
IMPACT REPORT

Results of Impact Study – Attadamoune Morocco

This report presents the results of an impact study conducted among the clients of Attadamoune. The study is based on an approach and (customized IT-based) survey tool developed by Oxfam Novib. This approach involves obtaining impact information directly from clients and includes their perception of changes experienced in key dimensions of poverty, as a result of development interventions, in this case the microfinance products and services of Attadamoune. At the start of the study a Theory of Change was developed, based on the input obtained from Attadamoune. The Theory of Change reveals the expected social and economic impact of microfinance products and services provided by Attadamoune. This expected impact was tested with the help of a survey conducted among a randomly selected sample of clients and non-clients (as a control group). Propensity Score Matching was used to analyze the outcomes of the survey. Evidence was found, that the work of Attadamoune successfully contributed to improved lives of its clients. Microfinance appears to have brought about the greatest positive impact on the livelihoods of female clients. In addition, a positive impact is observed on education, health, and life and security. Contrary to expectations, no positive impact was revealed on women's empowerment and social participation.

This report is the result of a joint impact evaluation project initiated by **Oxfam Novib** and **Triple Jump**. This impact report is written to contribute to increased transparency on effectiveness, to support accountability, and to invite feedback on impact measurement. They do not necessarily reflect Oxfam's or Triple Jumps' policy positions. The views expressed are those of the author and not necessarily those of Oxfam and Triple Jump.



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EXECUTIVE SUMMARY

This report summarizes the results of an impact evaluation of microfinance products and services on the beneficiaries of Attadamoune MicroFinance (previously called AMSSF/MC) in Morocco. Attadamoune aims to give entrepreneurial people access to financial services, independent of their social-economic background. Attadamoune focuses on two groups of clients: poor people and women. By providing access to financial resources Attadamoune aims to contribute to local and rural development in Morocco.

An impact evaluation was designed by Oxfam Novib to assess the impact of Attadamoune's work on empowering people and increasing household wellbeing. The results are based on an assessment of the differences in outcomes between clients of Attadamoune who received a loan between 2008 and 2010 (the target group) and future clients (the control group). In total 503 respondents were randomly selected and interviewed; 251 clients of Attadamoune and 252 future clients. To reduce bias in the results, propensity score matching (PSM) is used in the statistical comparison of the two groups on a number of impact indicators. To guarantee the high quality of data a local consultant was hired to train the interviewers and to do quality checks during the data collection period. Oxfam Novib did the data analysis.

Key findings

IMPACT: Clients of Attadamoune have more sustainable livelihoods

- In line with the Theory of Change, Attadamoune's financial support has had a positive impact (6%) on the total Sustainable Livelihood Index. This Impact Index is an aggregated figure including 6 livelihood indicators: perceived increase in income and savings; number of meals consumed; food intake; ownership of assets; and living standards.
- Significantly more clients of Attadamoune have perceived an increase in their income (25.2%) and savings (15.4%) over the last 12 months.
- Compared to male clients, the impact on perceived increase in income is higher for female clients (26.3%). According to Attadamoune, a possible reason might be that in Morocco women are more financially deprived than men. Consequently, obtaining a loan has a higher impact on female clients than male clients.

IMPACT: Attadamoune's clients are less vulnerable

- Clients of Attadamoune are better able to anticipate, handle, resist, and recover from the impact of natural or man-made disasters than future clients. However, the measured impact on the total level of improved Life and Security Index is not significant.
- Nevertheless, significantly more clients feel more confident of facing future threats (12.2%). According to Attadamoune it may be a simple case of living in stronger houses and having access to assets (including savings) enabling them to withstand natural disasters. Another possible reason they gave is that often after they receive a loan, clients become more physically active and start building social and physical saving nets.
- Comparing male and female clients, we found evidence that female clients feel more confident to cope with threats (10.4%) than male clients. In addition, obtaining a loan from Attadamoune has a higher impact on the level of confidence to cope with disasters. Attadamoune presumes that clients with savings feel more confident because they have a financial buffer that enables them to cope with a disaster.

MIXED IMPACT: Clients of Attadamoune report mixed outcomes in health and education

- There has been no impact on formal school enrolment. No improvement is observed, because both the target group and the control group have similar school enrolment rates. About 92% of the children of school-going age is enrolled in formal education. However, the dropout rate of the target group (7.7%) is significantly lower than the dropout rate of the control group (18.3%). The positive impact (9.6%) for Attadamoune's clients on the dropout rate is also an outstanding score compared to the national dropout rate (11.7% in 2011) in

Morocco¹. Considering both results, we can conclude that children of both current clients and future clients not only start formal education when they are of school-going age; most of them also continue their education at least until grade 3. According to Attadamoune this may be related to the increase in income and savings which decreases the need of child labour.

- Attadamoune's clients were significantly more frequently ill (minus 6.5%) than future clients. According to Attadamoune this outcome is difficult to explain and needs further (qualitative) analysis. A possible reason they gave is that their clients work hard for their business which can have a negative effect on the physical wellbeing of clients. Another explanation may be that because the control group has lower incomes and savings they are not always able to buy medicines and therefore they do not consider themselves ill. A final possible reason for this negative impact could be that people who have an own business are more aware of the number of days they are ill than people without an own business and therefore score higher on the illness indicator.

NO IMPACT: No proven impact is observed on social and political participation

- Clients do not show higher participation in social organizations or political parties. This is true for the general membership and for people in influential and leadership positions. This result should be considered within the political context of Morocco. According to Attadamoune, microfinance contributes directly to the independence of people, especially of women. However, social and political participation is a more indirect effect of people's independence and empowerment. Although women have equal rights to vote and to participate in political parties and trade unions since 1960, the social and political participation of women is still low, at present. According to Attadamoune, women's social and political participation does not only depend on the level of women empowerment but also on the social and political willingness and the measures taken to reinforce the position of women within the social and political arena.

NEGATIVE IMPACT: Negative impact on women's empowered regarding family planning

- Clients of Attadamoune show lower rates of empowerment, but only the negative impact on empowerment in terms of decision-making around family planning is significant. This means that in the households of future clients women have more power in decisions related to family planning. Without additional qualitative data it is difficult to explain this unexpected finding. According to Attadamoune, the low impact of microfinance on the empowerment of women is in line with their experiences in practice. In Moroccan everyday life, most decisions in the household are taken by the man as the head of the family. Only in a few cases women gain more decision power because of their work and salary while more often the salary of the wife is considered just a supplement to the income of the husband. Consequently, the husband continues to be the household head making the decisions.
- We did find a positive impact of microfinance on the level of self-esteem, meaning that on average clients of Attadamoune feel more confident than respondents in the control group. This finding is in line with the Theory of Change, which assumes that financial support can help clients to become more self-confident. However this impact is not significant which might be a reason for the low impact on empowerment.

Recommendations

- It is recommended that Attadamoune organizes a reflection session on the findings and consider developing specific actions in terms of further studies or possible program adjustment to strengthen the positive impact and to analyze causes of lack of impact or negative impact.
- Future research could use a qualitative approach to assess the quantitative outcomes and create a context to interpret the results found in this study. For example, through in-depth interviews Attadamoune might find an explanation for the negative impact on illness or the lack of empowerment regarding expenditures.

¹ http://data.un.org/Data.aspx?d=UNESCO&f=series%3ADR_1

INTRODUCTION

Oxfam Novib has conducted a study, at the request of Triple Jump, on the impact of microfinance on the lives of Attadamoune's beneficiaries. Triple Jump commissioned this study to support microfinance institutions (MFIs) in becoming more effective agents of positive social and economic change. Measuring impact helps MFIs to tell their story to stakeholders and be accountable. Telling a good narrative needs facts and impact, not just output. An impact assessment makes an organisation's results visible and shows the level in which that MFI deliver benefits to their beneficiaries. This transparency gets external donors more involved and it motivates employees and volunteers, and those employees and volunteers are able to see the progress they have contributed to. Likewise, the aim of this study is to enable Attadamoune to report in a powerful way on the impact of its work on beneficiaries. If necessary the results can be used as input in strategic adjustments to improve social-economic performance and effectiveness.

Background Attadamoune MicroFinance

This study was carried out among clients of Attadamoune MicroFinance (previously AMSSF/MC). Attadamoune MicroFinance was founded in 1994 and is based in Fes, Morocco. The mission of Attadamoune MicroFinance is to give entrepreneurial people access to financial services, independent of their social-economic background. These financial services can be used to develop their activities in transparency and solidarity. Attadamoune MicroFinance focuses on two client groups: poor people and women. By providing access to financial resources Attadamoune aims to contribute to local and rural development in Morocco. Attadamoune MicroFinance has several types of loans, including individual and group loans. In 2013, Attadamoune MicroFinance counted 13.800 active clients with a total outstanding portfolio of about 50.000.000 MDH.

Study Objective

The objective of this study is to measure achieved changes in the lives of people who are clients of Attadamoune, to identify some common strengths and weaknesses in the effects, to draw lessons for internal policy development, and to contribute to strengthening Attadamoune's accountability.

This impact evaluation measures the achieved changes in the lives of people. In particular, this report answers the question: *what is the social and economic impact of the services provided by Attadamoune at the client level?* The study was conducted between July 1 and November 30, 2013.

Methodology

The distinctive characteristics of the applied method are:

- **The methodology was developed to give a strong voice to beneficiaries.** For this reason data is collected at the client level. This study goes beyond measuring output. Instead it measures the changes in the lives of beneficiaries.
- **The survey sample was selected randomly.** A sample list was randomly selected from the full list of all of Attadamoune's clients. To get a complete representation of the clientele, dropouts are included in the sample. Dropouts are defined as the people who received a loan from Attadamoune between 2008 and 2010 but not anymore. Including dropouts is important because they may be impacted differently. We wanted to know what the impact was after 3 to 5 years and selected clients who had received a loan between 2008 and 2010. However, some of the questions measured the impact over another time span. For example, the questionnaire refers to the increase in income and savings over the past 12 months. The one-year time span was used to reduce the risk for misjudgement by

respondents. Consequently, the impact measured by this type of questions may underestimate the real impact over a period of three to five years.

