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**Financial Inclusion for Women:
Impact Evaluation on Islamic Microfinance to
Women's Empowerment in Indonesia**

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Women's Empowerment in Indonesia*

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CHAPTER 1.

INTRODUCTION

1.1 Background and rationale of the study

Indonesia's poverty rate had returned to a level similar to what it was before the financial crisis of 1997–1998 (In 1996, the poverty rate was 17.47 percent, and climbed to 24.23 percent in 1999). It did not slip any further because economic growth has been slow. The higher rates of poverty continued for a period after the financial crisis (from 2000 to 2007). By 2005, the poverty rate had reduced to 15.97 percent, but in 2006 there was a change for the worse when the poverty rate jumped to 17.75 percent (Yaumidin 2010). Various ways and financial resources had been deployed to accelerate the elimination of poverty in Indonesia. As a result, the number of poor started to decline significantly, but inequality gradually increased in the region with the abundant natural resources (Yaumidin 2013). Thus, Indonesia's government continues its efforts to reduce the gap by increasing inter-regional connectivity, infrastructure development, and human resource development through various programs.

Transformation in the pattern of poverty alleviation program had begun by implementing conditional or unconditional cash transfers. These kinds of program have been tested to further empower the poor and vulnerable groups to prevent from living below the poverty line. But, the results are only insignificant to reduce the number of poor. Consequently, Indonesia could not attain the first goal of the Millennium Development Goals (MDGs) of reducing to half the poverty rate by 2015.

As a country with majority of Muslim population, Indonesia also leverages the potential of the Islamic finance system. Development of Islamic financial system is inextricably associated to the interest of the state and development agencies to reduce poverty and improve various parameters of welfare for more balanced economic growth. Transformation also occurs in the utilization of *Zakah*, *sadaqah*, and *infaq* once given as a form of charity to the needy Muslims. Other economic measures also include productive ways to help small and medium enterprises, such as the provision of microfinance for the poor. This initiative heavily involves Islamic finance in advancing the social condition, reaching the unbankable (i.e., financial inclusion) sector of society.

To illustrate the potential of *zakah* in 2009, the total amount possible to be collected for the *Zakah* fund was Rp 111,064 billion. According to BAZNAS, which quoted an Asian Development Bank (ADB) research finding, the potential for *Zakah* should reach Rp 100,000 billion. In reality, BAZNAS collected Rp 1.200 billion for the *Zakah* fund in the same period, or only 1.08 percent of the potential (Yaumidin 2011).¹

¹*Zakat* collection can be direct or indirect. Direct collection is where *muzaki* (one who is obliged to pay *zakat*) come to an operational unit of BAZNAS or LAZNAS, whereas indirect collection is where The *muzaki* pay their *zakat* at a post office, by bank transfer, or salary deduction. Although, the

Empirically, operational unit of BAZNAS (Badan Amil Zakah Nasional) and LAZNAS (Lembaga Amil Zakah Nasional) as institutions for *zakah* management have implemented these ideas specifically to empower women. According to Mannan (2000) *Zakah* revenue can be spent for raising the productivity of the poor. This includes financing various development projects in education, health care, safe water, and other social welfare activities that are designed exclusively for the benefit of the poor. It is expected that such programs can have a multiplier effect for the welfare of the poor. However, it is intuitively plausible that an increase in income from *Zakah* investment might be expected to have a multiplier effect larger than an increase in income from non-*Zakah* funds investment. In addition, the income of the rich is obligated by taxes. Taxes form part of the government's revenue utilized for government spending. However, government spending is vulnerable to corruption. Hence, the richer Muslim is better with paying *Zakah* rather than taxes. Indonesia's fiscal policy provides for tax relief when one pays *Zakah*. Many economists agree that alleviating poverty to any great extent in Indonesia using *Zakah* funds is limited. Recently, the distribution of *Zakah* for economically productive programs has been sporadic, inconsistent, subjective, and without coordination and comprehensive planning between *Zakah* institutions and local governments.

However, women's empowerment is not easy to define because different people have different level of understanding about the issues. The concept of women's empowerment is influenced by the gender system in countries. For Indonesia, Islamic lesson mixed by secularism somehow makes women disempowered, while the rules of classical Islamic law can secure a woman to be financially better off (Landes 2013; Wee and Shaheed 2008).

At national level, women in poverty or a person categorized as *mustahik* (51%) is a little bit higher than men poverty (49%) (Purwakananta and Abilawa 2010). Therefore, it was argued that *zakah* from government institution (BAZNAS) operates in all provinces. Private institutions (LAZNAS) widely operates in Java, utilizing *zakah* fund to empower women through microcredit. Such improves the position of women being more equal to men in the household.

Therefore, the purpose of this study is to empirically examine the impact of Islamic microfinance on women's empowerment. To gain a comprehensive understanding of the concept of empowerment of women in Islam, this research also delves deeper into what is known by the group of Muslim women in Islamic women's empowerment. Focus group discussion was conducted among the target respondents divided into two different groups stratified by economic strata, and level of education. Having a clear understanding of the term of empowerment, further studies looked into the following: (i) impact of granting credit from *Zakah* fund, *infaq*, and alms resources to access independent income; (ii) control over savings and credit use; and (iii) ability to bring productive asset to household economy.

This study was undertaken in the city of Bandung. Using stratified random sampling, 200 Muslim women of the Misykat microfinance program in DPU Daarut Tauhid and BAZNAS in Bandung served as respondents. Primary data were gathered from June to December

zakat law has led to an increase in *zakat* institutions, it has been challenging to improve coordination, consultation and information dissemination among institutions.

2014. Using propensity score matching and instrumental variable methods convinced the researchers to address the selection bias in a cross-sectional setting. Based on the methodology adopted from Asim (2008), more reliable estimates of treatment effects within the constraints imposed by the data were provided. The proposed methodology is both resource efficient and cost effective, as well as easy to replicate. Some questions were modified in order to capture Indonesian Muslim women's characteristic.

1.2 Research statement

This research examined a number of Muslim women to determine what impact of Islamic microfinance in empowering them. Islamic finance offers a comprehensive approach to the poor's access to finance through redistributive instruments such as *zakah*, *sadaqat*, *waqf* and *qard-al-hasan*. Islam has high regard for women by protecting them from slavery and sexual harassment in the work place. Islam permits women to work for their self-actualization, with no obligation to fully assume the household expenses. Thus, in majority of the Muslim countries, women's participation in the work is less than non-Muslim countries. However, Muslim women in Indonesia are currently gaining interest and involvement in microfinance aiming to make their lives better. This study aimed to answer the following questions regarding the impact of Islamic microfinance to influence the Muslim women's participation in the economy as well as in household decision making.

1. How does Muslim women perceive women empowerment through microfinance?
2. What are the impacts of Islamic microfinance to the Muslim women's ability to: (i) access independent income; (ii) control the use of savings and credit; and (iii) bring productive asset in their household?
3. What is the difference in the performance of Islamic microfinance between the government and the private to Muslim to influence women's empowerment?

1.3 Objectives

Women empowerment is a potential to poverty alleviation. A number of women believed that they may become economic drivers in their families as well as the nation. Some studies found that microfinance (microcredit) in Indonesia, to some extent, lead to women empowerment. However, women's other responsibilities as to do their reproductive roles, production, and social functions may be hampered. Islamic teachings on Indonesia's Muslim women are more of household responsibilities rather than involvement in production work which are more for men. With the limited study on the influence of Islamic microfinance to empower Muslim women in Indonesia, this study aimed to:

1. Determine the extent of Muslim women's understanding of women empowerment and Islamic microfinance.
2. Measure the impact of Islamic microfinance toward the ability of women to: (i) access independent income; control the use of savings and credit; and (iii) bring productive asset to the household.

3. Compare the performance of Islamic microfinance between government and private to influence women's empowerment.

CHAPTER 2.

LITERATURE REVIEW

2.1 *Islamic views on poverty*

Islam does not have a fixed “poverty” definition that applies to all. The concept of poverty in Islam is broader and covers more than just food and services. However, Islam has a key principle in achieving its ideal redistributive justice on the support and empowerment of the weak. This can be achieved most significantly through the financial empowerment of family units in the lowest class in society.

Moreover, the numerous studies on the link between financial and economic development showed no relation to poverty in the country (Mohieldin et al. 2011). Meanwhile, Small and Medium Enterprises (SMEs) are believed to be agents of economic development in most emerging market. However, development of SMEs faces many constraints—the lack of access to credit, inadequate collateral, insufficient legal status, high transaction costs—are among the reasons why such enterprises experience exclusion from the formal financial system. It is the reason why such SMEs have less participation in development programs (Obaidullah and Latiff 2007). Therefore, there is a need to enhance the access to and the quality of basic financial services such as availability of credit, mobilization of savings, insurance and risk management which can facilitate sustainable growth and productivity, for SMEs. In the global context, building financial inclusion systems, through microfinance programs to combat poverty in developing countries is an important agenda for implementation.

Currently, WBG (World Bank Group) financial access reported that almost 60 percent of adult populations in emerging market still have no access to basic financial services, and a great part of them come from countries with predominantly Muslim population (World Bank 2012). Meanwhile, Islam puts equal emphasis on spiritual and on worldly affairs (Chapra 1980). Social justice, inclusion and sharing of resources between the haves and the have not are essential of economic development in Islamic economics system. Islam recognizes claims based on equality of liberty and opportunity, which are reflected in the degree of access to resources, the degree and extent of the ability of persons to actualize their potential liberty and opportunity, and the right of prior ownership. The right that the less have in the wealth of those who have greater ability and opportunity to produce greater wealth is redeemed through the various levies (*Zakah*, *khums*, *sadaqat*, *nafaqa*, and so on), the payment of which is not beneficence but a contractual obligation that must be met. *Zakah* for instance, is one of the fundamentals of the social transfer payment in Islamic lesson that has direct economic implications.² *Zakah* requires Muslims to distribute a part of their wealth to alleviate poverty and achieve economic emancipation for the poor (Ahmed 2004). However, as Ahmad (2000) states, the *Zakah* contributions by Muslims are neither

² *Zakah* is defined as ‘a determined portion taken from wealth and allocated to those deserving it, by a *Qur’anic* injunction’.

part of the state's public revenues nor part of the sovereign revenue from taxes in the state budget.

2.2 Islamic views on women empowerment

WEMC (Women's Empowerment in Muslim Contexts) mentioned that definition of women's empowerment should entail some analysis on power dynamics. In general, it has been defined as an increase ability to question, challenge and eventually transform unfavorable gender power relations, often legitimized in the name of 'culture' (Wee and Shaheed 2008). Moreover, this study has focused on the Muslim context in the view of women empowerment. This study found that the imposition of the Islamists' monolithic vision promotes: i) a misconception that the aspiration and struggle for women's rights are aliens to Muslim contexts; and ii) a cultural impoverishment that deprives women of alternative reference points for exercising agency and autonomy. Thus, this condition caused disempowerment of women in different levels: i) Macro level— national politico-religious groups, often allied with groups in other countries or with international networks, may seek to reshape laws and policies to conform with gender-inequitable notions; 2) Meso level— local politico-religious groups may also seek to do the same with local laws and policies, often in alliance with national and international groups and networks. In addition, patriarchal kinship based groups may seek to perpetuate disempowering values and practices, in convergence with the politico-religious groups; and 3) Micro level—individuals may assert disempowering values and practices in interpersonal relationships to a greater degree, often encouraged by trends at meso and macro levels.

2.3 Microfinance and women empowerment

Current thinking on microfinance has broadened its definition from microcredit to provision of an array of financial services, such as, savings, insurance, and remittance. It emphasizes that access to microfinance and not cost of microfinance should be under focus in designing and implementing a poverty alleviation strategy. The strategy should aim at sustainability through a shift from a charity based donor-dependent approach to a market-based for-profits approach emphasizing systemic efficiency and transparency and restricting use of donor funds to capacity building. It also underscores inclusiveness and integration of microfinance with the formal financial system. While there is a consensus among thinkers and practitioners. The same does not imply or advocate a single and uniform approach to microfinance. Arguably, diverse channels are needed to get diverse financial services into the hands of a diverse range of people who are currently excluded. In the context of Muslim societies, building inclusive financial systems would most certainly require integration of microfinance with Islamic finance (Obaidullah and Latiff 2007).

The form of microfinance in Islamic finance is not limited to the form of rural or small banks. Current consensus among Islamic economist through the last conference conducted by the Central Bank of Indonesia in Bali 2013, features a microfinance for the poor that utilizes Islamic levies as source of funds rather than collections from third party. However, the

product of financing used in microfinance may be the same as product financing from Islamic banks. It is because many elements of microfinance are consistent with the broader goals of Islamic finance. Both advocate entrepreneurship and risk sharing and believe that the poor should take part in such activities; focus on developmental and social goals; and advocate financial inclusion, entrepreneurship, and risk-sharing through partnership finance (Obaidullah and Latiff 2007). However, most favorite product is based on *mudaraba*, *murabaha*, *qard-al hasan*, *musharakah*, *bay-al salam*, and *ijarah* financing (Kaleem 2008; Kholis 2008)

In the case of empowering the poor, a number of studies concluded that microfinance are related to women's empowerment (Asim. 2008). However, defining women's empowerment is debatable since the term of 'empowerment' is related to the gender system of a country (Wee and Shaheed 2008). A gender system refers to constructing and regulating specific standards for males and females, as well as relations between them, in terms of relative hierarchy or relative equality. Intersecting with other forms of power relations, diverse gender systems produce varied spaces for women's initiatives and empowerment, accompanied by distinctive constraints, diverse sources of support, and dissimilar access to a range of resources.

