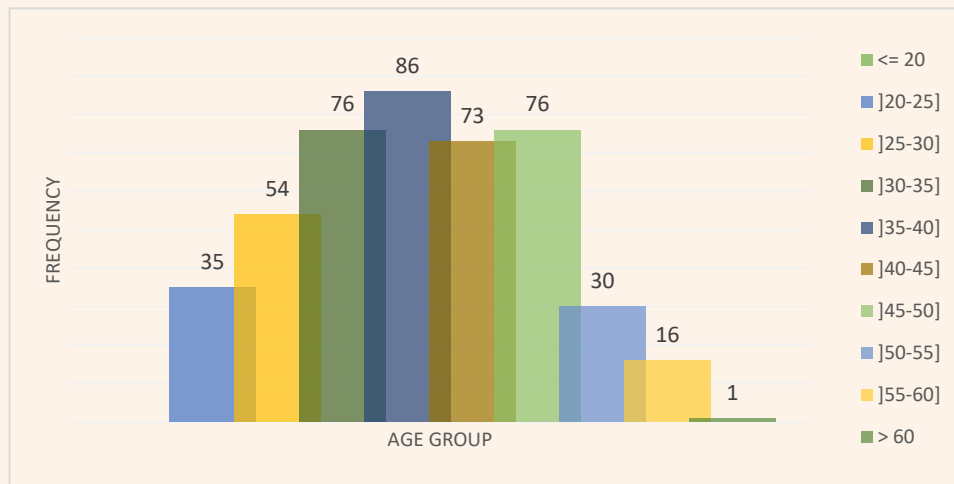

Figure 2 - Clients Age Distribution 2017

A strong characteristic of the sample clients is their low **level of formal education**. Almost half of the clients are illiterate (48.4%) and a further 16% received only primary education (grades 1 to 5). As might be anticipated, this is particularly notable for female clients – 67% have received no formal education.
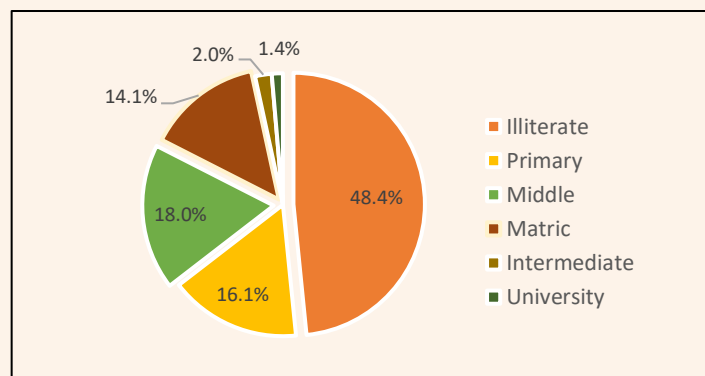

igure 3 – Clients Sample Educational Level

Another common feature of most clients in the sample is their **marital status:** 89.7% are married, 9.4% single and an almost insignificant percentage are widowed and divorced (0.45% for each). **Household size** averages 6.39, a value slightly above the same sample average in 2015 (6.18) and the data for the Punjab province in the HIES – Household Integrated Economic Survey 2015-16 (6.04).[7]

Clients in the sample live mainly in **houses owned** by other family members (58%) or their own houses (33%). The number of clients living in rented accommodation was initially low (43) and has slightly decreased in the second survey (39). An intriguing result is that the share of clients stating owning their own house decreased compared with the baseline (40%). It would be interesting to understand if this variation results from inconsistencies in the clients' responses or if it actually represents a change in home ownership.

Decision making regarding how household money is spent is most frequently shared (less than one quarter of the clients reported taking these decisions on their own). Similarly, for almost two thirds of the female clients, business decisions are made jointly with other household members (often the husband but in many cases also the

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[7] HIES report is available at http://www.pbs.gov.pk/content/pakistan-social-and-living-standards-measurement (accessed 18.10.2017)

parents, siblings and children). For male respondents, the percentage of clients managing the businesses on their own is significantly higher (69%).[8]

AIM's clients run different **types of businesses.** In the analysis, sewing/tailoring is singled out as the most common activity reported in the sample, and it is managed by both female and male clients. The remaining businesses were classified under a broad typology of trade (mainly retail); production and construction; and services and education (including hairdressers, recycling and transport).
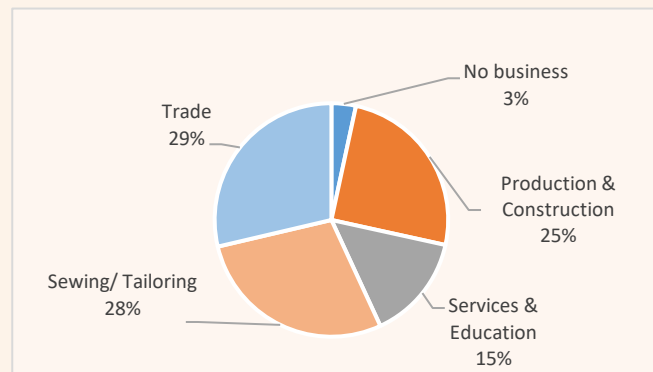