- **We used a control group to identify impact.** This impact evaluation assessed the difference in outcomes on key impact variables between clients of Attadamoune and a control group. The control group was used as a proxy for what would have occurred had there been no intervention. In total 496 respondents were interviewed; 246 clients (or dropouts) of Attadamoune and 250 new clients (the control group). The new clients are people who applied for a loan, met the selection criteria of the MFI, and will receive a loan in the nearby future. To measure impact it is necessary to compare the outcomes of clients with a control group that has identical characteristics. The control group exists of new clients, because we assume that future clients are very similar to clients in their general characteristics and entrepreneurial attitude.
- **The data was collected with the help of a quantitative survey.** Using a multiple choice questionnaire, respondents were asked to rate and comment on different aspects of their livelihood. Due to the lack of reliable data on income and savings, we measured the perceived change in income and savings.
- **The questions are based on a Theory of Change.** Theory of Change (see below) was discussed and finalised during a workshop with Attadamoune. Based on Theory of Change, the most relevant questions were selected from the right-based poverty survey² developed by Oxfam Novib. A few questions were adjusted to the specific context in which Attadamoune works.
- **A Smartphone application was developed to collect data.** The app facilitates cost-efficient and reliable data collection.
- **Local interviewers (students) were trained to collect reliable data.** Appointing students as interviewers had the advantage that they could verify the answers with reference to the local context. Clients would therefore be more inclined to providing truthful information. However, there is always the risk that clients give socially desirable answers to gain a positive treatment from Attadamoune. To minimize this risk we hired a local consultant to do quality checks during the fieldwork.
- **Propensity Score Matching (PSM) was used to calculate impact.** PSM is a statistical method that matches individuals from a large population of non-participants, who are observationally similar to participants in terms of general characteristics (e.g. sex, level of education, marital status) not affected by the intervention (i.e. the microfinance products). Each target group member is matched with a similar control group member. The average difference in outcomes between the two groups is then compared to get the impact of the intervention.
- **The data analysis was done by Oxfam Novib.** The data analysis and impact calculations were mainly based on statistical methods. The methodological choices are made in consultation with the Wageningen University in The Netherlands.

A more detailed explanation of the used method, sampling, data collection, statistical data analysis methods, research limitations, and research ethics is provided in Annex 1.

Theory of Change

This study uses a multidimensional approach to impact, and is based on the assumption that different factors determine poverty beyond income. This multidimensional approach is based on

² Oxfam Novib has developed the World Citizens Panel; a poverty survey to support partner organization measuring the impact of their projects and programs.

the Universal Declaration of Human Rights. The Universal Declaration assumes that every human being has inalienable rights and that poverty and exclusion are a violation of these universally recognized basic rights, which are:

- (1) the right to a sustainable livelihood
- (2) the right to essential social services (health and education)
- (3) the right to life and security
- (4) the right to be heard
- (5) the right to an identity³

The impact domains used in this study are deduced from these five – interconnected – basic human rights. The impact domains can be classified in an economic and a social dimension. Each domain was translated to indicators, variables and questions (Annex 2 explains the different questions). The questions to measure the impact on these five rights are based on various international standards and indices, such as the social welfare index of Social Watch and the multidimensional poverty index developed by the UNDP. Table 1 provides an overview of the different impact domains used in this study.

Table 1 Impact domains

Impact dimension:	Basic rights:	Impact domains:
Economic	Right to sustainable livelihood	Perceived change in income & savings
		Ownership of assets
		Living standards
		Food security & meals a day
Social	Right to essential services	Education
		Health
	Right to life and security	Vulnerability
		Resilience & coping capacity
	Right to be heard	Social and political participation
Right to an identity	Empowerment	
	Reproductive rights	

To decide which impact indicators are relevant to include in the questionnaire, a Theory of Change was used. A Theory of Change is an approach to navigating the complexity of social change processes⁴. This is done by making our assumptions explicit and by analyzing them critically. This study is based on the following set of assumptions regarding the expected and intended benefits from financial inclusion:

The business loans and savings from Attadamoune open a world of opportunities to its clients; opportunities the formal financial sector denied them. Loans enable them to buy tools and materials to start an income generating business and/or to increase the productivity of an existing business. **Increased income** generated from these businesses allows them to pay school fees to **educate** their children, stabilize **food** sources and pay for other expenses that lead to the improvement of the **health** and wellbeing of their families. In addition, access to financial services helps poor people to manage their day-to-day **assets and resources**: Low-income families can use credit and savings to tap into past or future income, helping them to both take advantage of immediate opportunities and, for example, to survive periods of food insecurity.

Poor people do not only have low incomes but are also vulnerable to disasters and uncertainties. The **lack of preparedness** or **coping capacity** may result in a slower response to a disaster, leading to a greater loss of life or prolonged suffering. They also often lack reserves in times of need or buffers to absorb the shocks of income losses. Savings, credit

³ Oxfam, 2013

⁴ Eguren, 2011.

and insurance provide sustainable and low-cost coping strategies, increasing people's resilience to future disasters. Saving accounts – equally critical financial tools – facilitate the safe **accumulation of assets**, while micro-insurance **reduces people's vulnerability to risk**. Together these services help poor people to improve their lives and begin to work their way out of poverty. If a household loses a source of income, it might not have to **withdraw a child from school**, sell a valuable asset, or fall deeper into poverty.

Microfinance is particularly able to **empower women**: it gives them access to materials and the human and social capital necessary for making strategic choices in their lives: it establishes or strengthens financial independence; transforms power relationships; **strengthens reproductive rights**; improves stability and family prospects by directing more income to families; and, particularly, **engenders self-esteem** and pride. This economic independence often translates into more productive communities. In addition, financial services foster independence. Microfinance can help clients to grow more **self-confident** and, with **economic empowerment**, to step out and **participate in local government and social organizations**, commanding the respect of their communities. The various expected relations between microfinance and the social and economic dimensions of poverty are visualized in Annex 3.

Throughout this study emphasis is put on the expected impact areas mentioned in the Theory of Change (in bold). Based on these expected impact areas the questionnaire was composed and in the following sections we will analyze the results per basic right.

RESULTS

Before the various impact indicators were analyzed, the financial and general characteristics of the target group and the control group were compared to assess to what extent the control group had characteristics similar to the target group's. This analysis is important for determining whether the differences in outcomes on the impact indicators can be attributed to the products and services provided by Attadamoune. Afterwards, the impact of Attadamoune was measured on the five impact dimensions described in the Theory of Change. Finally, the impact of savings in combination with a loan from Attadamoune was analysed as well as the effects on the female clients.

Interpretation of results

This report reveals the impact of microfinance on each impact indicator. The size and reliability was calculated for each impact indicator. The size of the impact is provided as a percentage and the reliability of this percentage is indicated by 1, 2 or 3 asterisks (*). The more asterisks the higher the certainty that the difference between the target group and control groups reflects a real impact on Attadamoune's clients. In some cases impact was measured, but due to high variation in the outcomes the impact could not be assigned to the microfinance services. In these cases the impact is not marked with an asterisk(s). The reason is that the answers on this impact indicator vary a lot, which increases the likelihood that the measured impact is due to chance.

Financial Characteristics

In order to identify the impact of microfinance, it is important to determine that the target group has more financial resources than the control group. The financial characteristics are summarized in Table 2. The characteristics on which both groups differ significantly are indicated with an asterisk (*)⁵.

⁵ We have applied a Chi2 test to see to what extent the financial characteristics of the control group differ significantly from the target group. This is a statistical test that compares the observed and expected frequencies and sees if the difference is due to chance or that they are significant different from each other (Fisher, 1922). More information about the Chi2 test is provided in Annex 1. The more asterisks the better because this indicates that there is a higher certainty that the target group has more financial resources than the control group.

Table 2 Financial characteristics

Variable	Target Group (N=251)	Control Group (N=252)	Difference ⁶
	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>
% people having savings	60.96	40.48	20.48***
% people having insurance	21.51	20.24	1.27
% people receiving a loan (micro credit)	82.92	17.08	72.84***

* Significant at 10% level; ** Significant at 5% level; *** Significant at 1% level⁷

Findings

- Based on the data provided in Table 2, 41 respondents (17.08%) were removed from the control group sample because they had already received a loan from an institution other than Attadamoune. Including these respondents in our analysis would dilute our conclusions about the impact of receiving a loan from Attadamoune.
- Table 2 also shows that significantly more respondents in the target group have savings than in the control group. **Figure 1** illustrates the various locations where people keep their savings.
- The percentage of people that has insurance is rather similar for the clients of Attadamoune and the control group. In both groups about 20% of the respondents has insurance. Because these groups show similar outcomes it is not possible to single out the impact of Attadamoune’s insurance on the various impact domains. **Figure 2** provides an overview of the different type of insurances that people have.

Based on these findings, we have decided to mainly focus on the impact of receiving a loan from Attadamoune, taking into account that Attadamoune offers complementary services and products such as insurance and savings. Thus the observed impact should be seen as the results of the total microfinance package offered by Attadamoune.