Then, empowering women becomes an important agenda for developing countries towards economic development. However such of empowerment terms should be defined clearly and apt to with ideology, culture, and norm of society. As discussed above, financial inclusion should involve women participation, so that developing microfinance is the one way to empowering women. There were numerous studies to estimate and predict the impact of microfinance to improve women position in the household as well as in societies (Table 1).

Table 1. Previous study on the impact of microfinance to women's empowerment.

Title	Author	Year	Finding
Evaluating The Impact Of Microcredit On Women's Empowerment In Pakistan	Salman Asim	October 2008	No difference between the levels of empowerment of treated and control units. Participation in the microcredit program is found to be insignificant in explaining all the outcome indicators of empowerment for the sample households.
Female Empowerment: Impact of a Commitment Savings Product in the Philippines	Nava Ashraf, Dean Karlan, Wesley Yin	March 2008	Positive impacts, particularly for women who have below median decision making power in the baseline, and this leads to a shift towards female-oriented durables goods purchased in the household.
The impact of Group-Based Credit Programs on Poor Households in Bangladesh: Does the Gender of Participants Matter?	Mark M. Pitt, Shahidur R. Khandker	October 1998	Program credit has a larger effect on the behavior of poor household in Bangladesh when the women are the program participants. Women borrower had annual household consumption

			expenditure increase higher than men borrower.
Women's Empowerment Through Microcredit: A Case Study Of District Gujarat, Pakistan	Sarfraz Khan, MirzaRizwanSajid, Hafeez-ur-Rehman	September 2011	Positive impact of microcredit program introduced by PRSP in the rural Gujrat on women's empowerment.
Effect of Microfinance Operations on Poor Rural Households and the Status of Women	Asian Development Bank	September 2007	Project design can be improved further by including more gender disaggregated targets and indicators in the project framework, and by providing explicit discussion of the participation of women in the design and implementation process.
Pact's Women's Empowerment Program In Nepal A Savings And Literacy Led Alternative To Financial Institution Building	Jeffrey Ashe Lisa Parrot	October 2001	Economic aspects of the program are for women, at fifth stage (microfinance plus saving and access to loans) in the development of their groups the empowerment variables ranked much higher.

Sources: Various studies.

The successful performance of microfinance institution is largely associated with the utilization and the function of social networks of poor clients including the existence of trust (Chavez and Vega 1996; Robinson 2002; Martowijoyo 2007; Sanrego and Antonio 2013) Islamic microfinance is another institutional innovation being designed to have soundness of lending technology (based on Islamic teachings) of group lending model (GLM) that could ascertain the poor to have an access to the financial services (Sanrego and Antonio 2013) The Indonesian Grameen Bank model has been replicated and modified in many Islamic microfinance. Most of the Islamic microfinance has been designed like a cooperative model. Such program in the cooperative organization has certain characteristic as community-based empowerment, microfinance services, participatory or group based lending and addressed particularly for women of the poor or low incomes families.

Finally, we conclude that the literature reviewed suffices to provide theoretical foundations for empirical testing the link between microcredit and women's empowerment as illustrated in Figure 1. According to Asim (2008), microcredit is expected to improve the position of women within the household through: i) empowerment brought about by increases in independent income; ii) empowerment through "control" over savings and credit decisions; and iii) increased worth of women within the family, stemming from their ability to bring a 'valuable' asset to the household economy. The focus on any one of these mechanisms alone will fail to provide a complete perspective on women's empowerment. For any empirical study that aims to evaluate the empowerment potential of credit, it is necessary to look at the 'outcomes' associated with the empowerment effect rather than looking only at the 'processes' through which those empowerment effects were generated.

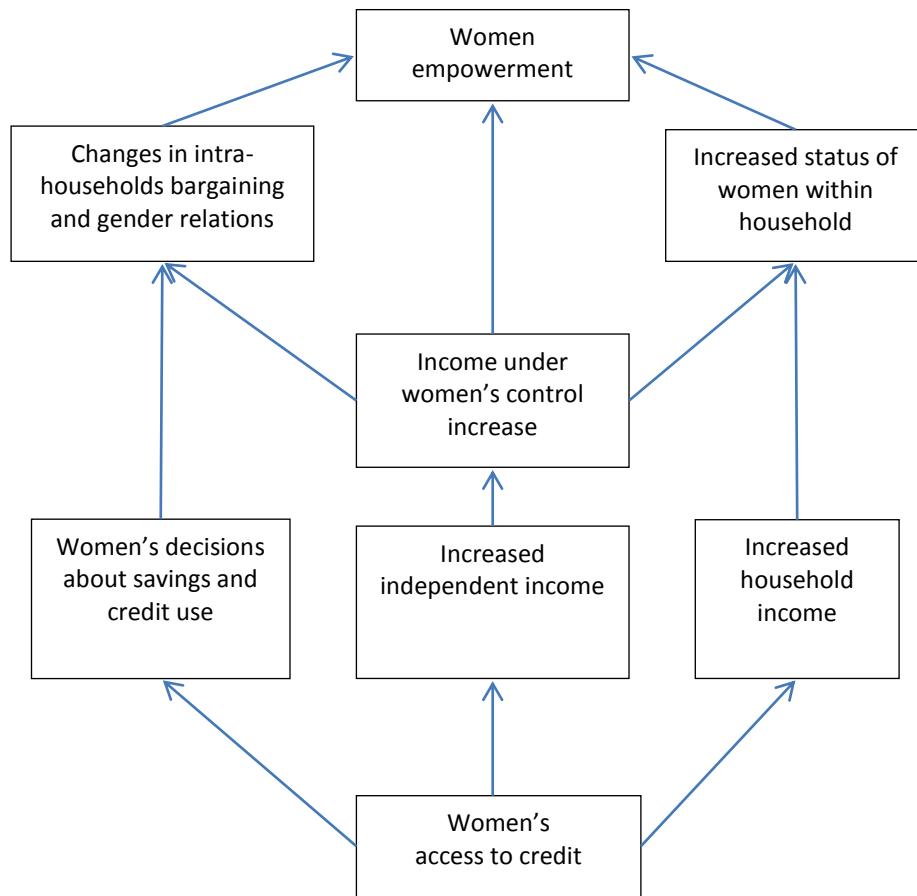


Figure 1. Framework of women's empowerment through microcredit.

Source: Asim, 2008.

CHAPTER 3.

METHODOLOGY

3.1 Methodological framework

The research design was set up to carry out a quasi-experimental framework. Prospective or new client was used as a comparison or control group. The mature client (i.e., old participants whether active or inactive) was compared with the control group to ascertain impact of credit. The questionnaire design was based on women's empowerment outlined in the conceptual framework.

Before the conduct of the experimental survey, "women empowerment" was drawn back from the exploratory evidence obtained from the FGDs and subsequent in-depth interviews. The FGDs were conducted in two groups classified according to the level of education and economic strata. As to the level of education, the MFI (Microfinance Institutions) respondents were classified as: (i) lower-medium education (elementary to junior high school; did not graduate); and (ii) medium-higher education (graduate from senior high school to higher level). As to the economic condition, the respondents were classified as: (i) one group who used MFI credit for consumption and had no business; and (ii) another other group who used their loan as working capital for a business.

The FGDs employed a participatory method to know how MFI management Board perceived women empowerment. In addition, the investigation has been interested the researchers to understand how they managed their institutions.

3.2 Sample design and selection procedure

Primary data was collected from 240 households in the south Bandung district. The target population comprised all women registered with the Misykat program Dompot Peduli Umat Daarut Tauhid (DPU DT) – Bandung, and Badan Amil Zakah Nasional (BAZNAS) - West Java Province in the area of Bandung City.

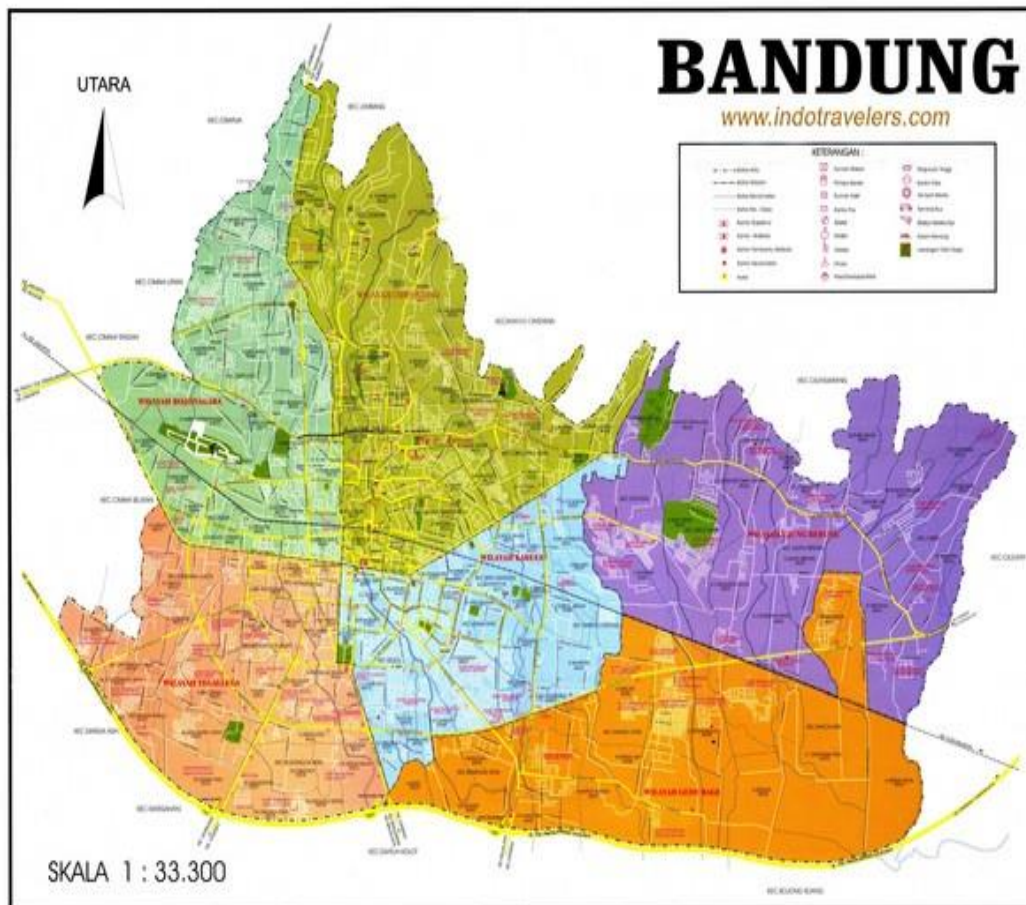
A stratified random sample of 240 households was drawn from the population of 2,000 female clients, with approximately 1,000 DPU DT and 800 BAZNAS clients. The sample of 240 clients with 192 clients of DPU DT and 84 BAZNAS clients represented the proportion of DPU DT and BAZNAS clients in the population. The sample was further divided into two groups.

1. The treatment groups were the "mature clients" who at least had completed one loan cycle with the MFI.
2. The control groups were the "prospective clients" who had been: (i) registered with the MFI during the data collection months of around May and June 2014; and/or (ii) received a loan for once a year as charity (with no loan repayment).
The reason why the "prospective client" was preferred over the non-clients as the control group was because there may be initial differences between clients and

non-clients such as household income, entrepreneurial ability, and degree of female empowerment.

For about every two people in the treatment group, there was one person in the control group— 144-treatment groups and 96 control groups in total. We assume that treatment and control groups come from similar types of communities and have similar characteristic particularly in economic background and status.

Figure 2. Area of study.



Sources: www.indotravelers.com

3.3 Questionnaire

The questionnaire was designed to answer the underlying research objective of how Islamic microfinance impact on the indicators of women empowerment. It is designed to follow Asim (2008) with modification on the indicators of women empowerment, within the Indonesian context. The questionnaire was designed to be generate qualitative information to reinforce the validity of research findings.

The questionnaire includes variables which indicate women empowerment based on theoretical views (i.e, concerning children, social mobility, and economic empowerment). The questionnaire consists of the following sections:

- A. Household (HH) information (Adult);
- B. Household information (Children);
- C. Household information (Labor);
- D. Credit profile of household;
- E. Income/Expenditure/Saving/Debt/Asset profile of HH;
- F. Female enterprise; and
- G. Attitude towards female enterprise /empowerment.