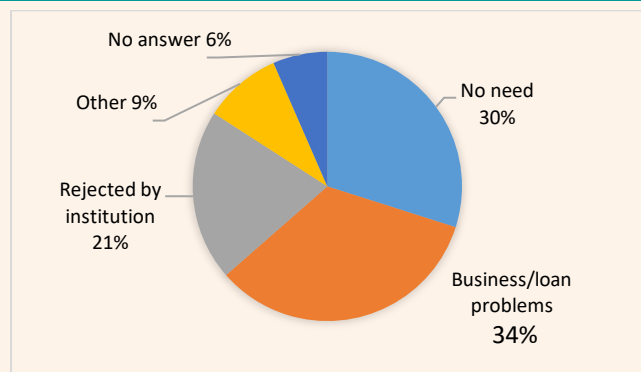Figure 4 – Business Activities in 2017

It is relevant to note, however, significant differences at branch level. Trade is the most common activity in the three branches located in Lahore, representing between 36% and 39% of the reported client activities, while in Kasur the main business is sewing/tailoring (39%) followed by production (32%). Services assume a higher importance in Kot Khawaja Saeed where the number of businesses is similar to sewing/tailoring (21-22%). There were 102 clients (23%) whose main activity changed between the two survey periods.

54% of clients stated **working alone** in the business in 2017. Those who have **employees** report providing paid jobs to 336 persons and occupation to 67 additional unpaid employees. In the 2017 survey, data was also collected on the **working time** of the entrepreneurs. For the 349 AIM clients who replied to the question, the average working load was 64 hours/week. Only 24 entrepreneurs declared working less than 40 hours/week, which suggests that part-time dedication to the business is not strong in the sample, even for women who are expected to divide their time between business and household activities.

By the time of the second survey, all clients had finished repaying their first loan (the loan duration varied from 12 to 20 months). 63% of these clients had applied for a **second loan** that had already been approved or was being evaluated, while 13% were thinking of applying but had not initiated the process. The drop-out rate was 24%. There are three main reasons given by the clients for not taking up a second loan, displayed in Figure 5.

Figure 5 – Reasons for Drop-Out

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[8] The question on decision making was included only in the second questionnaire, hence no comparison can be made with the baseline situation.

The reasons for loan refusal by the organisation are specified in only a small number of the cases and they relate to the client's failure to comply with application requirements (formation of a group, documentation). According to the clients' responses, the indebtedness level is low (95% of the interviewees declare having no other loans from any source, formal or informal, at the time of the interview). This is similar to the situation encountered two years before.

Looking at the declared **use of the loan** (which many microfinance evaluation studies acknowledge as relevant to the programs' outcomes), it looks as if most clients (80%) have used the loan as stated in their loan application and the baseline survey: mainly to fund working capital needs. There are, however, 84 cases in which the use of the loan reported in 2017 is different from the stated purpose in the 2015 survey. Of these, as shown in Table 2, only 8 clients admit non-productive uses of the loan - mainly payment of household expenses and/or repayment of other debts. This result should be considered with a 'pinch of salt' (at this stage) as there was no further validation of the information given by the clients.

Table 2 – Reported Differences between Loan Purpose and Loan Use

Purpose of Loan 2015	Use of the Loan 2017				
	Working Capital	Fixed Assets (incl. Maintenance)	Business Diversification	Other Use	Total
Working Capital	-	37	5	8	50
Fixed Assets	34	-	0	0	34

Part II – Changes after the first loan cycle

From a theoretical perspective, links can be established between microcredit and a wide range of socio-economic and well-being indicators. However, considering the characteristics of the population and the logistic challenges associated with the project, the partners established a time limitation for the questionnaires, and consequently, only a few of the potential outcomes were selected to be studied. The selection was made considering relevant impact studies in the sector and comments and suggestions from the field partner.[9] The questionnaires included both business and household level outcomes.

In the interpretation of the results, it is important to keep in mind that a longitudinal survey of this nature does not give definite explanations for the identified changes but provides critical data on the microcredit clients' lives and the existence of correlations between the factors studied. In this sense, it can become the foundation of a

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[9] For further development see Duvendack *et al.* (2011), Odell (2010) and Banerjee *et al.* (2015).
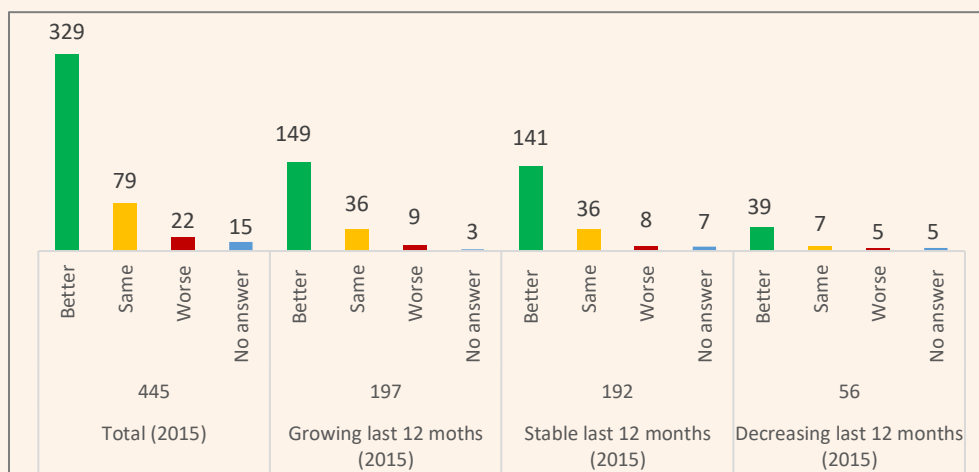
more in-depth analysis and an important incentive to establish continuous evaluation processes in the MFIs involved in the project.