Figure 1 Type of Savings

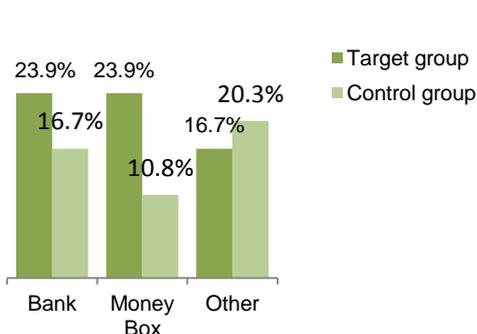
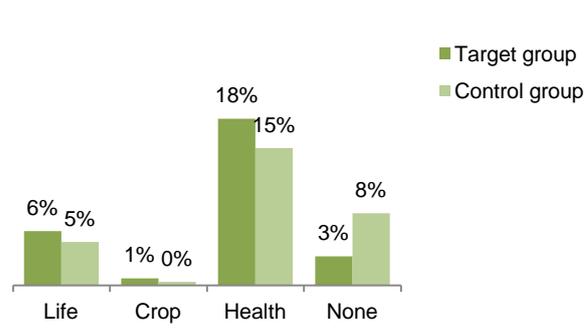


Figure 2 Types of Insurance



⁶ We have applied a Chi2 test to see to what extent the financial characteristics of the control group differ significantly from the target group. This is a statistical test that compares the observed and expected frequencies and sees if the difference is due to chance or that they are significant different from each other (Fisher, 1922). More information about the Chi2 test is provided in Annex 1. The more asterisks the better because this indicates that there is a higher certainty that the target group has more financial resources than the control group.

⁷ The asterisk (*) presented in all tables of this report reflect the extent to which there is a significant difference or impact. Significant at 10% level means that we can say with 90% certainty that the groups differ from each other.

General Characteristics

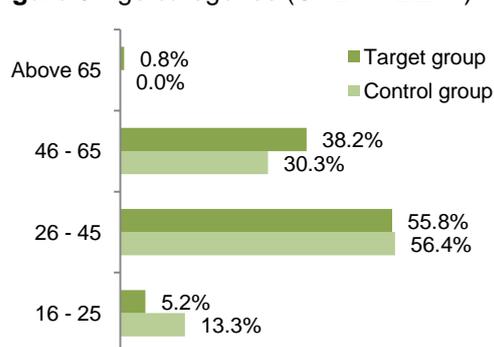
The general characteristics of both the target group and the control group are summarized in Table 3. These general characteristics are the so-called independent variables; this means that we assume that they do not depend on microfinance interventions. More details on marital status, occupation, household size and household dependency ratio are presented in Annex 4.

Table 3 General characteristics

Variable	Target Group (N = 251)	Control Group (N = 211)	Difference ⁸
	<i>Per cent</i>	<i>Per cent</i>	
% women	70.5	51.2	19.3***
% Literate people (able to read)	56.6	64.5	7.9*
% Higher educated respondents (completed primary school or higher education)	30.3	44.1	13.8***
% (Married) couples	76.1	59.7	16.5***
% respondents with own business	41.0	22.3	18.7***
% respondents living in a (semi) urban area	89.2	94.3	5.1*

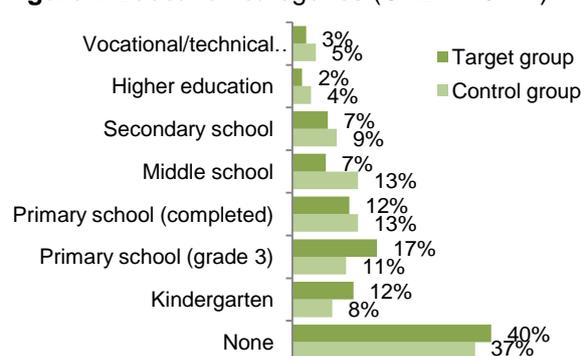
* Significant at 10% level; ** Significant at 5% level; *** Significant at 1% level

Figure 3 Age categories (Chi2 = 12.2***)



* Significant at 10% level; ** Significant at 5% level; *** Significant at 1% level

Figure 4 Education categories (Chi2 = 13.7**)



Findings

- The data in Table 3 and Figures 3 and 4 show that the control group differs significantly from the target group with regard to all general characteristics.
- The general characteristics of the **target group** show that about 71% is female. Moreover, the data indicates that about 57% of the target group is literate; meaning he or she is able to read. Furthermore, 30% of the target group has at least finished primary school; 76% of the target group is a (married) couple; 41% of the target group has an own business (is entrepreneurial); 89% of the target group lives in an urban or semi-urban area; and the majority (56%) is between 26 and 45 years old.
- The general characteristics of the **control group** show that 51% is female, 65% of the control group is literate; 44% has at least finished primary school; 60% is a (married) couple; 22% has an own business; 94% of the control group lives in an urban or semi-urban area; and the majority (56%) is between 26 and 45 years old.

⁸ We have applied a Chi2 test to see to what extent the general characteristics of the control group differ significantly from the target group. This is a statistical test that compares the observed and expected frequencies and sees if the difference is due to chance or that they are significant different from each other (Fisher, 1922). More information about the Chi2 test is provided in Annex 1. The more asterisks the better because this indicates that there is a higher certainty that the target group has more financial resources than the control group.

The differences in general characteristics between the target group and control group make it impossible to conclude that observed differences in outcomes on the various impact indicators (below) are the results of microfinance; these differences in outcomes could have been caused by the differences in general characteristics, such as levels of education and/or age.

To overcome this problem we have used the **Propensity Score Matching (PSM)** method to calculate the impact of microfinance. PSM is a statistical method to develop a control group that is as similar to the target group as possible in terms of general characteristics. The idea is to find, from a large group of nonparticipants, individuals who are observationally similar to participants in terms of characteristics not affected by the intervention (that is in this case microfinance services). In this study the following general characteristics were used to match the control group with the target group: sex, level of education, location of household (urban/rural), marital status, and literacy. For example, the results of a highly educated, literate, married woman living in a city who is in the target group are compared with the results of a woman in the control group with the same characteristics. In the same way, each participant is matched with an observationally similar non-participant, and the average difference in outcomes across the two groups is then compared to get the effect of microfinance. (Annex 1 explains the applied PSM method in more detail).

Sustainable Livelihoods

Table 4 summarizes the impact of microfinance Attadamoune provides on the livelihoods of its clients. The impact on sustainable livelihoods is measured by six indicators derived from the Theory of Change: perceived increase in income; perceived increase in savings; food intake; no. of meals consumed a day; ownership of assets; and living standards. Annex 2 provides more details on the indicators used in this study.

Table 4 Impact on sustainable livelihoods

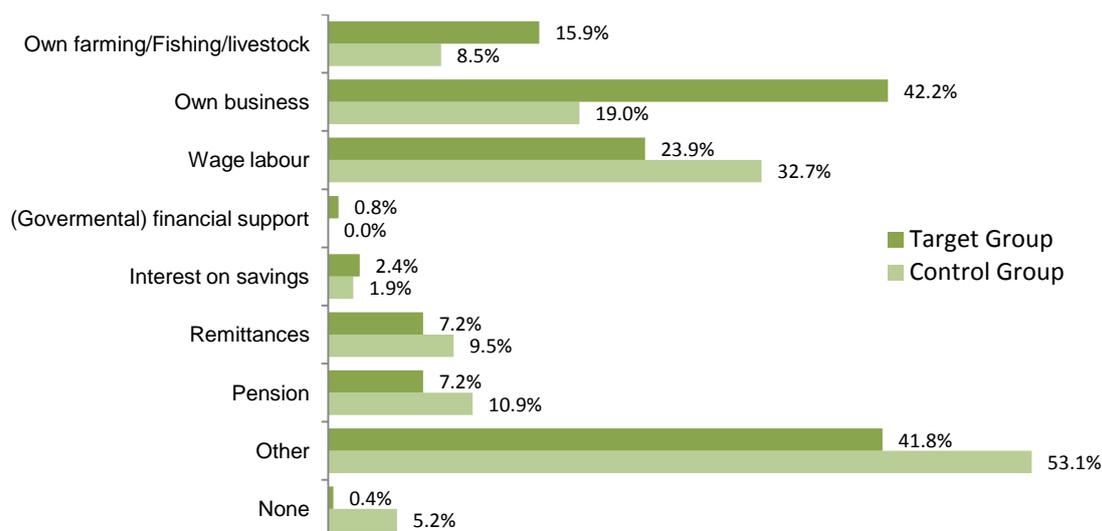
Variable	Target Group (N=251)	Control Group (N=211)	Results
	<i>Frequency (%)</i>		<i>IMPACT (%)⁹</i>
% people perceived an increase in income	61.0	39.8	25.2***
% people perceived an increase in savings	46.6	31.8	15.4***
% people reduced their food intake in the past 3 months	10.0	10.0	-1.9
	<i>Mean</i>		<i>IMPACT (%)</i>
no. meals a day	3.49	3.51	-1.5
Ownership of assets (Assets Index)	0.43	0.42	-0.1
Living standards (Housing Index)	0.75	0.76	-2.8
Sustainable Livelihoods Index	0.70	0.64	6.0***

* Significant at 10% level; ** Significant at 5% level; *** Significant at 1% level

In addition to Table 4, Figure 5 provides an overview of the various sources of household income.

⁹ The Impact is measure in STATA using Propensity Score Matching methods.

Figure 5 Sources of household income (The percentage = # of respondents working in that field / total respondents)



Findings

- + The majority of Attadamoune’s clients has perceived an **increase in income** over the past 12 months. Respondents were asked to indicate whether they had observed an increase, decrease, or no change in their income. About 22% of Attadamoune’s clients has observed a great (over 20%) increase; 38% of clients has observed a slight increase; 26% has observed no change; and about 14% of clients has observed a decrease in income over the past 12 months. The calculated impact is 25.2% at a 1% significance level (this means that the result is very reliable). In other words, clients from Attadamoune perceived 25.2% more often an increase in income than future clients.
- + Figure 5 reveals that most households make an income from their own businesses, including the earnings from the production and/or sale of products and/or services, or from farming, fishing or livestock rearing. In addition to this income, some households receive money from remittances, wage labour or other sources. The figure shows the percentage of respondents receiving an income from each source. There could be one or more sources of income per household.
- + A positive impact of Attadamoune’s work is the higher number of clients (15.4%) that observed an **increase in savings** over the past 12 months. Over the past 12 months about 54% of Attadamoune’s clients has perceived an increase in savings.
 - The questions regarding income and savings refer to the perceived change over the last 12 months. Consequently, the outcomes should be seen as the impact over 12 months in the context of obtaining a loan over 3 to 5 years. Assuming that the total impact of microfinance is an accumulation of the improvements over a longer period of time, the indicators referring to the last 12 month might be an underestimation of the total impact clients have experienced over the entire period they are receiving microfinance products and services.
- There is no proven impact of microfinance on food consumption. On average, households consume more than 3 **meals** (breakfast, lunch, dinner) a day. Because the results of the target group and control group are rather similar, no impact was found. This means that households are on average food secure. This observation is confirmed by the finding that 90% of the respondents of the target group **did not have to skip a meal or cut the size of a meal** because of food insufficiency in the last 3 months. Due to the similar results observed in the control group no impact was observed.