3.4 Method of data analysis

This study estimates the conditional demands for empowerment indicators *conditioned* on the individual's participation in the credit program using the equation below:

$$C_i = \alpha_c X_i + \pi Z_i + \varepsilon_i$$

$$Y_i = \alpha_y X_i + \delta_y Z_i + \mu_i$$

Where C_i is the binary treatment measuring participation in the program, X_i is a vector of household and borrower's characteristics (age, education, children, etc.), Y_i is the conditional demand for women's empowerment outcomes (such as level of involvement in the decision making or ability to make decisions without someone's permission), Z_i is the set of exogenous instruments distinct from X 's that affect C_i but not household behavior Y_i conditional on C_i , α_c , π , α_y and δ_y are the parameters to be estimated and ε_i and μ_i are errors representing unmeasured household level characteristics that determine participation in the program and outcomes respectively. ' δ_y ' is the parameter of interest that measures the impact of participation in the program on the outcome. The estimation problem arises because of the possible correlation between ε_i and μ_i due to the endogeneity of treatment. In the absence of exogenous instrument vector Z_i , strong assumptions are required to address concerns regarding endogeneity.

To measure and quantify the outcome variable Y , we quantify how decisions in the household are arrived. We allow our respondent to rank, in an ordinal manner, the extent to which her preferences are taken into account in intra-household decisions. In the context of the urban women of Bandung city area, there are certain structural equalities and prescribed social norms that reinforce the subservient position of women within the household. With this condition, it is expected that access to credit will help women in contesting those prescribed gender rules. It can be measured by changes in the degree of female participation brought about by credit decision concerning household and women's welfare. We use ordered probit framework to capture these ordinal preferences in our estimation strategy such as follows:

a. Regression methods

To estimate and test hypothesis 1, the class of probit and bivariate probit models were used. The endogeneity of treatment in the specification necessitates the following assumption:

Assumption 1: Ignorability treatment

Conditional on observed individual characteristic X_i , outcomes (Y^0, Y^1) are independent of the treatment T . This assumption implies conditional mean independence of outcomes:

$$[E(Y^0|X, T) = E(Y^0|X)] \text{ and } [E(Y^1|X, T) = E(Y^1|X)]$$

Assumption 2: Stable unit treatment value assumption

Estimation strategy imposes a linear relationship for conditional mean independence—

$$E(Y^0|X) = \mu_0 + \beta_0 (X - \bar{X})$$

$$E(Y^1|X) = \mu_1 + \beta_1 (X - \bar{X})$$

Where X is the vector of covariates with the average value \bar{X} in the treated population.

In this generic heterogeneous treatment effects model, both the parameters of slope (β_0, β_1) and intercept term (μ_0, μ_1) to vary across the outcome regimes were allowed. This switching regression model can be reduced to a single equation giving the expected empowerment outcome Y conditional on X, T :

$$E(Y|X, T) = \mu_0 + \alpha T + \beta X + T(X - \bar{X}) \delta$$

Where $Y = (1-T)Y^0 + TY^1$ is the observed outcome (equal to Y^1 for participants in the treatment group and Y^0 for participants in the control group).

b. Propensity score matching

Propensity score matching ensures the conditional probability of participation in the program uniformed between participants and matched comparators. Whereas, in a randomized trial the participants and non-participants are identical in terms of the distribution of all the characteristic, whether observed or not. Using a pooled sample of control and treatment groups, a flexible probit model by regressing treatment T_i on covariates Z_i and functions of covariates were estimated. The estimated parameters from this regression are used to predict $P(Z_i)$ the propensity score for treatment assignment.

$$P(Z_i) = F(Z_i; \hat{\beta})$$

Where $\hat{\beta}$ is obtained from a probit regression of T_i on Z_i .

Propensity score matching uses the values of $P(Z_i)$ to select matching comparison units. The estimates of the program impact are highly sensitive to the choice of matching method used to construct comparison group (Smith and Todd 2001). However, Smith and Todd (2001) demonstrated that the robustness of estimators can be enhanced by restricting the matches only to those units in the control and treatment group who have a common support in the distribution of propensity scores. All the cases in the control and treatment group that lie outside the common support condition were eliminated. The robustness of the estimates by using both kernel and radius matching methods were checked.

3.5 Hypotheses

Hypothesis 1: Preference-based indicators of empowerment

There were five different dimensions of empowerment: (i) children related decisions; (ii) health decisions; (iii) economic decisions; (iv) social mobility decisions; and (v) major household purchases. This hypothesis empirically tested the immediate changes in gender relation brought about by participation in a microcredit program. If the position of the women within the household has improved after taking the loan, then power distribution should change across some domains of decision making within the household.

Hypothesis 2: Autonomy-based indicators of empowerment

These hypothesis tested whether microcredit enabled women in contesting their way out of the prescribed norms of gender inequality embedded in the society. Intuitively, the test was concerned whether microcredit empowered women within the constraints of patriarchy imposed by the society and religions. Respondents were also asked if they require someone's permission to decide for household purchases and children. A dummy variable was also considered in capturing their independence in decision making whenever they do not require someone's permission to make such decisions.

CHAPTER 4.

RESULTS AND ANALYSES

4.1 Development of microfinance in Indonesia

Indonesia is one of the first countries to develop commercial microfinance in Asia, with regulated financial institutions providing the bulk of microfinance services throughout the archipelago. In addition to the success of commercial microfinance providers, Indonesia has also been a favorable ground for the development of numerous subsidized government programs, local and community-based financial institutions, cooperatives, and NGOs (Citi Foundation 2009).

Indonesian microfinance is supported by a diverse set of institutions—government, voluntary sector agencies (both national and international), private sector, and bilateral and multilateral agencies. These institutions are considered as one of the initiators in setting up microfinance in Indonesia such as the Pro-FI project (i.e., the promotion of Small Financial Institutions) supported by the Bank Indonesia and the German Technical Cooperation Agency (GTZ).

It aims to improve the operations of the two microfinance providers—“People’s Credit Banks” (BPR) and “Village Credit Boards” (LPDs) in Bali. PERBARINDO, Permodalan Nasional Madani (PNM), GEMA PKM (Gerakan Bersama Pengembangan Keuangan Mikro Indonesia), GIC (Global Innovation Consulting), and many others gave high contribution to the development of microfinance operated by rural banks as well as non-bank financial institutions.

Table 2. List of microfinance organizations in Indonesia.

	Number of Bank	Number of Worker	Total Financing (Credit)	Note
BPR Syariah	160	4,826	4,354,183	Oct. 2013
BPR Conventional	1,634		74,531,494	Oct. 2013
Cooperative Conventional	203,701	438,541	8,118,959	Oct.2013
Cooperative Syariah	3,038		157,000	2007

Sources: Bank Indonesia 2013 and Ministry of Cooperative and SMEs 2007.

In terms of number, BPR Syariah and Cooperative Syariah are operated based on Islamic teachings and considered less than conventional. PNM, as a state-owned enterprise has a mandate to cater for the SMEs than the microenterprises. PNM supports the linkage program between commercial banks and BPRs, likewise, between commercial banks and non-bank microfinance providers. PNM provides loans to non-bank microfinance providers through regional development banks (BPD), with savings as collateral. It has a special brief for the support of Syariah (Islamic) microfinance. Islamic banking is a significant force in

the microfinance and financial sectors in Indonesia, in terms of the many financial services provided as well as the number of outlets providing them.

Despite this proliferation of microfinance service providers, several studies have demonstrated that there are still unmet demands for microfinance services. Majority of the rural households still do not have access to funds either from formal institution or others. Non-access to funds may be due to regulations, or the limited revolving funds itself. Sometimes the lack of a well-managed financing institution also limits the access.

In the case of empowering the poor, a number of studies conclude that microfinance are related to women's empowerment (Asim 2008). However, defining women's empowerment is debatable since the term 'empowerment' is relative to the gender system in the country (Wee and Shaheed 2008). A gender system is attributed from the construction and regulation of specific standards for males and females, the relations between them, in terms of relative hierarchy or relative equality. Any interrelation with other forms of power relations, diverse gender systems produce varied spaces for women's initiatives and empowerment, accompanied by distinctive constraints, diverse sources of support, and dissimilar access to a range of resources.

4.2 Women empowerment in the view of the Muslim women

In this study, determining women perception on women empowerment entailed an exploratory approach. Focus group discussions were conducted three times. First is a discussion with a group of facilitators who have higher level of education and economic status. Second, to micro-credit members who are less educated and economically-challenged. Third, to policymakers of the top level of management of the *Zakah* management organization.

In the first discussion, the researchers had the impression that Muslim women viewed the concept of women empowerment with reference to Islamic Laws. Men and women differ in position and therefore have different regard in doing their responsibilities. However, they agreed that women should have the same right in conveying their opinions and as decisionmakers in their families.

Mrs. Aisyah from Amanah group mentioned that, "*Women as a mother hold important role not only work in "the kitchen, toilet and bedroom."* She said that women should also be included in the process of democracy in the household, particularly the educational concerns for their children. Although, their husbands pay the tuition fees, the mothers should ensure that their kids are on the right track.³

Similar to Mrs. Aisyah, Mr. Dasep who is the leader and senior mentor of the group shared that somehow women have the wisdom to see the future dimension of their children, thereby, enable a more profound decision making to complement their husbands' position.

³ FGD with mentor of Myskat program in Bandung, 24 April 2014. It was attended by 13 mentors (7 women and 6 men).

All the FGD participants agreed that women can be heard by their husbands given any brilliant suggestion they can contribute to solve their family problems. But, if they make a wrong decision, their suggestion may not be considered in the future. For women to be able to share anything brilliant, they must be educated.

Education is not only achieved from formal education. Religious education can also drive a moral good akin to Islamic law that their husbands also respect. In other word, as women they should have a wide horizon in all aspects of life. Education in women is not merely from formal sources but a more active involvement is expected in their social lives. Religious or social organizations in their communities are beneficial. All FGD participants tend to value empowerment similar to equality between men and women. However, they understand the process of empowerment. Equality between wife and husband in their families is a result of this process.

Empowerment is an integrated process among motivators, facilitators, and group of society that requires empowerment through the improvement of knowledge, skills, the provision of amenities, as well as opportunity to reach access to the system of resources in the augmentation of social welfare. One of the purposes of microfinance is reducing the number of the poor through gaining access to financial institutions so that they can empower themselves. Self-empowerment is the ability make good use of “personal potential” in dealing with problems that they faced (Charon 1979).

According to Sumardjo (1999) the characteristics of an empowered woman are:

1. Being able to comprehend herself and her potentials; ability to plan (to anticipate the future change of condition);
2. Being able to direct herself;
3. Having power to negotiate;
4. Having bargaining power in undertaking a mutual cooperation; and
5. Being responsible of her own action.

This indicates that an empowered individual is one who knows, understands, and has good motivation and opportunity. She makes good use of the opportunity, has the energy, can cooperate, knows various alternatives, can make a decision, dares to take risk, can search for information, and has the ability to act in accordance with the situation. The process of empowerment should be done persistently and continuously so that it can lead them to prosperity.

In the case of mentors, most of the women-participants agreed that regardless of any *rupiahs* given by the husbands, it should be able to supply all their household needs; to discount the precious goods because the money may not suffice. However, *women emphasized that they may get full empowerment if they have control over their husbands' income. In other words, the husband's money should go to the wife. But if the wife can earn some money from her own activities, this money should be as her own and the husband could not control it.*

Some of them also opined that this argument may not be accepted by all men. Ms. Alifah stated that, *“there is a time when my husband need some money from me to pay for his loans”*. It is debatable if there is a need to divide between wife’s and husband’s money. As mentioned by Ms. Ai who run her business together with her husband, *“If I have some more money from my own business, I always spend it for household needs, and never think that my husband has loan from me.”*

Mr. Dasep is one of the mentors of Misykat program who had a different view, *“As a husband I have two income resources, my main income as a teacher is given to my wife, but secondary income from my band performance is used for my own necessities. However, I support my wife to have her own saving from her own income.”*

Another Muslim women group, who have not joined the Islamic microfinance, has a different view. This group has a low education and income level. They were so afraid to speak up and share their opinion on women empowerment. They tend to need their husband’s permission to make their own decision. Some of them mentioned that their husbands’ mother in law is always interferes in their internal household. It seems that to define women empowerment is hard as they hold Islamic law partially. In the holy *Quran*, it was mentioned that, *“Men is women leader”* so that women shall be behind the men and seek approval from the husbands in every decision making. This condition, based on their story, led them to be cheaters having problems with moneylenders who charge high interest rate for debt. In Bandung City, there are many money lenders that plunge the poor into deeper poverty.

So, it can be concluded from the group that mentoring and training from Misykat program have affected the way they view self-empowerment. The model of self-empowerment through a strong social capital enabled women to grow in personal spirit and be more productive for individual competence. Self-empowerment yields positive values such as: (a) promoting self-confidence; (b) opening and developing entrepreneurship; (c) opening job vacancies; (d) facilitating obtaining raw materials; (e) facilitating obtaining loans; (f) facilitating marketing because of the wide network; (g) improving work ethos; (h) improving skills/competence; and (i) having creative and innovative trait to reform.