The business outcomes

Microcredit clients run small informal businesses, usually with no organised accounting, which makes it more challenging to collect quantitative data on their businesses. The decision was to include a qualitative appreciation of sales growth for the previous 12 months (in both surveys) and a comparison of the sales/revenues level at the time of the two interviews.

Figure 6 illustrates the different scenarios encountered by AIM new clients and the overall positive evolution of most of the businesses during the period. 74% (329 clients) reported higher sales in 2017 compared with the baseline survey. This better performance was achieved by clients with different starting points at the baseline. As the figure shows, there were clients whose business was stable (192) or growing (197) when they applied for the first loan, but also clients with businesses going through difficulties (56). For the clients in a worse position in 2017 (5% of the total sample), the situation was mainly associated with business failure.

Figure 6 - Sales 2017 vs Clients)

Comparison Revenues in Baseline (No.

There was also a positive evaluation in two other business areas: access to credit and employment. In both questionnaires, the clients were asked about the main constraints they face in their businesses. There was a significant change in their replies. The percentage of clients identifying lack of capital as the main limitation decreased from 76.5% to 20% in the second questionnaire. Female clients, similarly to the first survey, seemed to experience more difficulties accessing capital (27%) than their male counterparts (16%). The results suggest, however, that access to the microcredit loan did address, at least partially, previous credit constraints. The second most common constraint was electricity outages, especially for Kasur clients.

The comparison of the number of workers reported to be involved in the businesses at the time of the two interviews shows also a positive impact on local employment. The majority of the clients still worked on their own (54%) but this represented a significant decrease compared to the initial situation when 69% declared working alone. The total number of workers (client + unpaid employees + paid employees) for the whole sample had a net increase of 191 from 2015 to 2017. These employment figures are strongly influenced by the performance of one small group of clients, mainly in the sewing/tailoring and production activities, who are responsible for hiring 160 paid and 7 unpaid employees in 2017.

The 2017 questionnaire also included an open question aimed at understanding the **perception of clients** on the business level changes, and how they valued them. The answers were categorised according to the options shown in Table 3. Increase in revenues and assets were the two most reported business outcomes. Employment creation was less stated, which is partially explained by the fact that the major changes in employment were concentrated in a small number of entrepreneurs.

Table 3 – Clients' Perception on Business Changes

Change in Business	No. Respondents	%
Increase in sales/profit	329	74%
Increase in business assets	150	34%
Increase in clients/orders	80	18%
Increase in employment	37	8%
No change	46	10%
Business shut down/no business	29	6.5%

The household outcomes

PPI (formerly the Progress out of Poverty Index and now the Poverty Probability Index) was the tool chosen to primarily track changes in the poverty level of the clients' households. Looking at the average values for the PPI sample variation, the results point towards a reduction in the poverty levels of the clients (on average) with a lower likelihood of their households to be considered poor. PPI results, similarly to the questionnaires, do not allow for exploring the causes of the variations, but they raise questions about the dynamics of these changes, which require further qualitative analysis.

Brief methodological note:
PPI is a poverty scorecard developed exclusively for each country by a team of experts led by Mark Schreiner. It includes 10 multiple-choice questions about household characteristics and assets ownership. The answers to these questions have associated scores and their sum gives the PPI score for the household. It ranges from 1 to 100 and translates into a likelihood of the household being poor according to the selected poverty line.[10] The higher the score, the lower the probability of the household being considered poor.

The PPI for Pakistan was developed in 2009, and has not been updated since, which could raise some questions on the instrument's ability to accurately identify the poor in the current environment. It is also important to note that PPI is an instrument developed to assess national averages, whereas all the clients in the sample were located in Punjab, and therefore scored the maximum for the location indicator, given that Punjab performs economically better than most other provinces in the country.