- Not in line with our Theory of Change, no impact is observed on the number of **assets** owned. We have composed an Assets Index¹⁰ as a quantitative indicator for household ownership of assets (consumption and production goods). The total number of assets included in this index is 14. This means that an average index score of 0.4 indicates that households own 5.6 assets (14*0.4) of the asset list. Both the target group and the control group have an Assets Index score of 0.4 and therefore no impact was found.
- Table 4 indicates that the impact of microfinance on **living standards** is negative (-2.8%). This is not a significant result due to a high variation in outcomes. The living standard is a proxy for the quality of housing which is based on a Housing Index¹¹. The total number of housing indicators included in this index is 6. An index score of 0.75 indicates that on average household owns 4.5 housing assets (0.75*6) such as a concrete floor or a flush toilet. However, this outcome is not significant so can be caused by chance.
- + The **Sustainable Livelihoods Index**¹² shows a significant positive impact of 6%. In other words, on average obtaining a loan from Attadamoune results in 6% more sustainability of livelihoods.

Essential Services: Education and Health

Right to essential social services is defined by two domains: education and health. The included indicators are (1) formal school enrolment; (2) school dropouts; (3) ill health of respondents; and (4) mortality among children under five years old.

Table 5 Impact on Education and Health

Variable		Target Group	Control Group	Results
	No obs. Target group	Frequency (%)		IMPACT (%)
% Children in school age enrolled at formal school	155 ¹³	92.2	98.4	-1.8
% Households with no school dropouts	155	90.3	81.7	9.6*
% People ill in last 3 months	251	13.2	7.1	-6.5**
% Children who died before the age of 5	73 ¹⁴	5.5	4.4	-1.7
Essential Services Index	251	0.80	0.76	3.1

* Significant at 10% level; ** Significant at 5% level; *** Significant at 1% level

Findings

- The significant impact of minus 6.5% of microfinance on **illness** is remarkable. Compared to the control group, the target group is more often ill: about 13.2% of the target group was ill to the extent that he or she was unable to participate in daily activities while only 7.1% of

¹⁰ The composed Assets Index is a non-weighted index in which all household assets are included (that is; radio; bicycle; bed frame with mattress; refrigerator; television; computer/laptop; mobile phone; fishing net; tri-cycle; motorcycle; donkey/bullock; tractor; car/pick-up truck; other items with value of more than 4000 Dirham). This means that we simply sum up the number of assets owned, which is equivalent to setting asset = 1 for each asset and divide this total number by the total number of assets included (=14).

¹¹ The quality of housing is measured with a Housing Index indicator that includes (1) access to safe drinking water; (2) electricity; (3) concrete floor; (4) flush toilet; (5) cooking fuel; and (6) solar lightning. Likewise the Assets Index, the Housing Index is a non-weighted index whereby we simply add up the number of housing indicators with a maximum score of 6

¹² The Sustainable Livelihoods Index reflects the average impact on all 6 sustainable livelihood indicators. In this index all 6 sustainable livelihood indicators are included and equally weighted, so that each of them receives 1/6 weight. The maximum score on the index is 1.

¹³ Total number of clients that have children in the formal school age. The outcomes are compared with the outcomes of those households in the control group that also have children in the formal school age.

¹⁴ Total number of clients having children who are 5 years old or younger. The outcomes of these target group members are compared with the outcomes of those households in the control group also having children 5 years old or younger.

the control group had been considerably ill in the last 3 months. Clients of Attadamoune were ill on average 2.3 days over a period of 3 months.

- + A significant impact is observed on the number of **school dropouts**. The observed impact indicates that microfinance is associated with a lower incidence of school dropout. About 9.7% of the households of Attadamoune clients has one or more children who dropped out from primary school. Compared to the control group where 18.3% of the future clients has one or more school dropouts within their household this outcome is significantly lower.
- Regarding **school enrolment**, no significant impact (minus 1.8) was found, as both the target group (92.1%) and control group (98.4%) have a very high percentage of their children in the school-going age attending school. Households without children in the formal school-going age are excluded from the impact calculations on education.
- Based on the data in Table 5, having a loan from Attadamoune has no proven impact (minus 1.7) on the percentage of **children who died before they turned 5**. Regarding Attadamoune’s clients, about 5.5% of the children died before they were 5 years old. This indicator only takes the households into account where children were born in the last 5 years.
- The **Essential Services Index**¹⁵ shows no significant impact because the overall picture is mixed. Both negative and positive impact is observed. For example, there is hardly any positive or even negative impact on the percentage of school enrolment or the percentage of children who died before they turned 5. This means that the total Essential Services Index is mainly determined by the realized impact on the variables school dropouts and illness. For this reason it is difficult to conclude that there is impact found on the total index of right to essential services.

Life and Security

Based on the Theory of Change we expect that obtaining a loan and additional microfinance services makes clients less vulnerable to disasters. Less vulnerable people are likely to have increased capacities to develop social and economic empowerment and they will feel more confident towards the future. Three indicators were defined to measure the impact on vulnerability. The first indicator measures whether respondents experienced physical damage from a disaster to themselves or their belongings. The second indicator describes if people feel confident to cope with future disasters. The third indicator refers to the extent in which respondents have taken measures to cope with future disasters.

Table 6 Life and security

Variable	Target Group (N=251)	Control Group (N=211)	Results
	<i>Frequency (%)</i>		<i>IMPACT (%)</i>
% people experienced damage to themselves or their belongings	5.4	7.4	0.7
% people feeling confident to cope with future disasters	33.2	26.5	12.2***
% people taken measures to cope with future disasters	19.5	21.8	-7.2
Life and Security Index ¹⁶	0.49	0.47	1.9

* Significant at 10% level; ** Significant at 5% level; *** Significant at 1% level

¹⁵ In this index all 4 education and health indicators are included and equally weighted, so that each of them receives 1/4 weight. The maximum score on the index is 1.

¹⁶ In this index all 3 life and security indicators are included and equally weighted, so that each of them receives 1/3 weight. The maximum score on the index is 1.

Findings

- Clients of Attadamoune have less often **experienced damage to themselves or their belongings** over the last 12 months. This indicator shows the **vulnerability** of respondents to threats like banditry, state action, civil unrest or armed conflict, natural disaster, and discrimination. The impact measured is only 0.7% and is not significant.
- + The capacity to cope with future disasters is measured by the level of **confidence** that people have with respect to **coping with potential threats** in the future. About 33.2% of Attadamoune's clients feels confident to cope with future disasters. A lower percentage (26.5%) of the control group feels confident about their coping capacities in the future. The impact of microfinance is about 12.2%.
- Compared to the control group, Attadamoune's clients are less prepared for future disasters. About 19.5% of the clients have taken **measures** in order **to cope with potential disasters**. This is an indicator of resilience and capacity to prevent social and economic deterioration because of external shocks. The impact is minus 7.2%, which means that clients of Attadamoune have taken fewer measures than the control group.
- + When we focus on **female clients** and **clients with savings**, we see a high confidence in **coping with future disasters**: 10.4% and 17.8% respectively.
- + In general, microfinance has a positive impact on life and security measured in the total **Life and Security Index** (1.9%). This indicates that Attadamoune's clients are less vulnerable to disasters and uncertainties. Moreover, microfinance has improved their perceived resilience, as they feel confident to be able to cope or recover from a shock in the future.

Social and Political Participation

The indicators of participation measure the self-confidence and empowerment of respondents to participate in local government and social organizations. In our analysis we have taking into account different types of organizations such as political parties, community organizations and sport clubs. People can hold different positions in these organizations, or have different tasks and responsibilities. Therefore, we have distinguished three types of participation: general membership, influential position, and leadership position. Those different positions presuppose and improve self-confidence and empowerment at different levels; the Social and Political Participation Index is therefore a weighted index. That index is constructed as follows: membership weighs for 1/6, influential position for 2/6, and leadership position for 3/6.

Table 7 Social and political participation

Variable	Target Group (N=251)	Control Group (N=211)	Results
	<i>mean</i>		<i>IMPACT (%)</i>
% people holding a membership position	0.19	0.29	0.0
% people holding an influential position	0.01	0.02	0.0
% people holding a leadership position	0.04	0.04	-0.2
Social and Political Participation Index¹⁷	0.006	0.008	-0.1

* Significant at 10% level; ** Significant at 5% level; *** Significant at 1% level

¹⁷ In this index we weighted the 3 social and political participation indicators, membership receives 1/6, influential position 2/6, and leadership position 3/6 weight. The maximum score on the index is 1.

Findings

- Clients of Attadamoune are not politically or socially more active than respondents in the control group. Consequently, we did not find a significant impact. **Group membership** is measured with the help of an index¹⁸. 9 Different types of social and political organisation are included in this index. An index score of 0.19 means that on average, clients are member of 1.7 (0.19*9) different organization types like a sport club or a political party. The survey data shows that on average, the control group is member of more different types of organisations (2.6 types of organisations). No impact is observed regarding this outcome.
- The negative impact observed regarding **leadership positions** suggests that clients from Attadamoune are holding less leadership positions than the control group. However, this impact measured is small and not significant so can be caused by chance.
- Clients of Attadamoune are not politically or socially more active than respondents in the control group. On all three indicators no significant impact is observed. Accordingly, microfinance provided by Attadamoune has no impact on the **Social and Political Participation Index**.