4.3 Review on Islamic Microfinance

4.3.1 Misykat Program of DPU DT (*Dompot Peduli Ummat – Daarut Tauhid*)

Misykat (Microfinance Masyarakat–Microfinance Based on Community) is one of the programs from Dompot Peduli Ummat–Daarut Tauhid Foundation.⁴ This program was set up in 2004 but has been established four years later. This foundation developed the concept of channeling *Zakah* funds as a revolving loan fund rather than merely a charity program. However, some Islamic scholars do not agree to use this fund for loan as the function of *Zakah* as social protection and should be directly given to the beneficiaries' as stated in the *Quran*.

As regard to reducing the poverty rate, this foundation thought that empowerment of women can better uplift them from poverty rather than just making *Zakah* funds available to them. Thus, utilizing *Zakah* need high skill, patience, and sincerity. The following are the basic concepts that this foundation implemented to its microfinance project in relation to poverty rate reduction:

- a. Capital is not everything. Islamic law considers that there is no *Zakah* fund for Muslims who capable of working. Thus, to determine the most vulnerable poor meritable to access the *Zakah* funds is to undertake a need assessment to improve their business.
- b. No charity. Dole-outs only help the poor in a short time. They remain poor in the long-term when if there is no effort to empower them to be more active economically.
- c. Awareness in their potentials. The first thing to do to help the poor is to beat their potential and developed it into optimum.
- d. Access to wide market and networking.
- e. Managing their household in terms of economics.
- f. Mentoring. Empowering needs a long process for planning, monitoring, and evaluation, so the role of mentors/facilitators is important to determine a successful program.

⁴Wallet Caring Ummah (DPU DT) is a community-owned non-profit organization engaged in raising (fundraising) and utilization of *zakat* (*Zakat*, *Infaq*, and Charity) and other funds from the lawful and legal individual, group, company or institution. It is founded on June 16, 1999 by K.H. Abdullah Gymnastiar (Aa Gym) as part of the Foundation Daarut Tauhid with LAZ known to be trustful, professional, and accountable. DPU DT implemented its activities on June 16, 2000. Equipped with a database of members, commitment can easily be monitored. DPU DT has been confirmed as Zakat Institution by the Governor of West Java, dated August 19, 2002. By Decree No.: 451.12/Kep. 846 - YANSOS/2002, DPU DT Foundation also got the attention of the central government, in a short period of time. Since the days as DPU-DT, and became LAZDA, it has managed to become the National Institute of Amil Zakat, LAZNAS, in accordance with the Decree of the Minister of Religious Affairs No. 410 of 2004 on October 13, 2004. After becoming LAZNAS, DPU DT developed a network of up to eight cities, namely: Jakarta, Bogor, Tasikmalaya, Garut, Semarang, Yogyakarta, Lampung, and Palembang. Besides, it has hundreds of network utilization program from Sabang to Papua.

- g. Urge for professional mentor.
- h. Everything is a process that entails time and does not happen instantly.
- i. Motivation to work.

The source of *Zakah* funds is limited. With the large number of poor people, appropriate strategies are needed to cope with this problem. Some implications for this condition are:

1. Charity systems do not complement poverty reduction.
2. ZMO (Zakah Management Organization) institutions have their own systematic strategies to combat poverty.
3. All empowerment programs are impossible to capture all poor people in a short period of time. A gradual program through pilot implementation in a priority region is needed.
4. Empowering program should be the trigger and not to be used as charity. It shall be integrated into a management system from planning, organizing, and staffing to controlling.
5. Empowering program should stimulate to open greater access to formal financial institution for the poor.

This paradigm shift is not easily accepted by other Muslims. The Foundation restricted the requirements in the selection of new members. High commitment is expected from a member who follows the rule. This is based on Islamic teachings.

DPU Daarut Tauhid's Misykat provides microcredit to merchants aiming for economic and spiritual prosperity. The following are the requirements as well as the terms and conditions on how to be a Misykat's member:

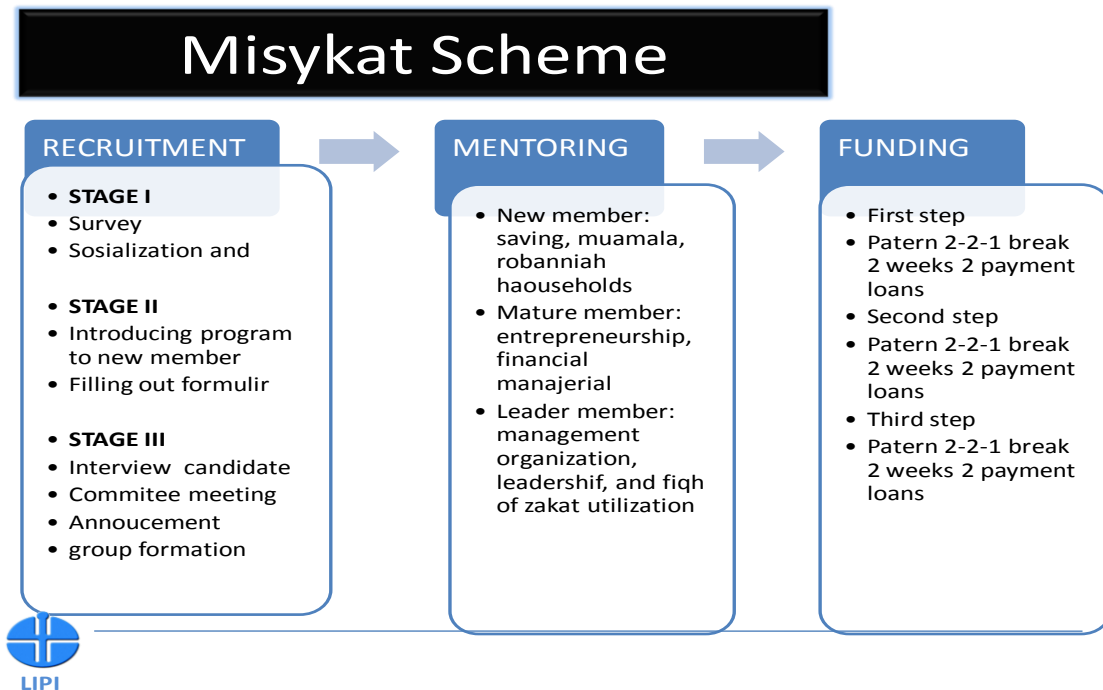
- a. Women; 17 to 55 years old; a group of at least five people.
- b. Must be residing in an area accessible by foot and has lived there for at least six months.
- c. The mandatory responsibility of a member is to follow guidance from Daarut Tauhid. Meetings are scheduled once a week. As a member, services availed include installment loans and saving money. Likewise, obligations go with attendance to lectures and paying dues.
- d. In a group, its business may be heterogeneous or not the same.
- e. Preferred members already have a business (not starting from zero).

Misykat's type of financing is implemented in a 2-2-1 pattern. Out of five people in one group, two people were given the first capital. If the first installment runs smoothly, then the next capital release for the succeeding members follows, up to the last person. The last person to receive is usually the chairman of the group. This procedure socially secures the members with an intangible cohesiveness or tolerance of each other. Relying on trust of

the other three members to the first two members who were granted the first loan, the said three will just have to wait for their schedule and totally believe in the system.

Since its establishment in 2006, DT Misykat capital in Jakarta has benefited nearly 300 people on the funding they provide, ranging from charity to *shodaqoh/infaq*.

Figure 3. Misykat scheme.



Source: Dompot Peduli Ummat–Daarut Tauhid 2014

Mrs. Alifah, one of the mentors, told her story. *“I am already a member of a lending group from 2007 to 2010. The group chose me to manage our financial endeavors. I developed to be a leader as well as a mentor. When I joined MFI, I was exposed to some entrepreneurship training for more than four times. Applying my knowledge from the training, I tried opened my own stall. After four years, my earnings brought me to build the PAUD (Pendidikan Anak Usia Dini–a pre-school). The children’s parents are clients of MFI.”*

Another story has been told by Ms. Ai, she mentioned that before joined Misykat, she was one of the board of “Warna Sari” group funded by the Indonesian government under BKKBN (National Board for Family Planning). The government gave them some fund for 30 members. This program only lent money and with regular meetings of once in two or three month. In fact, the members were disciplined in terms of paying their loans and following the group rule. If there is a margin or profit from their business, they used it to develop their own organization. This model is different from the Misykat program. According to her, each member has responsibility of attending the weekly meeting and recitation. They should also

have a mandatory and voluntary saving. This program also offers saving plan which is useful to cover any unexpected expenses or large expenses such as for house lease, tuition fees, or other big plans for their own investments. The mentor should encourage the member to save their money before spending.

Ms. Lia also added some information on how the Misykat program empowered them through microcredit. *“There are some differences of lending process between other microfinance and Misykat program – DPU DT. If we borrow from a cooperative (other microfinance), we just pay the installment and interest rate. In the Misykat program, there is weekly gathering, to undertake mentoring sessions for the borrower can manage their income through savings and appropriate use. Members also learn to understand what a contract means.*

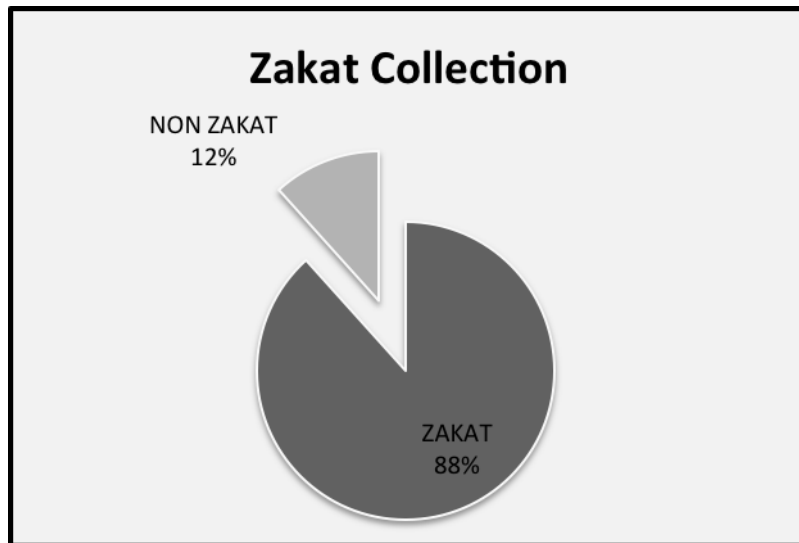
4.3.2 *Zakah* Utilization Program of BAZNAS

Relying on the government’s budget alone for poverty alleviation would hardly work for the attainment of the MDGs. Poverty eradication should also engage other elements and entities in the countries. BAZNAS is one alternative to fund poverty alleviation.

Zakah management had undergone significant change since Act No. 23 of 2011. This new Act mandated a stronger integration of *Zakah* management in the country. In accordance to this Act, *Badan Amil Zakah Nasional (BAZNAS)* comprises three elements: Islamic scholars; professional; and Islamic communities’ leader. Eight of them should come from communities and three from government. Presidential Decree No 14/2014 had completed this law to be implemented. However, the enactment of this law had caused controversy because it was stipulated that *Zakah* management is the authority of the government and the public is only allowed to participate with a government authorization. According to Saidurahman (2013), it was stipulated that alms management be carried out by BAZNAS operating hierarchically from the central to regional level. This stipulation seemed to limit the number of *Zakah* management organizations. The government need to strengthen *Zakah* management in order to mobilize its full potential. But, government more of intended to control the *Zakah* management.

In 2013, *Zakah* fund has been collected by BAZNAS in the West Java Province. The said fund is about 88 percent and the remaining 12 percent is from non-*Zakah* fund (Alms) such as *infaq* and *sadaqah*. This fund was increased dramatically from the previous year. According to the Board, they have just collected “*Zakah* Profession” rather than “*Zakah* Maal” from the civil servants. In every month, more than USD 40,000 has been collected.

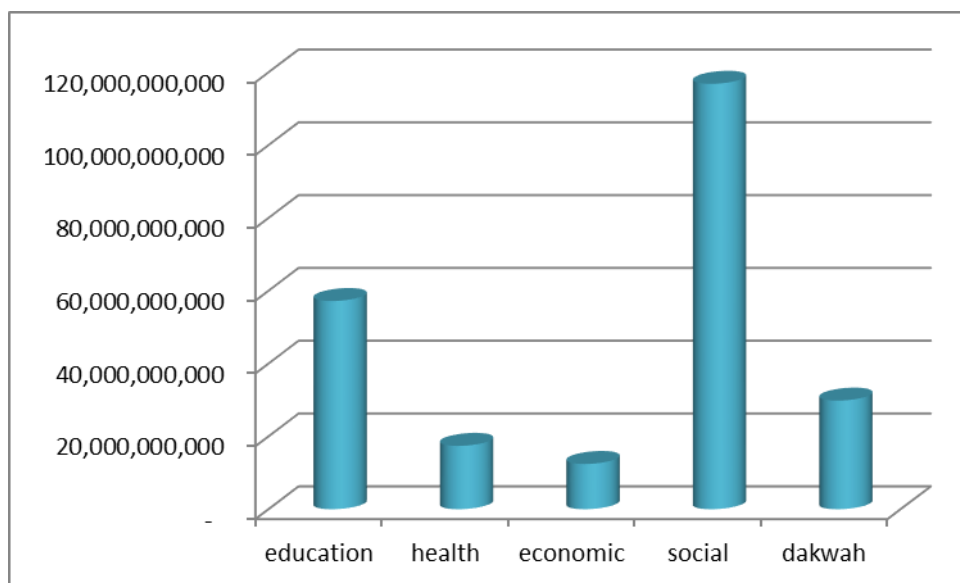
Figure 4. Collected *Zakah* fund by BAZNAS West Java Province 2013.