These considerations were taken into account in two ways. The use of the tool focuses on tracking the changes within the sample: how the clients' poverty level may have improved, with no definite assertions being made on their absolute poverty level. Moreover, the poverty line chosen was the $2.50/day 2005 PPP (Purchasing Power Parity), which is closer to the recently revised international extreme poverty line of $1.90/day.
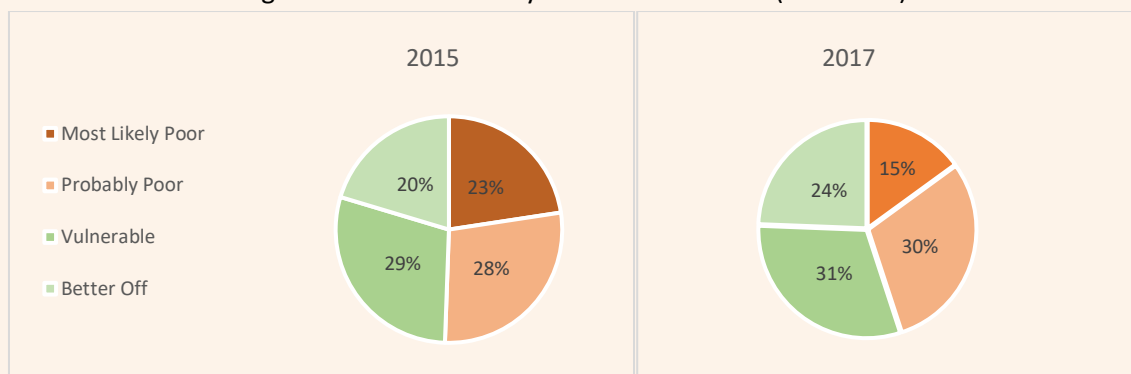
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[10] PPI offers, as possible reference poverty lines, a national poverty line and international poverty lines, being most commonly used the $1.25/day and $2.50/day 2015 PPP (https://www.povertyindex.org/).

The PPI survey was conducted in both the first and second phase of interviews for both clients and non-clients, and the index scores and their variations have been computed. Results were analysed using $2.50/day as the reference poverty line and, to better visualise the differences within the sample, the clients were classified in 4 categories:

- o 'Most Likely Poor' (probability of the household income being below $2.50/day higher than 75%);
- o 'Probably Poor' (probability between 50% and 75%);
- o 'Vulnerable' (probability between 25% and 50%);
- o 'Better Off' (probability lower than 25%).

Figure 7 shows the sample composition considering these categories in 2015 (baseline) and 2017. The overall economic condition of the households seems to have globally improved with a share of households with a very high probability of being considered poor significantly lower in 2017.

Figure 7 - Clients Poverty Level Classification (PPI based)

The aggregate picture conceals, however, a diversity of situations that are best identified when looking at the variations of the individual scores. A majority of clients (55%) have seen their PPI increase between 2015 and 2017, anticipating an improvement in their economic circumstances, but there is also 6% of the sample for whom there was no change and 38% who experienced a deterioration of their score. An important follow-up on this report will be the analysis of which factors (questions in PPI) contributed the most to the variations in both directions, as well as the amplitude of variation.

The existence of differences among clients regarding PPI scores, and respective variation, becomes more evident when applying statistical tests to compare client sub-groups (according to some defined characteristic).[11] The main results of this analysis include:

- o In the 2015 survey there were significant differences between the average PPI scores (and poverty levels) for female and male clients. This gap seems to have slightly decreased after the first loan cycle, as the positive variation of the PPI score was stronger, on average, for the female clients (12 percentage points compared to 8 percentage points).

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[11] The objective of the statistical analysis lwas identifying potential differences between sub-groups that may help better understand the outcomes of the microcredit program. The initial step on this process was the calculation of the main descriptive statistics as well as the computation of the Jarque-Bera test of normality for the variables of interest (list of variables in annex I). Given that for almost all tested variables, the null hypothesis of normal distribution was rejected at a 5% significance level, the decision was to perform nonparametric tests, less demanding in the assumptions regarding the population studied (statistically significant results are listed in annex II).

o   There were also significant differences in the average PPI scores for illiterate clients compared to those with formal education. Similarly, the poverty gap between these two client segments appears to have reduced by the 2017 survey, with a larger positive variation of the scores for the illiterate clients (13 percentage points compared to 6 percentage points).

o   PPI average scores, both in 2015 and 2017, varied considerably with location. Kot Khawaja Saeed is the 'wealthiest' branch, with its clients scoring an average PPI of more than 75 points in both surveys. A distinct portrait emerges when looking at the much lower average scores for the Kanha Nau and Kasur branches (60.7 and 63.5, respectively). In all branches, the average PPI scores had improved by the second survey and no statistically significant differences in PPI variation were found between branches.

o   The average PPI scores in both surveys suggest that clients who own their houses are economically better than those living with family or renting.

Aiming to complement the analysis based on PPI, both surveys included questions on **income and expenditure.** These questions are sensitive and prone to error, especially in informal contexts, and as expected, several clients did not know or did not want to share information about income and expenses. Data was collected on personal income (net income from the business as well as other individual sources), household total income and household total expenses (at current values).

A first look at the **personal income** monthly values reported by the clients in 2017 shows that the sample is heterogeneous:[12]

o   Female clients reported earning, on average, 7,187PKR less a month than male clients.

o   Clients with no formal education also performed worse, with average monthly incomes 3,984PKR lower.

o   Clients in Kasur declared incomes, on average, 3,128PKR lower than the other three branches while, inversely, the monthly personal income in Kot Khawaja Saeed was, on average, 5,548PKR higher.

o   Entrepreneurs developing sewing/tailoring activities reported earning, on average, 4,765PKR less than those with other activities (trade, services and production).

o   Home-owners declared monthly personal incomes, on average, 4,934PKR higher than those clients living with family or renting.