Identity

In our Theory of Change we assume that microfinance is able to empower women. The included empowerment variables describe the involvement of women in the decision-making process with regard to household expenditures, family planning, and the use of contraceptives. Furthermore, empowerment transforms power relations and consequently increases the self-esteem of women.

Table 8 Identity

Variable	Target Group (N=251)	Control Group (N=211)	Results
	<i>Frequency (%)</i>		<i>IMPACT (%)</i>
% economic empowerment	72.1	72.5	-4.1
% empowerment family planning	82.9	87.7	-9.6**
% empowerment contraceptives	89.2	89.6	-4.4
% increase in self-esteem	67.1	62.7	3.9
Identity Index ¹⁹	0.78	0.78	-3.6

* Significant at 10% level; ** Significant at 5% level; *** Significant at 1% level

Findings

- Microfinance shows a negative impact (-9.6%) on **family planning**, and this impact is significant. Compared to the control group, women in the household of Attadamoune's clients are less able to discuss family planning.
- Empowerment regarding **household expenditures** and the **use of contraceptives** also show also a negative impact of minus 4.1% and minus 4.4% respectively. However, this impact is not significant. This means that women seem to be less involved in the decision-making process around household expenses and the usage of contraceptives. However, this outcome is not significant and due to chance.

¹⁸ The various social and political participation indices include 9 different types of organisation: religious organisation; community organisation; sport club; school organisation; women's organisation; political party; trade union; farmer organisation; other. The 3 indices measure for each respondent how many different types of organisation he or she holds a member position, influential position or leadership position respectively.

¹⁹ In this index all 4 identity indicators are included and equally weighted, so that each of them receives 1/4 weight. The maximum score on the index is 1.

- + A positive impact (3.9%) of microfinance was found on clients' **self-esteem**. About 67.1% of Attadamoune's clients are more **confident** than 3 years ago, however this impact is not significant.
- Identity indicators show mixed results. The indicators of **empowerment** all show a negative impact, while the indicator of **self-esteem** shows a positive impact. Based on the above findings the overall impact of microfinance on the **Identity Index** is negative (minus 3.6%).
- + By unravelling the dynamics among Attadamoune's clients, we found a positive impact of microfinance on the **empowerment regarding family planning** (9.7%) for clients with **savings** (see Table 10).
- Noticeable is the negative impact of microfinance (minus 6.1%) on the **empowerment of women** around **family planning**, and the negative impact (minus 7.7%) of **savings** on **empowerment around contraceptives** (see Table 10).

Impact Index

The Total Impact Index provides a general overview that reflects all different indicators, we have composed an Impact Index. All indicators of the five rights described above are included in this (non-weighted) index.

Table 9 Total Impact Index

Variable	Target Group (N=251)	Control Group (N=211)	Results
	<i>mean</i>		<i>IMPACT (%)</i>
Sustainable Livelihoods Index	0.70	0.64	6.0***
Essential Services Index	0.76	0.80	1.8
Life and Security Index	0.49	0.47	1.9
Social and Political Participation Index	0.006	0.008	-0.1
Identity Index	0.78	0.78	-3.6
Total Index	0.56	0.53	1.2

* Significant at 10% level; ** Significant at 5% level; *** Significant at 1% level

Findings

- + On average, the total impact of microfinance provided by Attadamoune on all **five dimensions of poverty** is 1.2%. However, this observed impact is not significant. We found a small positive impact on Sustainable Livelihoods, Life and Security as well as on Essential Services (Education and Health). By contrast, microfinance has a small negative impact on Social and Political Participation and Identity.
- + The overall impact on clients with savings is 5.4% and significant. This means that clients with savings show better outcomes than clients without savings.

Impact on clients disaggregated by Sex and Savings

In previous sections, we analyzed the differences in outcomes and impact between clients of Attadamoune and future clients. In the following section we change our focus. First, we focus on female clients and compare their outcomes in the target group with female future clients of the control group. Secondly, we focus our analysis on respondents from the target group, so only on clients of Attadamoune. We measure the impact of Attadamoune's clients with savings compared to clients without savings.

Table 10 shows both the impact of microfinance on women and clients with savings. When the outcome is positive for female clients, the impact of microfinance on women is higher than the impact on men. This argument also holds for the factor savings. When the table shows a positive impact for clients with savings, the impact on clients with savings is higher than the impact on clients without savings. Likewise, a negative impact on female clients or clients with savings indicates that respectively men or clients without savings experience a higher impact on that indicator.

Findings:

- + Both female clients and clients with savings show a big increase in perceived change in income, the significant impact is respectively 26.3% and 29.2%.
- + Clients with savings show higher assets ownership (6.7%) and better living standards (6.8%) compared to clients without savings.
- Children of clients with savings are less often enrolled in a formal school (minus 15.7%) and have higher dropout rates (minus 7.3%).
- + Female clients and clients with savings show also high impact on confidence to cope with future disasters; the impact is respectively 10.4% and 17.8%.
- Women and clients with savings also show lower empowerment rates around contraceptives, respectively minus 4.1% and minus 7.7%.
- + The total Index for savings shows a positive and significant impact (5.4%). So clients with savings perceived higher impact than clients without savings.

Table 10 Impact on clients disaggregated by sex and savings

Variable	Impact (%) - women	Impact (%) - savings
Sustainable livelihood	Target Group n=177 Control Group n=108	Target Group n=153 Control Group n=98
% people perceived an increase in income	26.3***	29.2***
no. meals per day	-3.1	11.6
% people reducing their food intake in past 3 months	-0.6	-1.8
Ownership of assets (Assets Index)	-0.5	6.7***
Living standards (Housing Index)	-1.4	6.8**
% people perceived an increase in savings	9.0	88.2***
Sustainable Livelihood Index	5.5**	21.6***
Essential Services		
% of children of school-going age enrolled at formal school	-0.9	-15.7**
% households with no school dropouts	10.7	-7.3
% people ill in last 3 months	-3.8	15.5***
% Children who died before the age of 5	4.9	-6.3
Essential Services Index	No calculations ²⁰	-17.7
Life and Security		
% people experienced damage to themselves or their belongings	0.6	0.3
% people taken measures to cope with future disasters	-9.6	-4.2
% people feeling confident to cope with future disasters	10.4**	17.8***
Life and Security Index	0.4	6.8*
Social and Political Participation		
% people holding a membership position	-0.2	0.5
% people holding a influential position	0.1	0.2*
% people holding a leadership position	-0.1	0.3
Social and Political Participation Index	0	0.3
Identity		
% economic empowerment	-1.6	3.7
% empowerment family planning	-6.1*	9.7*
% empowerment contraceptives	-4.1	-7.7*
% increase in self-esteem	1.8	4.1
Identity Index ²¹	-2.5	2.4
Total Index	1.1	5.4***

* Significant at 10% level; ** Significant at 5% level; *** Significant at 1% level

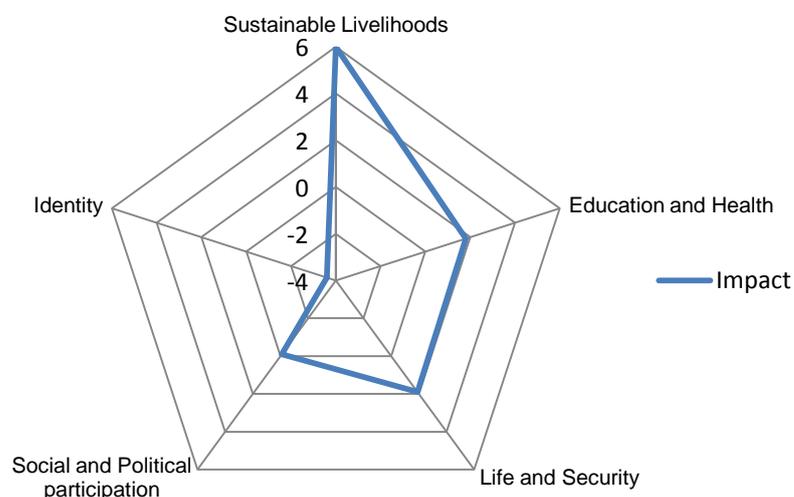
²⁰ In this exceptional case no matching respondents are found in STATA. For this reason it is impossible to calculate the impact. A reason for this might be that the indicators regarding education are only relevant for the households with children in the school age. This means that too much households are excluded from the list so that matching was not possible.

²¹ In this index all 4 identity indicators are included and equally weighted, so that each of them receives 1/4 weight. The maximum score on the index is 1.

CONCLUSIONS

This study investigated the impact of both financial and non-financial products supplied by Attadamoune. The data was collected through a quantitative survey. Subsequently, the impact was determined by means of a statistical assessment of the differences in outcomes on key impact indicators of Attadamoune's clients set against the outcomes on those same indicators that would have occurred had these people not received products and/or services from Attadamoune. A control group was composed as a proxy for what would have happened to the clients had they not received a loan (or other services) from Attadamoune. The total sample size included 496 randomly selected respondents: 246 were clients (including dropouts) of Attadamoune between August 2008 and August 2010 and 250 respondents made up the control group of future clients. The study was focused on the impact of receiving microfinance over 3 to 5 years on the quality of life of Attadamoune's clients. A number of questions were explicitly asked for quantifying any change over the last 12 months. The outcomes on these questions should be seen as the impact over 12 months in the context of obtaining a loan over 3 to 5 years.

Figure 6 Overview of measured impact (%) on the five impact domains



Based on the statistical analyses (Propensity Score Matching), we can conclude that the microfinance products provided by Attadamoune have the highest positive impact on the **livelihoods** (6%) of its clients (see figure 6). This impact was measured through the Sustainable livelihood Index which is an aggregated figure of six indicators. An important element of the sustainable livelihood index is the perceived change in income. The majority of Attadamoune's clients (about 61%) had perceived an **increase in income** and in **savings** (about 54%), when we used PSM we found an impact of 25.2% and 15.4% respectively. Noticeable is the high impact of microfinance on income increases as perceived by female clients (26.3%). These findings are in line with the Theory of Change, which assumes that access to the financial products and services provided by Attadamoune enables its clients to increase their business and/or productivity resulting in higher incomes. It is expected that an increase in income has positive effects on the social impact domains such as education and health, life and security, and social participation. Although the data did not prove significant impact on the social impact indices, we did find impact on the individual indicators that are part of these social impact domains.