Source: BAZNAS West Java 2013.

Zakah disbursement is allocated for any activities, which support an economic program such as small enterprise empowerment. This disbursement can be done directly by the *Unit Pengumpulan Zakah (UPZ-Zakah Distribution Unit)*, which is available in every counter of *BAZNAS* or *UPZ* partner. This economic program has been planned systematically in order to ensure that the benefits of this empowerment are not only for individual but also for their community. Therefore, it can encourage community development between *BAZNAS* partners and their community.

Figure 5. *Zakah* disbursement and utilization from BAZNAS West Java Province 2013.



Source: BAZNAS West Java Province 2013.

With regard to the disbursement in the *Zakah* system, *BAZNAS* has used three models to achieve the economic goals. The zero-level-channel aims at direct empowerment through *mustahik*. The two-level-channel, uses coordinators to oversee the *mustahik* turnover. The three-level-channel involves third parties and other coordinators.

Even when the recipient of *Zakah* is an individual, the usage of the money should not only be for consumption. Prophet Muhammad (pbuh) teaches us to distribute *Zakah* for productive activities would be advantageous not only for the *mustahik* but also for their community. Thus, the main purpose of *Zakah* allocation is towards poverty eradication. There have been some success stories in generating resources for poverty alleviation using *Zakah* fund through empowering the smallscale enterprises based on local initiative⁵. For Indonesia, the disbursement of *Zakah* more likely follows some patterns.

4.4 Descriptive analysis

The survey was carried out by a team of four female surveyors headed by the author who supervised the implementation phase. This research was conducted in the West and South City of Bandung. Surveyors were located from local areas and given a one day training to familiarize them with the questionnaire. These surveyors had prior experience of field work and their familiarity on the location helped us in hunting down the respondents including the dropouts. If any problems were identified, the questionnaire was disregarded and feedback was given to the surveyor to ensure quality control. Once the data collection was completed, the data was processed into the computer by team of four individuals including the author herself. Data consistency was checked at all three stages including collection, processing, and analysis.

Table 3 presents the characteristic of the respondents. Most of them are married women between 41 and more than 50 years of age. In terms of educational level, more than 70 percent of the respondents are elementary and junior high school graduates. Their monthly earning mean is only less than USD 300.

Table 3. Characteristics of respondents.

⁵ Again, *Zakah* revenue can be spent for raising the productivity of the poor. Such as financing various development projects in education, health care, safe water, and other social welfare activities, designed exclusively for the benefit of the poor. It is expected that this program can create a multiplier effect for the poor's welfare. However, it is intuitively plausible that an increase in income from *Zakah* investment is expected to have a multiplier larger in size than an increase in income from *non-Zakah* funds investment. It is due to the fact that, in addition to the leakage into saving, some portion of income at the successive rounds of income and spending would be siphoned off by other leakages such as taxes, and imports, mostly in case of the income of the rich (Mannan 2000).

Characteristics	Proportion (%)
Marital status	a. Married = 91.67% b. Widowed = 8.33%
Education	a. Elementary school =49.30% b. Junior high school = 25.35% c. Senior high school = 25.35%
Age	a. 21 – 30 years old = 2.78% b. 31- 40 years old =27.78% c. 41 – 50 years old = 34.72% d. > 50 years old = 34.72%
Income	a. <USD 100/month = 21.13% b. >USD 100 – USD 200 = 36.62% c. >USD 200 – USD 300 = 29.57% d. >USD 300 – USD 1000 = 12.68%

Table 4 summarizes the entire exogenous and endogenous variable used in the oprobit, and biprobit regressions. Table 5 provides the summary statistics for the preference related indicator of empowerment. Table 6 summarizes the autonomy based indicators of empowerment.

Table 4. Summary statistics: Explanatory variable from household data set.

Variable Name	Definition	Treatment Group Mean and SD	Control Group Mean and SD
<u>Endogenous Variable</u> Treatment dummy	0 – 1 Dummy Variable: =1 if the client registered with MFI before December 2013; =0 for clients registering in/after January 2014.	.5548387 (.4985946)	
<u>Exogenous Variables</u>			
Age of respondent	Reported age of respondent confirmed by observation	46.39535 (10.91602)	43.55072 (9.535593)
Schooling of respondent	Number of years of schooling completed by the respondent	8.05814 (2.536114)	7.594203 (2.528187)
Children	Number of total children of the respondent	2.081395 (1.356597)	2.086957 (1.094628)
Age difference	Difference between the reported ages of husband and wife	3.965116 (3.637865)	4.449275 (4.009314)
Number of family members	Number of people who live in the same house at the time of observation	4.860465 (1.91517)	4.839506 (1.560904)
Joint family	0-1 Dummy Variable, =1 if the respondent lives with the parents of her husband; = 0 otherwise	.3372093 (.4755298)	.3043478 (.4635016)
First utilization by respondent	0-1 Dummy Variable, =1 if the first loan taken from	.5813953 (.4962238)	.3768116 (.4881372)

	MFI was utilized by respondent herself; = 0 otherwise		
Working female before loan	0-1 Dummy Variable, =1 if the respondent was a working women prior to taking loan; = 0 otherwise	.627907 (.486198)	.3333333 (.4748581)
<u>Interaction term</u> Institution *treatment	0-1 Dummy Variable, =1 if the respondent is a member of DPU-DT; = 0 if the respondent is a member of BAZNAS	.8604651 (.3485361)	.6811594 (.4694413)
Number of observation		144	96

Legend: * Standard deviation in parenthesis.

Most of the variables are self-explanatory. A few need further explanations. In Table 4, the two exogenous variables: (i) 'working female before loan'; and (ii) 'first utilization by respondent' need some clarification. 'Working female before loan' is a dummy variable constructed by assigning '1' to all the women who had a working status before taking the loan will not be influenced by intervention. This variable served as an exogenous proxy for initial endowment of empowerment. The choice of this proxy was based on the economic theory, that one of the routes identified for empowerment earlier was through access to independent income.⁶ As a natural extension, it had been argued that by controlling the women who were working prior to taking a loan, most of the unobserved heterogeneity between the incoming borrowers and those who took the loan at an earlier date had been captured. Likewise, the dummy for the 'first loan utilized by the respondents' captured whether they were already empowered at the time of taking the loan and acted as another exogenous proxy for controlling the levels of initial empowerment.

Table 5 shows a significant drop in the number of observations available for each indicator both in the treatment and control group. About 30 respondents of widowed women, household heads were dropped from the analysis (i.e., about 30 respondents). Also, some of the questions were inapplicable to those women who have not yet been required to make such a decision. For instance, women with young children did not know whether their preferences would be reflected in their children marriages. In such cases the observation was disregarded. Nevertheless, most of the variables generated enough observations in the control and treatment groups to allow for a meaningful estimation, except for the decision regarding children marriages. Hence, the question regarding children marriage was not considered in the final analysis.

⁶ To some extent, it is presumed that women have a work (with or without her husband's permission). If she would like to spend her income, her husband will not forbid or intervene. However, most women tend to inform their husbands how they spend their income.

Table 5. Summary statistics: Outcome indicators – ‘Say’ in HH Decision making (Ordinal Development Variable 1-5).

Dependent Variable	Treatment Group Mean and SD	N	Control Group Mean and SD	N	t-stat for difference in means
Boy’s schooling decision	4.953125 (.2122016)	128	4.54321 (1.084543)	81	3.06**
Girl’s schooling decision	4.945736 (.2595091)	129	4.407407 (1.191404)	81	4.24***
Children marriage decision	4.317829 (1.430606)	129	3.950617 (1.548396)	81	-0.17
Respondent medical care	4.930233 (.335085)	129	4.740741 (.6078194)	81	1.60
Children medical care	4.945736 (.2274202)	129	4.753086 (.5369093)	81	2.55**
Family planning decision	4.844961 (.5652656)	129	4.7625 (.6212228)	80	-0.95
Social visits to women’s families	4.837209 (.5122057)	129	4.728395 (.5480042)	81	0.93
Social visit in husband’s families	4.79845 (.5502818)	129	4.728395 (.5703583)	81	-1.91**
Work for earned income	4.744186 (.773376)	129	4.555556 (.9354143)	81	-0.13
Borrow money from MFI	4.868217 (.5913418)	129	4.604938 (.8467439)	81	2.79***
Purchase of HH assets	4.775194 (.6026026)	129	4.753086 (.5369093)	81	-2.92***
Decision about house Repair	4.643411 (.8996392)	129	4.641975 (.7954345)	81	-0.25
Sale/purchase house	4.705426 (.8043155)	129	4.444444 (1.183216)	81	0.72
Social visit in neighborhood	4.782946 (.7066784)	129	4.407407 (1.242757)	81	-0.65

Legend: * All the dependent ordinal variables measure the extent to which women’s preferences are reflected in the decision making process; 1 indicating that her preferences are never reflected in these decisions while 5 indicates that her preferences are always taken into account..

** Standard deviations are reported in the parenthesis.

Moreover, it is important to note that the difference in unconditional mean across control and treatment group comes out to be negative for some variable such as family planning, purchase household, and social mobility decision as reported in Tables 5 and 6. The differences however are positive and significant for financial decision and child related schooling decision.

The pattern in the data gives some credence to the earlier conjecture that power distribution is different across various domains of household decision. In other words, the basic statistics suggest that microcredit might be important to reduce or increase the level of power coefficient in the household decision making.

Table 6. Summary statistics: Outcome Indicators –‘Autonomy’ in HH Decision making (Dichotomous Dependent Variable (0/1)).

Dependent Variable	Treatment Group Mean and SD	N	Control Group Mean and SD	N	t-stat for difference in means
Purchasing ice-cream for Children	.9922481 (.88045)	129	.9753086 (.156149)	81	0.29
Purchasing grocery/fruits	.9689922 (.1740144)	129	.9135802 (.2827336)	81	-1.24
Purchasing medicine for herself	.9844961 (.1240272)	129	.8271605 (.3804643)	81	2.47
Purchasing clothes/cosmetics for herself	.9534884 (.211411)	129	.7037037 (.4594683)	81	1.04
Purchasing books/uniform for children	.8837209 (.321809)	129	.6666667 (.4748581)	81	2.01
Taking a child to a doctor	.7209302 (.4502906)	129	.5432099 (.4993602)	81	-0.50
Purchasing furniture	.3255814 (.4704185)	129	.2469136 (.4339028)	81	-0.41
Purchasing refrigerator/TV	.379845 (.4872403)	129	.2345679 (.4263685)	81	1.29
Sale/purchase of personal assets (jewelry)	.2248062 (.4190821)	129	.1604938 (.3693504)	81	0.27

Legend: * All the dependent binary variables measure whether the women requires someone’s permission in making the decision. ‘0’ indicates that she does require someone’s permission in the HH while ‘1’ indicates complete autonomy in decision making.

** Standard deviations are reported in the parenthesis.

4.5 Estimation of results

This section uses nine ordinal dependent variables as summarized in Table 4 to test whether participation in the microcredit program has increased the extent to which women’s preference are taken into consideration in various domains of household decision. The ordinal dependent variables take a value on an increasing scale of 1-5 where the lower end of scale indicates virtually no ‘say’ in decision making while higher end values indicate full recognition of her ‘voice’ in household decisions. The dependent variables cover five broad categories of household decisions regarding children, economic, health, social mobility, and resources allocation sufficient to indicate the extent of women’s centrality within the household.

4.5.1 Hypothesis 1: Preference-based indicators of empowerment

The results of the ordered probit regression are reported in Tables 7 to 10. The results are grouped by five different dimensions of empowerment: children related decision; health decision; economic decision⁷ ; social mobility decision; and major household purchases.

The preferred regression is regression (1) in Tables 7 to 10. It uses proxies including a dummy for ‘working women before taking a loan’ and a dummy for self utilization of first loan by respondent. Both these proxies seek to control the potential endogeneity stemming from initial differences between control and treatment group. The first regression is preferred since it assumed that all types of microcredit from any institution will influence women empowerment. Regression (2) adds an interaction term of institution dummy interacted with treatment dummy to control for any unobserved institutional differences between the treated units of participating institution.⁸

Table 7. Ordered probit estimates of women’s empowerment ‘Say’ in child related decision.