The differences in terms of gender and type of activity fade when looking at the **household income and expenditure.** The profile is similar when analysing branches, educational level and house ownership sub-groups - household income and expenses are, on average, higher for clients in Kot Khawaja Saeed, clients with higher education and home-owners, and they are comparatively lower for those clients in Kasur and who are illiterate.[13]

Table 4 summarizes the results for the 270 households with available data for the three indicators in the two surveys.[14]

Table 4 – Clients Average Income and Expenses (2015 values)

	Personal Monthly Income	Household Monthly Income	Household Monthly Expenses
2015	13,380 PKR	24,479 PKR	17,007 PKR
2017	16,041 PKR	29,377 PKR	17,434 PKR
Real Variation 2015-17 (%)	+ 19.9%	+ 20%	+ 2.5%

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[12] Differences between the sub-groups were found to be statistically significant at a significance level of 5%.

[13] Further details on Annex II.

[14] The amounts declared for the indicators in 2017 were deflated to the values of 2015 to eliminate the inflation effect and calculate real variations of the variables.

The analysis for the sub-sample indicates an overall improvement of the economic situation of the clients' households, given that the real variations of average personal and household incomes are significantly higher than of the average household expenditure. Yet again, a more in-depth analysis of the numbers shows diversity of individual situations, including a share of clients within this sub-sample (30%) who appear to have experienced a decrease on their real personal income during the period.

An interesting result when comparing sub-groups of clients is that the **variation of personal income in real terms** (2015 values) was considerably higher for female clients (100% compared to 36%), albeit the declared earnings continue to be significantly higher for the male clients. This result suggests a step forward to reduce the income gender gap.

The expenditure analysis shows a small increase in the household monthly expenditure (in real values), which seems to be accompanied by the growth in the purchase of **household assets**. 103 clients (23%) reported having bought fixed assets for the household during the previous 12 months, which compares to approximately half of this number (52) for the same question in 2015.

Inversely, **savings** seem to have generally diminished, at least in terms of frequency. Although most clients save regularly (49.2%) or occasionally (15.4%), the number of clients stating 'never saving' increased from 80 to 158, representing 35.3% of the whole sample. For those reporting regular or occasional savings, community savings groups are the main savings channel (77%), with the remaining choosing to save at home or, in a small number of cases, in commercial banks.

Beyond consumption, asset acquisition and savings, 93% of the clients have declared making **donations**, regularly or occasionally, to AIM. This fits in with the institution's philosophy of 'brotherhood' and the creation of solidarity ties between the clients. Donating to help others in a worse position is a moral obligation for Muslim clients but can also be seen as a 'guarantee' that help will be available if an emergency occurs, working in this way as a form of 'social insurance'.

Parallel to the business outcomes question, in 2017 clients were also asked how the household had changed since the first interview two years previously. Table 5 presents the most common changes explicitly mentioned by the clients.

Table 5 – Clients' Perception on Household Changes

	No Respondents	%
Improvement of living standards	205	46%
Increase in satisfaction	139	31%
Increase in income	146	33%
Increase in consumption	116	26%
Improvement in education	32	7%
Increased expenses	33	7%
No change/'hand to mouth' living	25	5%
Lower income	6	1%

The mentioned changes seem to corroborate other results suggesting (overall) a better situation and an increase in consumption. They also support the idea that not every client has seen their situation changed or improved

and, in a small number of cases, normally associated with business failure, the overall situation of the households is worse.

In their answers to the open question some of the clients went beyond generic ideas on living standards and expenses coverage and referred to specific areas like savings (1), house improvements (2), food quality (1), financial independence from donations (1), and financial capacity to marry a child/relative (4).

Part III – Comparison with non-clients

One of the objectives of the project was to evaluate the 'impact' of the loans funded by LWC lenders. For this purpose, it was considered critically important to set up a comparison group of non-clients, even acknowledging the challenges associated with its field implementation.

In 2015, with the logistical support of AIM, 100 non-clients with similar businesses and located in the same neighbourhoods as the clients were interviewed. At baseline, the comparative analysis of personal and business indicators between the larger group of clients and the non-clients revealed no significant differences.

The analysis after the second survey is hampered by a low response rate among non-clients, exacerbating the difference in sample size. By the end of May 2017, there were 39 valid interviews with non-clients, none of them from the branch of Kahna Nau. For this reason, a second phase of interviews was conducted in November 2017, focusing on this area. As a result, data from 10 non-clients from Kahna Nau and 3 from Kasur were added to the database.

Mann-Whitney tests were applied to the two sub-groups of **clients and non-clients (**for the group of variables identified in Annex I). No statistically significant differences were identified regarding most of the variables, and only PPI scores in 2015 were statistically significant at a significance level of 1%. This difference between poverty levels at baseline did not exist when considering the initial group of 100 non-clients. There are, however, no differences between the PPI scores in 2017, or its variation during the period.

Looking at the results for the clients and non-clients available in the second survey, the average PPI scores suggest that AIM clients were more likely to be poor at baseline than the sub-group of non-clients. Furthermore, while, on average, the economic situation of the clients seemed to have improved (as the PPI score increases during the period), the reverse is observed for non-clients.

Table 6 – PPI Scores

Variable	Average Client	Average Non-client
PPI_{2015}	63.6	70.5
PPI_{2017}	66.8	70.0

To further investigate the factors contributing to the changes in the poverty levels (measured by PPI), regression analysis, namely a quantile regression model, was implemented, using the change in poverty index scores as the

dependent (explained) variable.[15] The explanatory variables included age, gender, marital status, household size, location (branch), educational level, working hours/week, PPI score in 2015, business time, type of activity, and loan (access to a AIM business loan).