An important finding is the positive and significant impact (12.2%) on the level of confidence in dealing with potential threats. Despite the outcome that Attadamoune's clients do not take more **measures** (impact is minus 7.2%) to cope with future disasters they still feel more **confident** about facing potential threats in the future. This might be an indirect effect of the improved livelihood situation. The increase in savings and income make people feel they are more resilient to threats. In particular, we see a significantly higher impact (17.8%) of microfinance on

the level of confidence of those Attadamoune clients with **savings**, compared to clients without savings. A mixed impact is found on the indicators related to the right to an identity. For example, the outcomes on women's empowerment around **family planning** are varied. On the one hand, clients of Attadamoune experience a negative impact (minus 9.6%) of microfinance on the decision-making power of women, while a positive impact is found on the empowerment of women in the households of male clients. Women's empowerment around the decisions on **economic expenditures** or **contraceptives** in the households of Attadamoune's clients is not significantly improved for clients of Attadamoune. Microfinance has only a positive impact (3.7%) on women's empowerment in **economic decision-making** for clients with **savings**. This means that having savings has a positive impact on women's empowerment, although the impact is not significant.

The impact of having savings in addition to a loan from Attadamoune is also moderately high on the **accumulation of assets** (6.7%). In addition, households with savings allocate more money to improve their **housing conditions**. This means that households with savings do not only save money but they also invest in assets and their housing (in kind savings). There is no significant impact found of savings on the **number of meals** consumed in a day. It may be that no impact was found because clients of Attadamoune are already food secure, as on average they consume 3.5 meals a day.

There is no clear finding for the impact of microfinance on the **essential services**; an index that consists of **education** and **health** variables. There is a negative impact of microfinance on the number of days that clients are seriously **ill**. On average, Attadamoune's clients were not able to work on 3 days in a period of 3 months. However, the impact on the number of **school dropouts** is positive. We were therefore unable to find a positive impact on essential services. The number of dropouts is low, which indicates that clients of Attadamoune are aware of the importance of education.

Finally, no clear relation was found between microfinance and **social participation**. This finding is in line with the lack of impact found on **self-confidence** and **economic empowerment**, which are assumed to support clients to step out and **participate in local government and social organisations**, garnering the respect of their communities. A possible explanation for the fact that no impact is observed may be the timeframe of this study. Perhaps, it takes more time before the impact of microfinance on community participation is established. Microfinance is expected to increase social and political participation through deepening and increasing social networks, which is a more long-term process.

Recommendations

- In this research a quantitative approach was used to measure the impact of microfinance. Future research could use a qualitative approach to get a better understanding of the dynamics underlying the quantitative outcomes and create a context for interpreting the results found in this study. For example, to analyze why we observed a lack of impact on social and political participation by doing in-depth interviews with clients. An in-depth interview gives more emphasis on a narrative about the various social networks in people's living environment, obstacles for participation, and future ambitions. This further research is useful to explain e.g. the higher illness among clients and the lower empowerment regarding contraceptives of females and clients with savings.
- To assess the impact of microfinance this study compared a target group with a control group. This control group was used as a proxy for what would have happened had there been no intervention. It consisted of future clients of Attadamoune. We advise to interview these same respondents again in 3 to 5 years from today, to compare the outcomes and measure impact. The data collected in this research can then be used as baseline data.
- Finally, it might be interesting to link the outcomes of this study with outcomes of earlier social performance studies and customer satisfaction surveys. Linking these types of data might provide interesting relations between outputs and impact.

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ANNEX 1 METHODOLOGY

Impact evaluation

This report presents the results of an impact evaluation. An impact evaluation is a method to understand whether an intervention actually worked. An impact evaluation assesses the difference in the values of key variables between the outcomes of “agents” (individuals, enterprises, households, populations, policy-makers, etc.) who have taken part in an intervention, against the values of those variables that would have occurred had there been no intervention²². Assessed are the intended and unintended effects, the negative and positive effects, and the long-term and short-term effects²³. An impact evaluation is needed to help policy-makers decide if interventions are generating the intended effects for the beneficiaries; to promote accountability in the allocation of resources across programs, projects and activities; and to fill gaps in understanding how measured changes in wellbeing can be attributed to a particular intervention.

Problem of the counterfactual

Impact evaluation studies can be conducted using quantitative methods (i.e. data collection) or qualitative methods (examples: in-depth interviews and focus group discussions) before (*ex ante*) or after (*ex post*) an intervention. The main challenge in different types of impact evaluations is to find a good counterfactual – i.e. the situation a particular subject would be in had he or she not been exposed to the intervention²⁴. A researcher must therefore determine what would have happened to the beneficiaries had the intervention not existed. Without information on the counterfactual, the next best alternative is to compare the outcomes of participating respondents with those of a comparison group that did not participate. In doing so, it is important to select a control group that is very similar to the beneficiary group; such that the beneficiaries would have had outcomes similar to those in the control group in the absence of inclusion in the intervention. To prevent a bias in the outcomes, the selected control group should (1) be identical to the beneficiary group, (2) respond to the intervention in a manner similar to the way the beneficiary group responded to the intervention, and (3) be exposed to the same set of external interventions as the beneficiary group²⁵. The sampling procedure applied in this study is described below in the section “Sampling”.

Quantitative approach

This study uses a quantitative *ex post* impact evaluation method. Quantitative research tries to find causal relations between different variables in the research environment²⁶. Baseline data was not available for this research and therefore *ex post* analysis was applied. Qualitative methods on their own cannot assess outcomes against relevant alternatives or counterfactual outcomes. Qualitative outcomes contain in-depth knowledge about the topic and are costly per respondent. That means that it is mostly difficult to generalize qualitative outcomes. Both of those arguments explain the reason that qualitative research cannot really indicate what might have happened in the absence of the intervention. The used method is *ex post*, measuring actual impact on the beneficiaries that can be attributed to the intervention. An important advantage of quantitative evaluations is that they have immediate benefits and reflect reality. However, these evaluations sometimes fail to spot the mechanism underlying the interventions’ impact, which can be very useful in understanding the effectiveness of interventions²⁷. For this reason, a mixture of qualitative and quantitative methods will result in the most reliable analysis.

²² We have used the definition of Hulme, 2000:8.

²³ Wainwright, 2002.

²⁴ Hulme, 2000; Karlan, 2001; Khandker *et al.*, 2010.

²⁵ Karlan, 2001; Lensink, forthcoming..

²⁶ Scrimshaw, 1990; Ellis, 2000.

²⁷ Khandker *et al.*, 2010.

Sampling

In order to obtain meaningful results, it is important to implement the sampling process properly. The sample should be adequate to warrant generalization of the findings on the target population (representativeness of the clientele) and should minimize this risk of outcome biases. It is therefore crucial to ensure that answers to the questions are given by a sufficient number of respondents (beneficiaries) and that there is no bias in the selection of respondents.

To assess the impact of microfinance over 3 to 5 years, we have defined “people who became a client of Attadamoune between August 2008 and August 2010” as our target population. The sampling procedure included four measures for putting together a valid sample and minimizing bias in the sample selection:

(1) A control group has been selected to overcome the problem of the counterfactual; **(2)** The characteristics of the people in the target group and the control group are identical. The control group consists of people who are registered as future clients at Attadamoune, who had recently passed the selection procedure for receiving a loan in the near future. By composing the control group in this way we prevent any selection bias towards more entrepreneurial people who want to make use of microfinance services. “Those (people) who participate in microfinance programs are more entrepreneurial in spirit, more resourceful in business, and hence more likely to overcome life’s problems one way or another²⁸”; **(3)** Respondents are selected using multistage and simple random sampling. The multistage sampling method divides the population in different groups, in this case regions. Twelve regions (Agourai, Timahdit, Meknes, Boufakrane, Azrou, Ain Taoujdate, El Hajeb, Fes, Kenitra, Rabat, Sale, and Temara Hay Nahda) were selected. Simple random sampling is used in these regions to select the respondents in the target and control groups, using a random number generator, so that each person in the selected regions had the same probability of being selected for the sample. The multistage sampling method was used to reduce costs of the survey and to shorten the time needed to collect the data. The target group sample was selected from a list of all clients receiving a loan between August 2008 and August 2010. The control group sample was selected from a list of all future clients likely to receive a loan in the future. A simple random sample minimizes outcome bias and simplifies an analysis of results; **(4)** Dropouts are included in the target group sample. The target group consists of all people who became a client of Attadamoune between August 2008 and August 2010. The target group therefore also includes dropouts. Dropouts are the people who became client between August 2008 and August 2010 but are no longer clients. By including dropouts, we control for the incomplete sample bias, since dropouts presumably were affected differently, and potentially worse, from those who remained clients²⁹. Moreover, including dropouts also checks for the likelihood that there will be also dropouts among the future clients.

Sample size

This study is based on a sample size of 503 respondents (N=503). In order to create maximum statistical power we selected the same number of respondents in the target group and control group: of the 502 respondents 251 participants were from the target group and 252 participants were from the control group. Power calculations were carried out on the most important indicators to verify the reliability of our outcomes. These calculations confirmed that our sample size was big enough to conclude that our impact results are reliable. Meaning that the outcomes of the used sample represent the outcomes of the real population (= all clients of Attadamoune).

Data collection

²⁸ Cited from Karlan , 2001:5.

²⁹ Karlan, 2001.