Women’s opinion taken into consideration for household decisions:

Independent Variables	Boy’s Schooling Oprobit Coefficients		Girl’s Schooling Oprobit Coefficients		Child’s Medical Care Oprobit Coefficients	
	1	2	1	2	1	2
Treatment dummy	.9631*** (.2728)	.4694 (.4580)	1.203*** (.2635)	.5903 (.4465)	.8545*** (.2700)	.3662 (.4605)
Age difference with husband	.0256 (.0256)	.0208 (.0314)	-.0102 (.0277)	-.0161 (.0282)	.0010 (.0295)	.0002 (.0296)
Age of respondent	.00798 (.0120)	.0039 (.0125)	.0054 (.0118)	.0006 (.0123)	.0112 (.0124)	.0077 (.0128)
Education	.0110 (.0521)	.0130 (.0532)	.0194 (.05058)	.0182 (.0517)	.0028 (.0525)	.0065 (.0535)
Number of children	-.0106 (.1520)	-.0320 (.1569)	-.1601 (.1500)	-.1939 (.1561)	-.2352 (.1696)	-.2673 (.1774)
Number of HH member	.0795 (.1319)	.0990 (.1386)	.1201 (.1311)	.1432 (.1377)	.2341* (.1501)	.2598* (.1597)
Joint family	.0984 (.3138)	.0966 (.3168)	.0878 (.2994)	.0836 (.3032)	-.3917 (.2944)	-.3787 (.2981)
Working female before loan	-.1015 (.2635)	-.1322 (.2689)	-.2081194 (.2471865)	-.2588 (.2538)	-.0722 (.2611)	-.1064 (.2656)
First utilization by respondent	.0797 (.3277)	.0679 (.3284)	-.1219 (.3136)	-.1137 (.3127)	.1306 (.3121)	.1014 (.3149)
Interaction term		.6372 (.4968)		.7893* (.4900)		.6126 (.4891)
Number of observation	209	209	210	210	210	210
Pseudo R-Squared	0.0966	0.1048	0.1269	0.1376	0.1002	0.1091
Chi ² statistic	18.25	19.81	28.68	31.10	16.62	18.09
Log likelihood	-85.377	-84.601	-98.679	-97.470	-74.591	-73.858

Note: Standard deviation are reported in the parenthesis.

Legend: *p<0.1, **p<0.05, ***p<0.01.

The estimated effect of treatment on indicators of empowerment based on first specification showed that all three dimensions relating to child decision is statistically significant at 95 percent confidence

⁷ Household and economic decisions are both reported in Table 8 for spatial convenience.

⁸ Note that the experiment design constrained by dynamics on the ground as outlined in the sampling framework precludes the use of simple institutional dummy to capture fixed effect.

level. On the contrary, the treatment effect has no impact on child relating decision as indicated by second specification. Moreover, variable interaction term is significant for 'girl's schooling' dimensions as shown in the second regression. It can be explained that by joining microfinance institution the member can propose scholarship for their children particularly for their daughter, thus it can be said that Mysikat program has significant impact to persuade women to be more empowered in 'girl schooling decision. In contrast, although decision of boy's schooling is affected by treatment effect, there are no other variables that significantly affected this decision as indicated by the first and second specification.

The number of household families together with the treatment variable had significant effect on women in deciding for their children's medical care for both specifications. For big families, women have more support from other family members for decision making. Therefore, it can be concluded that the preference empowerment related to child decision between the mature and new client is affected by their participation in microfinance.

With regard to health and economic decision making (Table 8), findings showed some positive and significant effects of treatment for all variables for the first specification, except for 'family planning decision'; but, insignificant for the second specification. Other variables, such as number of children, number of household members, and type of joint family, also had significant effects to women decision on their medical check-up. The more number of their children the less power of women to decide their medical concerns. It is because they tend to give priority for their children's health more than their own. However, for the women who live in a bigger family, they attend to their own health concerns. Similarly, for the women who live with other family (i.e., still depend on other families' assistance), their power to decide on their own medical concern is reduced significantly.

However, for the second specification, interaction term variable for 'family planning decision' has a significant impact of 95 percent confidence level. It seems that the more active the member the more they understand to decide whether they take family planning program or not. The Mysikat program, because of their regular meetings for clients, was able to educate them about 'family planning' in the perspective of Islam.⁹

Meanwhile, BAZNAS does not have such program. Therefore, the number of children is influenced by family planning decisions. According to both specifications, it is believed that the lesser the number of children the more powerful women are for family planning decisions. Other variables such as the respondents' education and age have positive sign and significantly influence women decision on family planning. The more educated and mature the women are the higher their level of empowerment. Thus, it can be concluded that microfinance benefits clients (specific program for empowerment), likewise, could influence the clients' family planning perception particularly those who are educated and matured.

Education and age of the women-respondents significantly affect their sense of empowerment. Women prefer to work for additional income for the family especially when their household is big. The women's level of education is significant when they access money from a microfinance institution. The higher the level of their education, the more options they have to borrow money from MFI. Therefore, women participation in microcredit from an Islamic microfinance institution have significant effect on their empowerment in health and economic decision.

⁹ Indonesia is known for its successful family planning program, which roughly halved the total fertility rate for the country since the 1970s and increased the contraceptive prevalence to almost 60 percent. Part of this success can be attributed to the development of strategic partnerships with Muslim leaders, who have supported the program in their communities (UNFPA 2014).

Table 8. Ordered probit estimates of women's empowerment 'Say' in health and economic decision.

Women's opinion taken into consideration in household decisions on:

Independent Variables	Medical Check Up Oprobit Coefficients		Family Planning Oprobit Coefficients		Working for Earned Income Oprobit Coefficients		Borrowing Money from MFI Oprobit Coefficients	
	1	2	1	2	1	2	1	2
Treatment dummy	.7122875*** (.2679701)	.2161576 (.4700004)	.133155 (.2418162)	-.4669878 (.38822)	.4727346** (.2131442)	.3554133 (.4261773)	.6802803** (.232693)	.2462624 (.4396345)
Age difference with husband	.0000191 (.0292935)	-.0023378 (.0294631)	.0314271 (.0289502)	.0257727 (.0293852)	-.0078106 (.024516)	-.0081732 (.024542)	-.0223192 (.0265834)	-.0233397 (.0266675)
Age of respondent	.0086346 (.0131538)	.0054124 (.0134446)	.0246954** (.0120291)	.0199051* (.0123822)	.0068156 (.0100601)	.006061 (.0103426)	.0002462 (.0109159)	-.001465 (.0110344)
Education	.071046 (.0582824)	.0715238 (.0592198)	.1093428** (.0538762)	.1103574** (.0547426)	.0271719 (.0448939)	.0278597 (.0450244)	.0869565* (.0517992)	.0897402* (.0522864)
Number of children	-.5992287** (.2434722)	-.6068285** (.2447182)	-.4647603*** (.1762869)	-.4552136*** (.1746113)	-.1953442 (.1404733)	-.2000751 (.1418663)	-.0368277 (.138433)	-.029558 (.1388378)
Number of HH member	.4873502** (.2128527)	.5022658** (.2158559)	.2673027* (.1446228)	.2627731 (.1455011)	.2563838** (.1268664)	.2604192** (.1283777)	.0525246 (.1111647)	.0512413 (.1120103)
Joint family	-.5961168** (.2891627)	-.613116** (.2921729)	-.4806024* (.279141)	-.5177907 (.2829062)	-.1954815 (.2444188)	-.1921568 (.2448898)	-.0951704 (.2794379)	-.0925432 (.2817849)
Working female before loan	.2627923 (.2718548)	.2198084 (.2756801)	.2557694 (.240349)	.2430483 (.2429857)	-.0421801 (.2104512)	-.0467938 (.2110175)	.3367448 (.2342427)	.338202 (.2356133)
First utilization by respondent	-.0670896 (.3482796)	-.1167461 (.3542974)	.2775776 (.2982644)	.2103308 (.3049633)	-.2355485 (.2870784)	-.2446614 (.2887165)	.068821 (.2946083)	.0405127 (.2969958)
Interaction term		.6287275 (.5065215)		.7695819** (.3971858)		.1364893 (.4315955)		.5194554 (.4589773)
Number of observation	210	210	209	209	210	210	210	210
Pseudo R ²	0.1341	0.1425	0.0993	0.1177	0.0423	0.0427	0.0950	0.1004
Chi ² statistic	22.91	24.35	19.63	23.26	11.85	11.95	20.90	22.10
Log likelihood	-73.98109	-73.2586	-89.008406	-87.19199	-134.0586	-134.00948	-99.580989	-98.978426

Note: Standard deviation are reported in the parenthesis.

Legend: *p<0.1, **p<0.05, ***p<0.01

Table 9. Ordered probit estimates of women’s empowerment: ‘Say’ in HER social mobility decision.

Women’s opinion taken into consideration in household decisions on:

Independent Variables	Social Visits to Women’s Family Oprobit Coefficients		Social Visits to Man’s Family Oprobit Coefficients		Social Visits in Neighborhoods Oprobit Coefficients	
	1	2	1	2	1	2
Treatment dummy	.4133925** (.2196224)	-.1391077 (.4031577)	.29181 (.2155102)	-.3488381 (.3810231)	.531845*** (.2128992)	.4706472 (.4481479)
Age difference with husband	-.011232 (.0255446)	-.0144934 (.025718)	-.0190708 (.0251858)	-.0243817 (.0254734)	-.0080012 (.0254829)	-.0083374 (.0255623)
Age of respondent	-.0061576 (.0105274)	-.0091469 (.0107339)	-.0095748 (.0102246)	-.0145702 (.0106769)	.00371 (.010058)	.0032571 (.0104791)
Education	.0504734 (.0471899)	.0496789 (.0476344)	.0070238 (.0445665)	.0048425 (.0453157)	.0446052 (.0464131)	.0451247 (.0465792)
Number of children	-.2375447* (.1280407)	-.2438998** (.1284653)	-.1517578 (.1199535)	-.1735873 (.1223327)	.0046958 (.1218399)	.0033737 (.122186)
Number of HH members	.1523128 (.1014403)	.1597119 (.1029008)	.0942743 (.0969891)	.1075359 (.0997246)	.0370121 (.0976981)	.0377567 (.097905)
Joint family	-.2159726 (.2479918)	-.2310272 (.2494295)	-.004512 (.2483515)	.004192 (.2507796)	.0079073 (.2602243)	.0085159 (.2602817)
Working female before loan	-.0359888 (.2177084)	-.0611227 (.2195947)	-.1333848 (.2124021)	-.1710975 (.2155373)	.0918016 (.2138184)	.0898511 (.2142185)
First utilization by respondent	-.213088 (.3080264)	-.2570419 (.3120767)	-.2296074 (.3003971)	-.2780937 (.3047932)	-.4124505 (.3136856)	-.4138195 (.3136392)
Interaction term		.6566236* (.4101018)		.7702441** (.3852511)		.0706074 (.4562579)
Number of observation	210	210	210	210	210	210
Pseudo R-Squared	0.0459	0.0566	0.0225	0.0382	0.0389	0.0390
Chi ² statistic	10.37	12.80	5.52	9.35	10.54	10.56
Log likelihood	-107.80839	-106.59627	-119.62004	-117.70421	-130.24849	-130.23663

Note: Standard deviation are reported in the parenthesis.

Legend: *p<0.1, **p<0.05, ***p<0.01

Table 10. Ordered probit estimates of women’s empowerment: ‘Say’ in sale/purchase of HH assets decision.

Women's opinion taken into consideration in household decisions on:

Independent Variables	Purchase HH Assets Oprobit Coefficients		House Repair Oprobit Coefficients		Sale/Purchase House Oprobit Coefficients	
	1	2	1	2	1	2
Treatment dummy	.0597458 (.2145313)	.0566642 (.4181243)	.0542128 (.2061756)	.1317463 (.4108411)	.3316393* (.2040984)	.4836328 (.4431984)
Age difference with husband	-.0176552 (.0246516)	-.0176716 (.0247253)	.0299445 (.0262812)	.0308471 (.0266369)	.0152257 (.0247721)	.0169668 (.0252095)
Age of respondent	.0124992 (.0099332)	.0124764 (.0102811)	.0077899 (.0099367)	.0084321 (.0103616)	-.0017653 (.0098469)	-.0008465 (.0101297)
Education	.0539559 (.045133)	.0539874 (.0452846)	.0410318 (.0422266)	.0409689 (.0421993)	.0400558 (.0426396)	.040784 (.0426642)
Number of children	.0133665 (.1127236)	.0133306 (.1128005)	-.1720672 (.1137865)	-.1710011 (.1138985)	-.1550423 (.1147141)	-.1546418 (.1148685)
Number of HH members	-.0262758 (.0900712)	-.0262817 (.0900768)	.0632315 (.0922292)	.0630342 (.092169)	.0998553 (.0915677)	.0994294 (.0914572)
Joint family	-.1154331 (.2517645)	-.1153066 (.2522003)	-.1750713 (.2405216)	-.1754054 (.2405685)	.0143734 (.2430762)	.0178747 (.2434395)
Working female before loan	.1461075 (.2125401)	.1459846 (.2130205)	.1047054 (.2040787)	.1076374 (.2046053)	-.0045812 (.2021488)	-.0007125 (.2024347)
First utilization by respondent	-.2065091 (.2980844)	-.2067466 (.2993747)	-.3491901 (.2970066)	-.3474534 (.2973747)	-.2428409 (.2854783)	-.2323829 (.2864372)
Interaction term		.0035695 (.4157635)		-.0891425 (.4075762)		-.1734491 (.4465718)
Number of observation	210	210	210	210	210	210
Pseudo R-Squared	0.0227	0.0227	0.0251	0.0253	0.0236	0.0242
Chi ² statistic	5.46	5.46	7.49	7.54	6.97	7.12
Log likelihood	-117.74591	-117.74587	-145.46775	-145.4436	-144.01679	-143.93941

Note: Standard deviation are reported in the parenthesis.