To apply the quantile regression model, the sample was divided in 4 equal groups based on the PPI scores variation and the correspondent quartiles 1 to 3 were computed (Table 7). The quartiles start from the sub-group of clients with lower PPI variation scores (negative variations) to those who have experienced the stronger positive variations. (Note that higher PPI scores are associated with a lower likelihood of the client being poor, and so, an increase in the PPI score implies a better economic situation).

Table 7 – Sample Quartiles

Quartile	PPI variation (2015 –2017)
1 (0.25)	-0.09
2 (0.5)	0.04
3 (0.75)	0.20

The regression results can be consulted in Annex III. They show that, for all quartiles, the variables 'age', 'PPI$_{2015}$' (in other words, the poverty level at baseline) and 'working hours per week' are able to explain significant variations in the change in PPI scores observed over time, and that the signs of the coefficients are consistent throughout the quartiles (positive for age and working hours, and negative for PPI$_{2015}$). This means that, on average:

- o an increase in the age of the entrepreneur is associated with a higher PPI score, thus a lower probability of being poor;
- o an increase in the number of working hours per week has a positive effect on the change in PPI scores during the period;
- o there is a negative relationship between the initial poverty level of the entrepreneur and the change in PPI observed over the sample period, with poorer entrepreneurs achieving the greatest increases in PPI scores, potentially reducing the poverty gap.

Interestingly, personal characteristics such as household size, marital status, two of dummy variables for location (Badami Bagh and Kot Khawaja Saeed) and one for education level (secondary school) were found to explain a negative and statistically significant change in the PPI scores for the respondents in the lower quartile. While access to the loan was statistically significant for the respondents in quartile 3 (upper quartile), indicating that the loan at least partly explains the increase in PPI scores observed between 2015 and 2017 for these entrepreneurs.

Gender, business time and type of activity were not statistically significant, at a 5% significance level, for all quartiles.

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[15] The variables in the study do not follow a normal distribution, which requires the implementation of regression models other than the traditional OLS (that relies heavily on the assumption of normality). In this case, quantile regression was applied, allowing not only to overcome the issues regarding the variable behaviour but also to get some further insight on the sample heterogeneity.

Conclusion

This report represents a key moment in the LWC evaluation project, which started in 2014-15. It gives an insight into the changes on the lives of AIM clients after they have completed their first microcredit loan. It also represents a first step on what is meant to become a continuous evaluation process aiming to benefit all stakeholders involved – LWC will have evidence from the field to provide to their different supporters; AIM will have relevant information on their clients to inform its management decisions and improve their microcredit programme, and ultimately the clients will benefit from an improved programme that better suits their needs. Moreover, the lessons learnt over the past two years have the potential to be useful not only for the group of AIM clients supported by LWC lenders, but to all clients in similar contexts (which includes the majority of the institution's branches located in urban/peri-urban areas) as well as to other LWC partner MFIs.

Although two years is a relatively short period, which some authors suggest being insufficient to capture changes in poverty levels,[16] the findings from the two waves of the household survey show improvements for a significant percentage of the new AIM clients, both at business and household level. This is reinforced by the initial results of the comparison between clients and non-clients. Despite being a first exploration of the data with methodological limitations associated with the unbalanced sample sizes, the analysis suggests that the microcredit loan is one of the factors explaining the change in PPI scores over time for those who have experienced stronger positive variations (and not being significant for those with negative variations). Further testing and in-depth analysis will be necessary to corroborate these findings and provide explanations on how the participation in the microcredit programme contributed for the outcomes.

It is also important to stress that these positive outcomes should not be taken for granted. There was a share of the interviewed clients who have experienced a deterioration of their economic situation; hence, understanding the causes for their declining performance would be important for AIM to better identify risk factors and minimize both the volume of these situations and their consequences.

A final note would be to highlight the clients' perception on the changes they experienced over this period. Even given the interviews' time restrictions, not allowing for the full development of answers, the general feeling after completing the first loan was of satisfaction, and it is particularly interesting that, at least a part of these clients, acknowledge they have overcome some of the barriers in their access to finance.

References

Banarjee, A., D. Karlan and J. Zinman (2015), "Six Randomized Evaluations of Microcredit: Introduction and Further Steps", *American Economic Journal: Applied Economics* 7(1): 1-21

Chen, G., S. Rasmussen and X. Reille (2010), "Growth and Vulnerabilities in Microfinance," Focus Note Nr. 61, Washington DC: CGAP

Duvendack, M., R. Palmer-Jones, J. Copestake, L. Hooper, Y. Loke and N. Rao (2011), *What is the evidence of the impact of microfinance on the well-being of poor people?*, London: EPPI Centre, Social Science Research Unit, Institute of Education, University of London

Khan, A.A., Ishaq, M.S., Afonso J.S. and S. Akram (2017), "Is it possible to provide qard hasan and achieve financial sustainability? The experience of AIM in Pakistan", in Harper M. and A.A. Khan (eds*), Islamic Microfinance – Shari'ah compliant and sustainable?,* UK: Practical Action