In order to assure the high quality and reliability of data we developed a questionnaire with primarily multiple choice questions. Multiple choice questions are objective, so variations in marking due to subjective factors are eliminated. An app is used to collect the data on a smart phone or tablet. Using an app is a cost-efficient way of processing data and contributes to more reliable information. Several quality checks are built into the app to lower the risk of making mistakes.

Ten local students conducted the interviews with help from the local loan officers. Appointing students as interviewers had the advantage that they could verify the answers with reference to the local context. Clients would therefore be more inclined to providing truthful information. However, there is always the risk that clients give socially desirable answers to gain a positive treatment from Attadamoune. To minimize this risk we hired a local consultant to do quality checks during the fieldwork. For example, the consultant checked if the questions were asked in a consistent way and if the answers were interpreted correctly.

The local consultant trained the interviewers how to do a good interview. During the extensive training all interviewers received tailor-made guidelines with explanatory notes for each question; regarding the interpretation of the response categories, tone of voice, and instructions on how to deal with potential sensitivities. The training and guidelines contributed to a homogeneous and reliable process of data collection.

Data analysis

Data cleaning

Before we started analyzing the data we did some quality checks by crosschecking different answers to verify if values were realistic when compared to other questions. In case of an unrealistic answer (e.g. the number of children who left school is higher than the total number of children in a household) we did not include the answer in our analyses. In addition, we aggregated some data to create more meaningful variables. We composed various indices as a quantitative indicator for a number of impact indicators. Most of the composed indices are non-weighted indices. We then simply summed up the scores on different indicators. This method has the virtue of simplicity, but also has the limitation of assigning equal weight to all indicators. For the indicator on social and political participation we used a weighted index. Membership, influential position, and leadership position requires different gradations of empowerment and self-confidence. So we contributed the highest weight to leadership position, followed by influential position and general membership. The statistical program STATA was used to make the calculations³⁰.

To assess the impact of microfinance, the control group should be absent in the microfinance intervention (loans). We therefore used future clients of Attadamoune as the control group (see section Sampling). However, after the first data analysis on financial characteristics we found that a few members of the control group made use of the financial services of MFIs other than Attadamoune. To make sure that this study measured the impact of microfinance, we excluded these respondents from our impact analyses. This reduced the size of the control group by 38 respondents.

Pearson's chi-square test and the t-test

The first step in our data analysis was to test to what extent the target group and control group were similar with regard to their general characteristics. We used the *chi-square test* and the *t-test* to see if they differed significantly.

³⁰ All significance tests provide results within a predefined confidence interval. Confidence levels commonly used are 90%, 95% and 99%, with most usual (at least in the field of economics) the 95%.

The chi-square test (X^2) is shorthand for Pearson's chi-square test. The Chi2 test was used to compare the observed and expected results on nominal variables (frequencies) and sees if a difference is due to chance, or more significant³¹. Alongside the chi-square test, we also used the t-test to compare the outcomes on interval and ratio variables. The t-test can be used to test different hypotheses. In our research we used the t-test to test whether two independent variables differed significantly from each other³².

Propensity Score Matching

Based on the *chi-square test* and the *t-test* we concluded that the control group differed from the target group regarding all general characteristics (see Table 2). To overcome this problem, we used the Propensity Score Matching (PSM) method. We used PSM to develop a counterfactual or control group that is as similar as possible to the target group in terms of *general (or observable)* characteristics. The idea is to find individuals in a large group of non-participants who are *observationally similar* to participants in terms of characteristics not affected by the program (they can include pre-program characteristics, because those clearly are not affected by subsequent program participation). Each participant is matched with an observationally similar nonparticipant. The average difference in outcomes across the two groups is then calculated to assess the participation effect of the program participation³³.

The average effect of the program is then calculated as the mean difference in outcomes across these two groups. There are several matching methods, including: Nearest Neighbour matching, Stratification method, Radius matching and Kernel matching. In our research we used Nearest Neighbour (NN) matching with replacement³⁴. NN matching matched each of the respondents in the target group to a respondent in the control group whose general characteristics (propensity score) match best with the respondent in the target group. With replacement means that a respondent of the control group can be used more than once, as far as it is the nearest neighbour of a respondent from the target group.

Limitations of this study

Although quantitative methods have several clear advantages, the method also has some limitations. Quantitative studies do not take into account the underlying motives of people. Furthermore, they can only deliver the outcomes formulated in the questionnaire. This limits the explanations and nuances participants want to make. Mixed methods are therefore a popular method in research. Qualitative methods can then be used to give meaning to the quantitative outcomes. Qualitative methods give the participant and the interviewer the opportunity to arrive at a better understanding of the reality they observe. Moreover, qualitative methods can be used to assess social relations and sensitive information.

Ethics

For Oxfam Novib research ethics are of the utmost importance. We emphasized that participation in the study was completely voluntary. Before each interview started, room was created to turn down participation. In order to allow people to turn down participation, a reserve sample list was composed for each region. Furthermore, all interviewers guaranteed anonymity and confidentiality. At the beginning of the interview it was explained that the research is for scientific purposes only. Finally, working with a control group raises ethical issues. As a

³¹ Fisher, 1922.

³² Field and Hole, 2003.

³³ PSM is a quite popular method among researchers since it is the next best thing to do is to try to mimic randomisation—that is, try to have an observational analogue of a randomized experiment.

³⁴ This study is based on Nearest Neighbour (NN) matching, NN matching is used for two reasons: i) the target group is bigger than the control group, so some propensity scores from the control group should be used twice to match all the respondents of the target group, ii) NN matching finds the propensity score that is the most closely related to the target group and therefore gives the most reliable outcomes (Khandker *et al.*, 2010).

solution, in this study the control group existed of future clients who were already selected to receive a loan in the future.

ANNEX 2 IMPACT INDICATORS

Right 1: Sustainable Livelihoods

This study did not use income data to measure the livelihood of households. Income data has limitations in both accuracy and measurement. For instance, for people living in informal labour markets income is often highly variable. Income can be seasonal, such as when earned from farming or tourism, or just variable and lumpy for small-business owners³⁵. Taking a snapshot of income at one point in time may therefore produce a less reliable picture of those types of workers than those who receive regular salaries. Furthermore, people may be engaged in barter and other non-monetary forms of trade. In all these cases there is a high potential for error in data based on the recollection and value of all sources of income. Instead of using income data, this study measured the impact on livelihoods with a range of indicators: perceived change in income; perceived change in savings; food security and food intake; assets ownership; and living standards.

The **perceived change in income** is used as a proxy for income, defined as the monetary income from various sources (work, interest, remittances, gifts, etc.) received in a particular period. This is measured by asking respondents if they had observed an increase, decrease or no change in their income over the past 12 months.

We composed an **Assets Index** as a quantitative indicator of households' ownership of assets as a proxy for wellbeing, as we did not have complete income or consumption data. The composed Assets Index is a non-weighted index in which the following household assets are included (radio; bicycle; bed frame with mattress; refrigerator; television; computer/laptop; mobile phone; fishing net; tri-cycle; motorcycle; donkey/bullock; tractor; car/pick-up truck; other items with a value over 4000 Moroccan dirham). This means that we simply sum up the number of assets owned, which is equivalent to setting asset = 1 for each asset. This method has the virtue of simplicity, but also has the limitation of assigning equal weight to the ownership of each asset. For example, this method would assign the same values to owning a radio and a computer, although in reality their contributions to the capital variable are surely different.

Living standard or quality of housing is also included to measure wellbeing. The quality of housing is measured with a Housing Index indicator that includes (1) access to safe drinking water; (2) electricity; (3) concrete floor; (4) flush toilet; (5) cooking fuel; and (6) solar lightning. Likewise the Assets Index, the Housing Index is a non-weighted index whereby we simply add up the number of assets owned with a maximum score of 6³⁶.

Food security refers to "a situation when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life"³⁷. Food security is measured using an "insufficient food intake", which means that the respondent or his or her household members cut the size of their meals or skip meals because there was not enough food over the last 12 months. A second variable related to food security is the **number of meals** consumed in a day. Although this variable does not show whether the quality of the food and the diet have changed, it is assumed that it is still a meaningful indicator of food security³⁸. The **perceived change in**

³⁵ Moser and Felton, 2007.

³⁶ These indicators are based on the multidimensional poverty index developed by Oxford Poverty & Human Development Initiative and the United Nations Development Programme Santos and Alkire, 2011.

³⁷ FAO, 1996, Rome Declaration on World Food Security and World Food Summit Plan of Action

³⁸ www.fanta.org

savings is also used to measure the impact of microfinance on the livelihoods of clients. This indicator is measured by asking respondents with savings if they had observed an increase, decrease or no change in their savings over the last 12 months. This indicator is included as it provides information to the extent to which people have had a surplus or shortage on their financial resources.

Right 2: Essential Services: education and health

Essential services are defined by two indicators; **education** and **health**. Based on the Basic Capabilities Index developed by Social Watch³⁹, Oxfam Novib used two sub-indicators to measure education; percentage of school-age children (girls and boys) **enrolled at school** and percentage of school-age children who started school and **dropped out** before reaching grade 3. The indicators used for health were the same as those used by Social Watch, i.e. percentage of **deliveries attended by skilled personnel**, and **mortality rate of children under 5 years of age**. However, we deleted the outcomes of the deliveries attended by skilled health personnel because these outcomes were unreliable. This study also included the number of days that people were so **ill** over the last three months, they were unable to work.

Right 3: Life and Security

The degree to which people fall victim to serious physical damage and perceive a threat to their physical integrity and/or personal belongings is a good indicator of their **vulnerability**. In this study we have defined 5 threats that may have caused a negative impact or physical damage to the respondent or household members: banditry, state action, civil unrest or armed conflict, natural disaster, discrimination.

Being prepared for emergencies (taking any measures to cope with potential disasters in the future) is an indicator of **resilience** and the capacity to prevent external shocks from causing social and economic deterioration.

Coping capacity is measured as the level of confidence people have in their ability to cope with potential future threats (banditry, state action, civil unrest or armed conflict, natural disaster, discrimination).