Legend: *p<0.1, **p<0.05, ***p<0.01.

The effect of participation in microfinance is significant for a 'say' in a woman's mobility decision (Table 9) for the first specification, except for 'social visit man family' decision. The number of children has significant effect on 'social visit women family' decision. The lesser the number of children, the higher women empowerment is in decision making. However, there is no significant effect for other dependent variables to support 'social visit man and neighborhoods' decision except treatment variable and interaction term. Thus, participation in microcredit has effect on women's mobility decision.

On the contrary, for major household decisions such as purchase of household asset, household repairs, and sale or purchase of house, the treatment effect is only significant to the sale or purchase of houses, but not for other variables. Therefore, participation in microcredit has no effect on major household decision. Although the urban area of Bandung City consists of multicultural people, most of the dwellers are oriented toward the patriarchy system. Thus, for any big decision regarding purchase of any household asset or repair, the authority is lodged to men than women. However, if the couple want to buy or sell a house, they should do it together; loan ailment needs a consent from each from other. In this context, women's voice are deemed important in compliance with the law.

Consider the second test for robustness of the coefficients in the above regression under the treatment group. Based on the evaluation for non-randomized observational studies, like this one, there is a problem of bias estimation. Rosenbaum and Rubin (1983) proposed propensity score matching as a method to reduce the bias in the estimation of treatment group's effects on the data sets. Grilli and Rampichini (2011) argued following reasons why PSM could be better than OLS:

1. The additional common support condition focuses on comparison of comparable subjects.
2. Matching is a non-parametric technique:
 - It avoids potential misspecification of $E(Y(0) | X)$.
 - It allows for arbitrary heterogeneity in causal effects $E(Y(1)-Y(0) | X)$.
3. If OLS is correctly specified, it is more efficient to make OLS less parametric when adding interactions.

The choice of variables used for participation regression is motivated by the potential determinants influencing the timing of participation. Table 11 reports the result of the first stage probit regression. Findings showed that participation in Islamic microfinance is influenced by the age of respondent (i.e., at the time of transacting the loan), education of respondent, and working women before taking loan from Islamic microfinance. Other variables such as age difference with the husband, number of children, number of household members, first loan utilization by respondent, and joined family are not significant at 95 percent level of confidence. It shows the importance of the education of the respondent in influencing the timing of participation in the program. Based on our interview with some clients and it is supported by questionnaire data, we found that clients with higher education (9-12 years of schooling) tend to be the longer clients of microfinance. Especially for DPU-DT case which gave an opportunity for potential clients to be mentor. Eventually, this mentor can arrange their own group without any influences from DPU-DT Board. The model has been over parameterized, using squared terms of observable covariates to improve predicted probability of assignment to the treated group (Godtland et al. 2004) and (Rubin and Thomas 1996).

Table 11. Participation in Islamic microfinance program probit regression.

Dependent Variable Treatment (0/1)

Independent Variables	Probit Coefficients	p-value
Age of respondent (at time of taking loan-TTL)	-.1245464	0.040**
Age of respondent –TTL-squared	.0016627	0.022**

Education of respondent	.4923811	0.003**
Education of respondent square	-.0208333	0.004**
Age difference with husband	.0125451	0.476
Number of children	.1227905	0.279
Number of HH members	-.0530664	0.545
Working women	.6807412	0.001***
First loan utilized by respondent	.1927137	0.702
Joint family	.3102274	0.220
Number of observations	210	
Pseudo R-squared	0.2959	
Chi ² statistic	27.97	
Log likelihood	-29.294882	

Legend: *p<0.1, **p<0.05, ***p<0.01.

The key assumption in estimating the ATE (Average Treatment Effect)¹⁰ requires that the propensity score satisfies the common support condition. The idea for testing this assumption is to inspect the multivariate covariate distribution of propensity scores for both the control and treatment group. We assess the common support condition by plotting the propensity scores estimated for both the treatment and control group. If there is a considerable overlap in the covariate distribution, then both the groups are similar in terms of observed characteristics.

Moreover, we test for any systematic differences between the treatment and comparison groups constructed by propensity score matching. We use the balancing test developed by Smith and Todd (2001) for this purpose. The 'balancing test' reveals whether the comparison group constructed with PSM sufficiently resemble the treatment group, by testing whether the means of observable variables are significantly different (Smith and Todd 2001). Within each block of treated and control matches constructed by PSM, a t-test of equality of means is conducted for each variable included in the probit for participation equation.

A non-rejection of the null implies that there are no significant differences between the treated and comparison units in their observed characteristics. This predicted probability of participation in the program or propensity score is then used to match treated units with observationally similar control units. A number of different matching algorithms can be used to match the treated and control units based on propensity scores. All these methods includes nearest neighbor, kernel, radius, and stratification matching yield similar results asymptotically. Typically, one treatment case is matched to several control cases, but one-to-one matching is also common and may be preferred (Glazerman, Levy, and Myers, 2003). Moreover, Smith and Todd (2001) demonstrate that estimates are highly sensitive to matching methods in case of small samples.

Table 12. Balancing test.

T-stat for equality of means for observed variables in the treated and control groups

Independent Variables	T-stat
Age of respondent	-0.9867
Age difference with husband	0.0106
Education	-1.6045

¹⁰ The ATE = E [Y(1) - Y(0)] is useful to evaluate what is the expected effect on the outcome if individuals in the population were randomly assigned to treatment. However, Heckman (1997) noted that ATE might not be relevant to policymakers because it included the effect on persons whom the programme was never intended.

Number of children	0.4270
Number of HH member	-0.0827
Joint family	-1.1244
First utilization by respondent	-2.2477
Working female before loan	-3.5907
Number of observation	
Controls	81
Treated	129

Source: Survey 2014.

Table 12 reports the result for the balancing test on difference in means of observable covariates. The balancing property is satisfied with statistically insignificant difference in means between all the observed covariates of propensity scores. The results with bootstrapped standard errors for all five categories of dependent variables are reported in Table 13. The three specifications are called Nearest Neighbor, Kernel, and Radius matching. Different results yielded for the ordered probit regressions. For instance, the decision relating to child schooling has significant effect according to Kernel and Radius matching. But, Nearest Neighbor matching showed negative sign which meant reduce the power of empowerment.¹¹ The negative sign indicated that there was a significant reduction of power coefficient on the empowerment indicator. Meanwhile, a positive sign indicated an improvement in the power of empowerment coefficient. For girls' schooling decisions for instance, the empowerment of women engaged in microfinance increased significantly for all matching methods. This result is similar to both ordered regression specifications. This shows that PSM results confirm OLS result where all treated clients have positive ATT value, except for boys' schooling decision and child medical care decisions.

The validity of our estimates both for the simple ordered probit regressions and propensity score matching relies critically on the conditional mean independence assumption or selection on observables. Even after controlling for initial levels of empowerment through proxies and making the control units resemble treated units as closely as possible, propensity score matching may yield endogeneity or selection on unobservables. For future studies, the following tests may be necessary: 1) instrumental variable techniques (IV regression); 2) bounding (the drawback is they often give quite wide an uninformative bounds, if we are not willing to impose strong assumptions); 3) sensitivity analysis: to assess the bias of causal effect estimates when the uncounfoundness assumption is assumed to fail in some specific and meaningful ways.

Table 13. Treatment effect estimates of women's empowerment.

Propensity Score Matching Method

Women's opinion taken into consideration in decision regarding:

Independent Variables	ATT (Nearest)	ATT (Kernel)	ATT (Radius)	NT	NC
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¹¹ The Nearest Neighbor matching's treated and control units considered the closest propensity score. Although it is not necessary, the method is usually applied with replacement, in the sense that a control unit can be a best match for more than one-treated unit and the outcome of the matched control units is computed. The ATT (Average Treatment Effect on the Treated) of interest is then obtained by averaging these differences. Thus, according to Grilli and Rampichini (2011) it is better to use other matching methods that have better result for ATT.

	Neighbor Matching (1)	(2)	(3)		
Boy's schooling decisions	-0.124	0.036*	-0.001	125	69
Girl's schooling decisions	0.062*	0.098*	0.044*	129	58
Children medical care	-0.039	-0.002	0.037*	129	58
Family planning decision	0.085*	0.094*	0.181*	129	69
Respondent's medical care	0.047*	0.054*	0.046*	129	69
Social visit to women's family	0.016*	0.067*	0.137*	129	81
Social visits to husband's family	0.031*	0.087*	0.159*	125	69
Social Visits in neighborhood	0.093*	0.077*	0.399*	129	69
Work for earned income	0.047*	0.056*	0.112*	129	69
Borrow money from MFI	0.000	0.035*	0.094*	129	58
Purchase of HH assets	0.016*	0.084*	0.105*	129	58
Decision about house repair	0.062*	0.140*	0.197*	129	69
Sale/Purchase of house	0.000	0.037*	0.124*	129	58

Note: Standard deviation are reported in the parenthesis.

Legend: *p<0.1, **p<0.05, ***p<0.01.

4.5.2 Hypothesis 2: Autonomy-based indicators of empowerment

In this section, we use another set of empowerment indicators where we ask the respondent whether they require someone's permission to make decisions related to household purchases and children. We generate dummy variable capturing their independence in decision making whenever they do not require someone's permission to make such decisions.

We divide our indicators into three group categories: 'small' purchases like grocery, medicine, and clothes/cosmetic for herself. Second category includes children related decisions like buying sweets/ice cream, book/uniforms, and taking a child to the doctors. The 'purchase ice cream for a children' has been disregarded because this variable is predicted to be a success and has multicollinearity with variable 'first utilization' and treatment. The multicollinearity happened since all respondents answered perfectly 'empowered' (1) for 'purchase ice cream for children'. To all women who have earned their income and treated as mature clients of MFI (which is indicated with '1'), this variable is a minor decision that to need someone's permissions. Third category includes purchasing household assets, sale/purchase of personal assets like jewelry, and purchase/sale of house.

The results are presented in Tables 14 to 16 for the same specification used to test the earlier hypothesis. The estimated coefficient of treatment dummy is statistically significant across both categories at 95 percent level of confidence. Institutional level fixed effects are introduced in the second specification. The significance of the coefficient on this particular question is also significant for 'purchasing refrigerator' only. One possible explanation for the strong fixed effect could be their participation in microfinance programs which capacitated them to run a small business (i.e., particularly for those who had a loan with DPU_DT where clients are given education). Thus, a working respondent has more independence to decide any major household purchase that would support a business. Nevertheless, most of the findings presented in this section are consistent with earlier results. It is obvious that if there are first order changes in the extent to which women's preference are reflected in the decision making process, then it is likely that there will be higher order changes in the 'autonomy' or independence in decision making for the female partner.

Table 17 shows the results for the propensity score matching. The covariate used for propensity score matching is identical to the ones used earlier. Data showed that kernel matching revealed a

positive sign for all empowerment indicators of women who participated in microfinance programs. To all decisions regarding major households such as purchase and sale of houses, the influence of empowerment increased significantly. This finding is similar to the previous PSM test for ordered regressions. However, for a marginal significance, the 'purchase clothes/cosmetics' and 'purchase uniform or book for children' have negative effects in all matching estimates. The engagement of women to MFI on treated clients (mature) in DPU-DT helped these women to be more understanding on how they utilize their money. Their mentors guided them in wisely utilizing their loan and income. Thus, it can be concluded that participation on microcredit programs have a significantly improved women empowerment and their position in their family. Changes in ordered decision making process, more likely effect to higher order changes in the autonomy in decision making for the female partner.

Table 14. Probit estimates of 'autonomy' in HH decisions.

Women do not require someone's permission to purchase.