Odell, K. (2010), *Measuring the Impact of Microfinance – Taking Another Look*, Grameen Foundation, Washington DC

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[16] See Chen *et al.* (2010)

Annex I

List of quantitative variables tested using Mann-Whitney Tests

Variable	Description	Unit
Age	Age in 2017 (estimated from survey 2015)	No.
Household Size	Household members in 2017 (survey 2017)	No.
Business Time	Years owning the business in 2017 (survey 2017)	No.
Working Hours	Average hours/week in 2017 from original data on 'working hours/day' and 'working days/week' (survey 2017)	No.
Loan Amount	First loan amount (survey 2015)	PKR
PPI_2015	PPI score at baseline (survey 2015)	No.
PPI_2017	PPI score in 2017 (survey 2017)	No.
PInc_2017	Monthly personal income in 2017, current values (survey 2017)	PKR
HHInc_2017	Monthly household total income in 2017, current values (survey 2017)	PKR
HHExp_2017	Monthly household total expenses in 2017, current values (survey 2017)	PKR
Weight PI/HHI_2017	Proportion of personal income in the household total income in 2017, current values (survey 2017)	No.
PPI Variation	Percent difference between PPI scores in 2015 and 2017 (survey 2015 and survey 2017)	%
Total Employment Absolute Variation	Absolute difference between total employment in 2015 and 2017 (survey 2017)	No.
Personal Income Real Variation	Percent difference between personal income in 2015 and 2017, both at 2015 values (survey 2015 and survey 2017)	%
Household Income Real Variation	Percent difference between household income in 2015 and 2017, both at 2015 values (survey 2015 and survey 2017)	%
Household Expenses Real Variation	Percent difference between household expenses in 2015 and 2017, both at 2015 values (survey 2015 and survey 2017)	%

PKR: Pakistani Rupees

Annex II

Non-parametric Tests

The analysis was carried out for all the variables included in Annex I. Mann-Whitney tests were used to test the null hypothesis of the distribution of the selected variables being equal for defined sub-groups. The sub-groups are associated with clients' characteristics and they were chosen considering the results from the baseline survey and qualitative information collected throughout the project. In order to apply the tests, dummy variables were constructed for:

- o Gender (female)
- o Location (Badami Bagh, Kot K. Saeed, Kahna Nau, Kasur)
- o Educational level (illiterate – no formal education; primary school – grades 1 to 5; secondary school – middle and matric levels; higher education – intermediate level and university)
- o Type of activity (trade; production and construction; services and education; sewing/tailoring);
- o House ownership (home owner – with or without property title)
- o Programme membership (client).

The table below shows the results statistically significant at a significance level of 5% (**) or 1% (***), demonstrating the existence of differences between the sub-groups for the studied variable. As guidance in reading the table, here is an example regarding location:

➢ Clients from Badami Bagh branch were found to be different from clients in the other three branches in terms of the loan amount with clients in Badami Bagh accessing lower amounts, on average (19,122 PKR compared with 20,155 PKR).

Gender			
Variable	Average **Female**	Average Male	U statistic
PPI Variation	0.12	0.08	20,336 **
Real PI Variation	1.01	0.36	13,415 ***
Loan Amount	19,750	20,120	20,015.5 ***
Age	41.5	37.8	17,571 ***
Working Hours/Week	60	67	11,118 ***
Personal Income 2017	14,971	22,158	10,061 ***
PPI 2015	60.1	65.7	18,538.5 ***
Location			
Variable	Average **Badami Bagh**	Average Other branches	U statistic
Total Employment Var.	0.07	0.53	10,477.5 ***
HH Income 2017	38,739	30,495	3,651 ***
HH Expenses 2017	23,085	18,039	8,405.5 ***
Loan Amount	19,122	20,155	10,735 ***
Working Hours/Week	57	66	6,561.5 ***
Variable	Average **Kot K. Saeed**	Average Other branches	U statistic

Variable	Average	Average	U statistic
Total Employment Var.	0.94	0.32	10,869.5 ***
HH Income Real Var.	0.76	0.29	4,178.5 **
PPI 2015	75.3	60.7	8,213.5 ***
PPI 2017	76.2	64.5	9,165 ***
Personal Income 2017	23,944	18,396	10,849 ***
HH Income 2017	47,622	29,120	2,968 ***
HH Expenses 2017	22,242	17,969	11,904.5 ***
Variable	Average **Kahna Nau**	Average Other branches	U statistic
Total employment Var.	-0.01	0.57	12,968 ***
PPI 2015	58.3	65.3	13,827 ***
PPI 2017	60.7	68.8	12,848 ***
Personal Income 2017	18,240	19,959	13,964 **
HH Expenses 2017	20,683	18,296	12,828.5 ***
Variable	Average **Kasur**	Average Other branches	U statistic
HH Income Real Var.	0.23	0.46	9,838.5 ***
HH Expenses Real Var.	0.06	0.22	16,098.5 ***
Business Time	10.2	9.8	20,474.5 **
PPI 2015	59.5	66.3	18,423 ***
PPI 2017	63.5	69.0	19,321 ***
Personal Income 2017	17,694	20,822	17,927.5 ***
HH Income 2017	25,908	36,430	8,561 ***
HH Expenses 2017	14,254	21,862	9,991.5 ***