Right 4: Social and Political Participation

Social organizations are a key player in the field of government, private sector, and civil society, especially in ensuring respect of people's rights. Civil society organizations are important in ensuring respect for the rights of marginalized people. Furthermore, important indicators of empowerment are participation in organizations and decision-making power. Another important indicator for measuring decision-making power is leadership positions held by project respondents. The empowerment and participation dimension thus intends to measure the degree of social and political empowerment.

We used several types of organizations common in the societies. We weighed all the different organizations equally, because we think that membership in itself is the most important indicator of participation.

Right 5: Identity

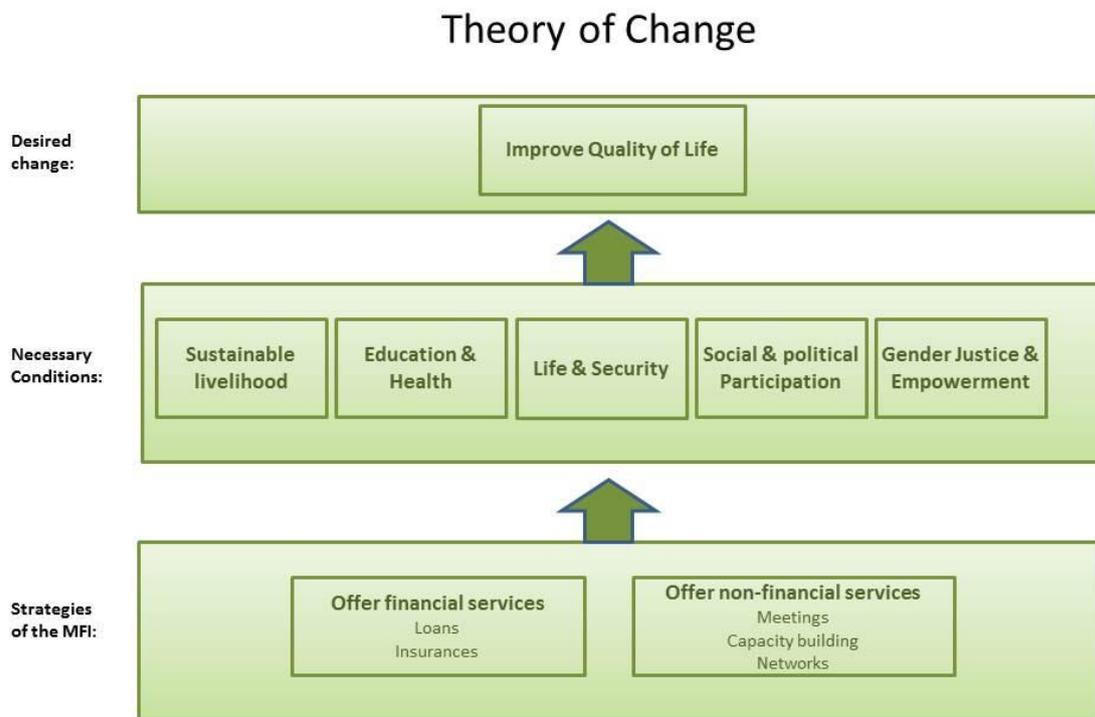
The identity indicators measure to what extent women were involved in the decision-making process. In more traditional communities, where men often head the household, the decision-making process is carried out by the men only. We believe that decision-making should not be the exclusive preserve of men, but that women should also be involved. We therefore give high

³⁹ For more details about social watch and the construction of the BCI see <http://www.socialwatch.org/>

scores to households where women are involved in the decision-making process, and give low scores to households where only men have decision-making power.

We examined these outcomes on three different topics: household spending, family planning, and contraceptives. **Household expenditure** is about how the household's income is spent on different products and services. Men and women have different views on household spending, so the design of the decision-making process influences the kind of products and services that are bought. The second indicator is empowerment in family planning. **Family planning** depends on cultural values and personal ideas. The extent to which women are involved in the decision-making process determines how their personal ideas are included in the decision taken. In more traditional societies decisions are made by men, the head of the household. We consider it important that women are also involved in the decision-making process. The third indicator is about the use of **contraceptives**. This indicator also depends on cultural values and personal ideas. Contraceptives can even be more culturally charged than family planning and therefore this indicator shows the degree of empowerment. Besides the empowerment, we also assessed if the **self-esteem** of the respondents has changed over the last three years. This indicator declares whether the respondent feels less, equally, or more confident than three years ago. We use this indicator because we suppose that the empowerment of clients make them more confident.

ANNEX 3 THEORY OF CHANGE



ANNEX 4 GENERAL CHARACTERISTICS

Figure 7.1 Marital status (Chi2(3) = 17.1***)

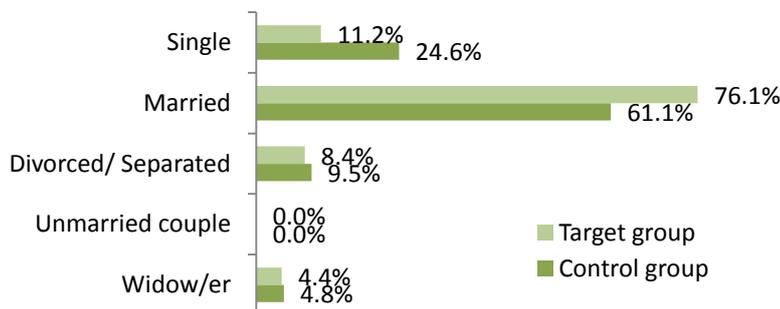


Figure 7.2 Occupation

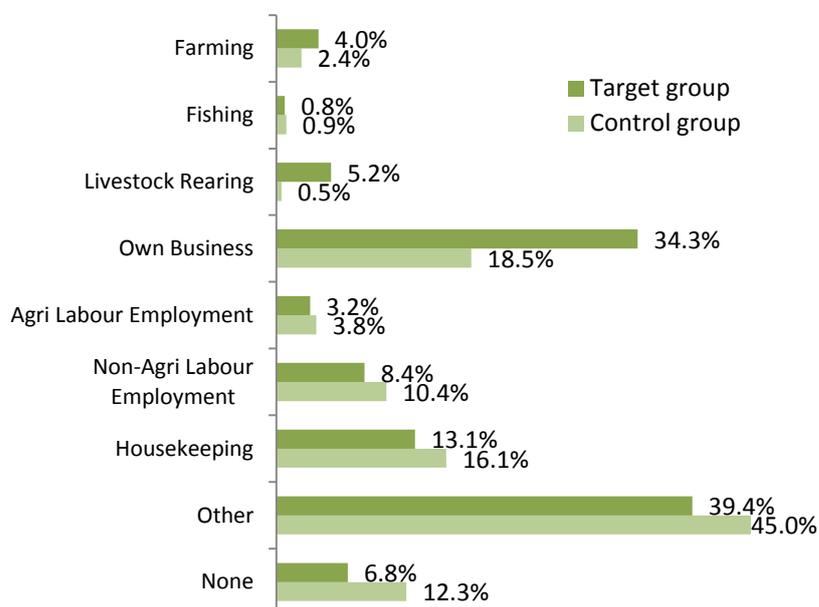


Figure 7.4 Investment areas of the obtained loans

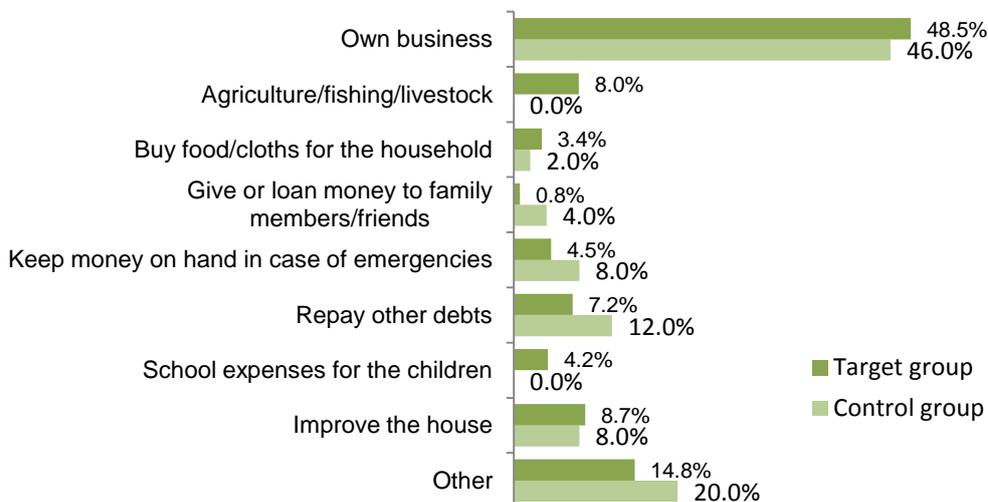


Table 11.1 Household size

	mean	SD ⁴⁰	min	max
Target group	4.8	1.9	1	14
Control group	4.8	2.2	0	13

Table 11.1 shows that both the Target and the Control group have an average household size of 4.8 members.

Table 11.2 Household dependency ratio

	mean	SD	min	max
Target group	0.41	0.015	0	1
Control group	0.42	0.017	0	1

The dependency ratios of the target and control group are almost the same. The dependency ratio of the target group is 0.41, which means that on average about 60% of all household members has no source of income and depends on the income generated by the other 40% of the household members.

⁴⁰ SD is the standard deviation which measures how much variation or dispersion from the average exists. A low SD indicates that the data tend to be very close to the mean; a high SD indicates that the data are spread out over a large range of values.

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ABOUT THE REPORT

This report is the result of a joint impact evaluation project initiated by **Oxfam Novib** and **Triple Jump**. This impact report is written to contribute to increased transparency on effectiveness, to support accountability, and to invite feedback on impact measurement. They do not necessarily reflect Oxfam's or Triple Jumps' policy positions. The views expressed are those of the author and not necessarily those of Oxfam and Triple Jump.

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