Independent Variables	Grocery/fruits Probit Coefficients		Medicine for herself Probit Coefficients		Personal Clothes/Cosmetics Probit Coefficients	
	1	2	1	2	1	2
Treatment dummy	2.172687*** (.6229616)	2.186146*** (.6858963)	3.205501*** (.8620169)	3.0371*** (.8980179)	2.055147*** (.375031)	1.998448*** (.3860184)
Age difference with husband	.0327509 (.0740189)	.0330189 (.0741214)	.0298681 (.077558)	.0254649 (.0759583)	-.031521 (.0438909)	-.0303941 (.0439576)
Age of respondent	.0159701 (.0278233)	.0169503 (.0344664)	-.0112187 (.0328752)	-.015649 (.0335024)	.0134861 (.020447)	.010185 (.0208227)
Education	.2102032 (.1384204)	.2088711* (.1411508)	.1401571 (.1158149)	.1486483 (.1170781)	.0726735 (.0783408)	.0817739 (.0804374)
Number of children	1.364924*** (.4359904)	1.363208*** (.4366675)	.6545032** (.3310577)	.6377398** (.3352787)	.0283525 (.1916676)	.0440024 (.1943084)
Total number of family members	-.0097323 (.1910009)	-.0091946 (.1911337)	.2680657 (.3374837)	.2773419 (.3405269)	.085921 (.137507)	.0814063 (.1395352)
Joint family	1.990557** (1.071291)	2.005468** (1.117486)	-	-	-.1985986 (.4920001)	-.213747 (.4964828)
First utilization by respondent	.090947 (.6533318)	.0967458 (.6643237)	-1.2696 (1.017601)	-1.329528* (1.023929)	.0601807 (.4397254)	-.0162923 (.4512514)
Working female before loan	-	-	1.221393 (.7345179)	1.139695* (.7361883)	.916322** (.4551581)	.9043046** (.4636261)
Institution * Treatment	-	-.0409544 (.8513935)		.3738453 (.7749223)		.3614845 (.3957059)
Number of observation	108	108	138	138	210	210
Pseudo R-Squared	0.5606	0.5606	0.6004	0.6030	0.4278	0.4344
Chi ² statistic	39.85	39.86	51.72	51.96	56.51	57.38
Log likelihood	-15.619403	-15.61824	-17.215362	-17.09	-37.786741	-37.3558

Note: Standard deviation are reported in the parenthesis.

Legend: *p<0.1, **p<0.05, ***p<0.01.

Table 15. Probit estimates of 'autonomy' in HH decisions.

Women do not require someone's permission to purchase.

Independent Variables	Buy book/uniform for children Probit Coefficients		Take a child to the doctor Probit Coefficients	
	1	2	1	2
Treatment Dummy	2.707719*** (.3390961)	2.610401*** (.3445857)	3.10547*** (.4932545)	3.05065*** (.4970416)
Age difference with husband	.0054019 (.0407997)	.0027847 (.041275)	.0645216** (.0305838)	.0616039*** (.030737)
Age of respondent	-.0224912 (.0189111)	-.0271778* (.0197658)	-.0226835** (.0117567)	-.024661*** (.0122359)
Education	.1147331* (.0721253)	.1171113* (.0740945)	-.0039802 (.047836)	-.0073489 (.0482003)
Number of Children	-.3599359** (.1589142)	-.3450348** (.160292)	-.204323* (.120631)	-.2054266* (.1207405)
Total Number of Family	.0123356 (.1188247)	-.0012755 (.1192028)	.1632068** (.0855471)	.1620142** (.0855726)
Joint family	-.2902694 (.4231463)	-.2763278 (.4269684)	-.658177** (.2890876)	-.655295** (.2889895)
Working female before loan	.4069385 (.3380096)	.3414988 (.3488377)	-.1273034 (.2293675)	-.1579291 (.2348914)
First Utilization by respondent	.323697 (.4426337)	.2759806 (.450684)	.3202585 (.2945874)	.2867698 (.2994533)
Institution * Treatment		.4209756 (.3372208)		.1523011 (.2441089)
Number of Observation	210	210	210	210
Pseudo R-Squared	0.5640	0.5718	0.3694	0.3708
Chi ² Statistic	113.69	115.27	100.22	100.61
Log likelihood	-43.943552	-43.15655	-85.542111	-85.348454

Note: Standard deviation are reported in the parenthesis.

Legend: *p<0.1, **p<0.05, ***p<0.01.

Table 16. Probit estimates of ‘autonomy’ in HH decisions.

Women do not require someone’s permission to purchase.

Independent Variables	Purchasing furniture Probit Coefficients		Purchasing Refrigerator Probit Coefficients		Sale/purchase of house Probit Coefficients	
	1	2	1	2	1	2
Treatment dummy	1.276058*** (.3728343)	1.262674*** (.3805836)	1.468339*** (.3694902)	1.292298*** (.3729415)	1.273136*** (.4959428)	1.254034** (.5039508)
Age difference with husband	.0159691 (.0245193)	.0154961 (.0246708)	.0394875* (.0245413)	.0345499** (.0247175)	.0617099** (.0266603)	.0611075** (.0268548)
Age of respondent	-.0241383** (.0101926)	-.0245161** (.0104288)	-.0145906* (.009858)	-.0204848** (.0102514)	-.0312598*** (.011359)	-.0317674 (.0116274)
Education	-.0717674* (.0430552)	-.0729312* (.0436238)	-.0440183 (.0416553)	-.0565351 (.0429273)	-.0409993 (.0475156)	-.0428883 (.0484402)
Number of children	-.0409577 (.1044849)	-.0414447 (.1045448)	-.1186643 (.1063834)	-.1287549 (.1085589)	.0395002 (.1253039)	.0385007 (.1254213)
Total number of family members	.0601365 (.0738185)	.0603377 (.0738011)	.0421463 (.0739552)	.0410728 (.0742837)	-.0212756 (.0911952)	-.0208168 (.0911098)
Joint family	-.5045276** (.2663727)	-.5059443** (.266778)	-.486174** (.2664397)	-.5000718* (.2724917)	-.2315827 (.3118705)	-.233122 (.3121901)
Working female before loan	.2888577* (.203113)	.2830305* (.2059657)	-.1495064 (.1994151)	-.2460779 (.206788)	.545337** (.2344412)	.5344986 (.2401131)
First utilization by respondent	.2511176 (.2812137)	.2411873 (.2867953)	.1480614 (.2673701)	.0040947 (.2718445)	-.3757383** (.2834774)	-.3896259 (.2911447)
Institution* treatment		.0373358 (.2166723)		.5467891*** (.2176714)		.0512541 (.2486347)
Number of observation	210	210	210	210	210	210
Pseudo R-Squared	0.1212	0.1213	0.1134	0.1377	0.1780	0.1782
Chi ² statistic	30.89	30.92	30.00	36.43	37.41	37.46
Log likelihood	-111.9	-111.9	-117.24015	-114.0	-86.377041	-86.355775

Note: Standard deviation are reported in the parenthesis.

Legend: *p<0.1, **p<0.05, ***p<0.01.

Table 17. Treatment effect estimates of women’s empowerment.

Propensity Score Matching Method

Women’s opinion taken into consideration in decision regarding:

Independent Variables	ATT (Nearest Matching) (1)	ATT (Kernel) (2)	ATT (Radius) (3)	NT	NC
Purchase grocery/fruits	-0.023	0.003*	-0.003	129	62
Purchase medicine for herself	-0.008	0.002*	-0.012	129	77
Purchase personal clothes/cosmetics	-0.008	-0.009	-0.035	129	62
Purchase book/uniform for children	0.000	-0.000	-0.045	129	77
Take a child to the doctor	0.000	0.022*	0.022*	129	77
Purchasing furniture	0.008*	0.058*	0.079*	129	77
Purchasing refrigerator	-0.008	0.088*	0.113*	129	77
Sale/purchase of house	0.023*	0.050*	0.089*	129	77

4.5.3 Empirical conclusions

The empirical result presented in the last section produced the following conclusion for our testable hypotheses:

Hypothesis 1: Impact of participation in microcredit program on preference-based indicators of women’s empowerment:

- a. Upon ‘say’ in child related decisions: reject the null hypothesis: microcredit has no effect on power coefficient ‘ θ_1 ’.
- b. Upon ‘say’ in health related decisions: reject the null hypothesis: microcredit has no effect on power coefficient ‘ θ_1 ’.
- c. Upon ‘say’ in economic decisions: reject the null hypothesis: microcredit has no effect on power coefficient ‘ θ_1 ’.
- d. Upon ‘say’ in social mobility decisions: reject the null hypothesis: microcredit has no effect on power coefficient ‘ θ_1 ’.
- e. Upon ‘say’ in sale or purchase of major household items decisions: Do not reject the null hypothesis: microcredit has no effect on power coefficient ‘ θ_1 ’.

Hypothesis 2: Impact of participation in microcredit program on autonomy-based indicators of women’s empowerment:

- a. Upon 'independence' in small personal purchase: Do not reject the null hypothesis: microcredit has effect on power coefficient ' θ_1 '.
- b. Upon 'independence' in child related decisions: Do not reject the null hypothesis: microcredit has effect on power coefficient ' θ_1 '.
- c. Upon 'independence' in purchasing household assets: Do not reject the null hypothesis: microcredit has effect on power coefficient ' θ_1 '.

4.5.4 Discussion of results

Our empirical findings suggested that microcredit intervention in the urban area of the Bandung City in Indonesia had impact on child related, health, economics, and social mobility decisions, except for 'purchase/sale major households' concerns. The results using proxy controls, and matching methods clearly demonstrated the robustness of the findings on the five dimensions of empowerment. However, the researchers were unable to find convincing evidence for the set of indicators relating to child related decisions. It seemed that women had more power concerning their daughter than their son, particularly on matters about child schooling and medical care.

The result under the maintained assumptions of 'selections on observables' were well aligned with the dynamics on the ground. The results suggested that women gained more 'say' on lesser order decisions regarding purchase/sale of household assets, while both the control and treatment groups enjoy the same level of participation in decisions relating to children, health, social mobility, and paid work.

With regard to patriarchy, the related indicators were favorable to women where a microcredit intervention will have marginal effects. In the framework of the 'perpetual dependency', the hypothesis addressed that women have reached a level of maturity in their relationship with their spouses. Women were given the bargaining power in these decisions commensurate with the prescribed gender norms of the society.

However, on decisions relating to major household decisions like purchase of assets, house repairs and sale/purchase of house, women do not have much 'say'. The unconditional mean values for those decisions revealed a value of about 2 on scale of 5 suggesting that female preference were rarely or never considered for these household decisions. It seemed reasonable that once women became more involved in economic and financial matters by borrowing money from an MFI, they enjoy greater confidence of their husbands. Hence, their participation increased in decisions which were initially within the domain of 'male only' decisions. The result from the ordered probit and matching estimators reinforced this finding that microcredit intervention empowered women by giving her more 'say' in decisions where she had limited or no participation before this intervention.

The results were consistent with autonomy-based indicators as reported in Table 14. These results also served as an informal check for the patriarchy framework proposed in this paper. Critics may have argued that if microcredit is not increasing women 'say' in the decision making process beyond a societal threshold level, it is still possible that they may have greater independence in making decisions. The results suggested that on the average women in the treatment group were more independent or autonomous than the control units, even when on decisions relating to small household purchases. This further reinforced the earlier findings that women reached a certain threshold level of independence within the structural norms of the society and microcredit had marginal effect on all such indicators.

CHAPTER 5.

CONCLUSION AND RECOMMENDATION

5.1 Conclusion

Empirically, the study sought to contribute the first econometric impact assessment of Islamic microfinance on women's empowerment in Indonesia. First, the results suggested that microcredit program proposed by the Islamic microfinance interventions influenced the bargaining power of women within the household for a broad range decision making concerns including child related, health, economic, and social mobility, except on 'purchase/sale major households'. Second, results suggested that Islamic microcredit interventions empowered women in the domains of household decisions; the least they were given a hand of to begin with. These included concerns relating to purchase of TV/Refrigerator, house repair, and 'sale/purchase of house'. These decisions generally fall within the domain of 'man-only' decisions in patriarchal societies.

The results showed that all testable estimators using ordered probit regression, simple probit regression, and propensity score matching were robust. Findings revealed that related concerns mentioned in the literature review regarding biased estimates of impact can be controlled through careful design and better understanding of ground dynamics and this methodology. Such proved and supported the previous methodological framework designed by Prof Asim in 2008. Therefore, the methodology can be applied to other researches.

5.2 Policy recommendation

The findings of this research shall interest policymakers and have implications for future research. First, the researchers are confident that the model of microcredit program proposed by the Islamic microfinance have significant effects on the different aspects of intra-households decisions. The well-designed program and with close assistance to its beneficiaries have significantly provided the enabling environment to empower women economically. All the estimators are robust across all econometric specification. Therefore, a policy recommended to support the *Zakah*, *infaq*, and *shadaqah* as resource fund for microcredit program under special specification and indicators.

This is a very important finding, as official *Zakah* management organization under government institution tends to be careful in utilizing *Zakah* fund as capital for economic empowerment. They tend to distribute this fund only for charity program without impact to empowering the poor toward economic independence. Gaining knowledge through training capacitates women to be more independent in making their own decision. The Mysikat program offers competent education programs for business as well as productive way of

life regarding women and their family. In this case, the study also found that the more educated women become when they joined a microfinance institution, the longer they stay. Thus, microfinance institutions should provide continuing education for women for empowerment, eventually contribute to poverty alleviation.

In addition, the result of this study provide that the gender specific approach for microcredit services is may be over rated in the context of urban people in Bandung. Future research with richer data sets could compare the results from this quasi-experimental framework with randomized intervention. Research in this direction will provide a good comparative analysis for the robustness of the estimates reported in this study.

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