Educational Level

Variable	Average **Illiterate**	Average Other Education	U statistic
PPI Variation	0.13	0.06	21,641 **
Age	41.2	37.2	18,332.5 ***
Business Time	10.4	9.5	21,838.5 **
PPI 2015	57.9	68.8	15,586.5 ***
PPI 2017	62.5	70.7	17,657.5 ***
Personal Income 2017	17,435	21,469	16,886 ***
HH Income 2017	28,535	34,815	10,504.5 ***
HH Expenses 2017	16,989	20,578	19,459.5 ***
Variable	Average **Secondary School**	Average Other Education	U statistic
PPI Variation	0.03	0.13	17,116 ***
HH Expenses Real Var,	0.29	0.09	14,826.5 ***
Age	36.7	40.5	15,799 ***
PPI 2015	70.9	60.0	13,058.5 ***
PPI 2017	71.2	64.7	15,775.5 ***
Personal Income 2017	22,755	18,007	14,425 ***
HH Income 2017	36,349	29,635	8,525 **
HH Expenses 2017	21,487	17,684	14,744.5 **
Variable	Average **Higher Education**	Average Other Education	U statistic

HH Inc. Real Variation	1.08	0.33	700 ***
Loan Amount	20,933	19,946	2,381 **
Age	32.7	39.5	1,903.5 ***
HH Size	5.2	6.5	2,052 **
PPI 2015	80.9	62.9	1,154 ***
PPI 2017	82.6	66.2	1,376 ***
HH Income 2017	45,000	31,002	805 ***
HH Expenses 2017	25,400	18,665	21,205 **
Type of Business			
Variable	Average **Services**	Average Other Activity	U statistic
Working Hours/Week	70	63	5,854 **
Variable	Average **Sewing/Tailoring**	Average Other Activity	U statistic
Total Employment Var.	1.1	0.2	13,764 ***
HH Expenses Real Var.	0.03	0.21	14,685 **
Loan Amount	19,792	20,044	17,815.5 **
Working Hours/Week	60	66	10,002.5 ***
Personal Income 2017	16,085	20,850	12,189 ***
HH Expenses 2017	16,896	19,618	16,031.5 ***
Variable	Average **Trade**	Average Other Activity	U statistic
HH Expenses Real Var.	0.33	0.09	14,149 **
Working Hours/ Week	68	63	10,007 **
Personal Income 2017	20,902	18,958	15,083 ***
HH Income 2017	34,718	30,243	8,669 **
HH Expenses 2017	20,113	18,334	16,788.5 **
Variable	Average Production	Average Other Activity	U statistic
Loan Amount	20,486	19,801	15,646 ***
Business Time	11.3	9.4	14,854 ***
Personal Income 2017	21,908	20,850	14,730 **
House Ownership			
Variable	Average **House Owner**	Average Non-house owner	U statistic
Total Employment Var.	0.7	0.3	18,185 **
HH Income Real Var.	0.59	0.27	6,878.5 ***
HH Expenses Real Var.	0.24	0.12	16,107 **
Age	40.6	38.4	19,217.5 **
Business Time	9.8	10.2	18,870.5 **
PPI 2015	69.0	61.1	16,019.5 ***
PPI 2017	71.9	64.4	15,666.5 ***
Personal Income 2017	22,892	17,956	14,253.5 ***
HH Income 2017	38,103	29,320	7,313 ***
HH Expenses 2017	21,198	17,722	16,374.5 ***

Annex III – Quantile Regression

Dependent Variable: PPI Variation
Method: Quantile Regression
Sample: 499
Included observations: 383

Independent Variable	Type	Quartile 1 (0.25)	Quartile 2 (0.50)	Quartile 3 (0.75)
		Coefficient		
Age (2017)	Q	**0.006200 *****	**0.006694 *****	**0.009906 *****
Female	D	0.053218	0.006750	0.031259
Married	D	**-0.110948 ****	-0.041616	-0.093870 *
Badami Bagh Branch	D	**0.089220 *****	0.046650	**0.100315 ****
Kahna Nau Branch	D	0.012617	-0.006522	0.017976
Kot Khawaja Saeed	D	**0.157151 *****	0.080715 *	0.074695
Trade	D	0.028370	0.037280	0.029608
Services and Education	D	-0.016557	-0.039921	0.011931
Production and Construction	D	0.034542	0.040377	0.002536
Primary School	D	0.067060 *	0.025416	0.032394
Secondary School	D	**0.076846 ****	0.042123	0.000686
Higher Education	D	0.046482	-0.000256	-0.004743
Household Size	Q	**-0.016481 *****	-0.005000	-0.001460
Business Time (2017)	Q	0.002395	-0.000742	-0.001830
Working Hours/ Week (2017)	Q	**0.001761 ****	**0.002213 *****	**0.002754 ****
PPI_2015	Q	**-0.006205 *****	**-0.005910 *****	**-0.007338 *****
Loan	D	0.046636	0.054611	**0.198767 *****

Notes: Q – quantitative variable, D – dummy variable (1,0)
*** significance level of 1%, ** significance level of 5%, * significance level of 10%