
The role of Islamic micro-finance institutions in economic development in Indonesia: A comparative analytical empirical study on pre- and post-financing states

Nur Indah Riwijanti¹, Mehmet Asutay²

¹Accounting Study Program, State Polytechnics of Malang, Indonesia, E-mail: nurindah12@gmail.com

²Durham University, UK, E-mail: mehmet.asutay@durham.ac.uk

Abstract - Different institutions are engaged in the development efforts in Indonesia by appealing to different sectors of socio-economic life. Among such institutions, BMT (Baitul Maal wa Tamweel) and BPRS (Shariah People Credit Bank) are the main players of the shariah micro-finance institution in Indonesia.

However, these two institutions are different in nature: whereas BMT is a shariah cooperative with only limited support, regulation and monitoring, BPRS is a bank which receives sufficient support, regulation and monitoring from the Central Bank. It should be noted that these institutions overwhelmingly prevail in the urban and rural parts of Indonesia.

This study aims to explore and analyse the roles of BMT and BPRS in East Java's economic development within Indonesia, through reference to their micro-dynamics. Based on an informed understanding of the findings established in the empirical part of the study, strategies on how BMT and BPRS may improve their roles are also proposed.

For this study, primary data were collected from 348 completed questionnaires distributed to the clients of 21 BMT and BPRS branches in twelve towns/cities in East Java. The aim was to explore clients' perceptions of the impact on their socio-economic lives of receiving financing from the relevant institutions.

The findings are rather mixed: while the average annual value of sales, net income, business expenditure, household expenditure, and employment increased significantly following receipt of loans, clients' perceptions of the impact, however, ranges mainly from 'no impact' to 'some positive impacts'. Importantly, the findings also suggest that the financing has helped with a moderate decrease in poverty, there being a reduction in percentage of poor BPRS respondents under the national poverty line from 35.5% before financing to 23.1% after financing.

In order to improve their roles, it is suggested that BMT and BPRS should provide more social services to their clients; promote their financing products to a wider community; better train their customers to improve understanding of Islamic terms used in financing products; and be innovative in their financial product development in order to meet the particular needs of their clients. With such a proactive strategy, it is expected that a more positive impact could be achieved.

Keywords: Islamic micro-finance, BMT, BPRS, economic development

Cite this chapter as: Riwijanti N I, Asutay M (2015). The role of Islamic micro-finance institutions in economic development in Indonesia: A comparative analytical empirical study on pre- and post-financing states. In H A El-Karanshawy et al. (Eds.), Access to finance and human development – Essays on *zakah*, *awqaf* and microfinance. Doha, Qatar: Bloomsbury Qatar Foundation

1. Introduction

Islamic micro-finance has been developed to respond to the demands of less fortunate sectors of society and provides an opportunity to fulfil the aspirations of Islamic economics (social justice). It represents a good opportunity for the public in the lower strata of society to gain a valuable and alternative source of capital rather than relying on general commercial banks. It is expected that such a development will provide significant positive motivation for economic development through reducing poverty and unemployment among the younger generation as a result of enhancement of economic capacity and social capital, provided that it is accompanied by an entrepreneurial spirit with moral and Islamic values.

As a developing country, Indonesia has the world's fourth largest population of 241 million people in 2011 (Asian Development Bank 2012). Possessing a large population but without the corresponding wealth, Indonesia is facing an on-going socio-economic challenge, mainly in the form of poverty and unemployment. Statistics Indonesia measures poverty based on people's ability to meet their basic needs. Hence, people are considered 'poor' if they are economically unable to fulfil food and non-food basic needs, measured by consumption/expenditure per capita per month (Biro Pusat Statistik 2012b). In March 2012, the poverty line applied was defined as IDR 267,408 (equal to around US\$ 30) which, particularly in East Java, is IDR 245,305 (Biro Pusat Statistik 2012b). According to the statistics, the number of people living in poverty in March 2012 was 29.13 million, corresponding to 11.99% of the population. This was a decrease compared to the previous data from March 2011, when the figure was 30.02 million (12.49%) (Biro Pusat Statistik 2012b). While this decreasing trend might be regarded with some scepticism, these data are nevertheless similar to those of the Asian Development Bank (ADB), which reported that 18.1% of the population has been living on less than \$ 1.25 (purchasing power parity) a day and 12.5% of population were living below the national poverty line in 2011. Such measures become meaningful in comparison to other relevant variables; for example, the annual population growth in 2011 was 1.6%, GDP growth was 6.5%, the literacy rate according to 2008 data was 92.2% (which is considered very high, and 53.7% of the population was living in urban areas (in 2010). The ADB report also reveals that GDP growth has shown an increasing trend over the last three years, from 4.6% in 2009 to 6.2% in 2010 and 6.5% in 2011 (Asian Development Bank 2012). Overall, although the prevalence of a high level of poverty is a

reality, it should be noted that considerable achievements were made during 1970 and 1980, when the poverty level was reduced from 60% to 20% (World Bank 2001).

According to the February 2012 dataset, the level of unemployment was 6.32% (7.61 million people) (Biro Pusat Statistik 2012a). As regards human development in Indonesia, the UNDP ranked Indonesia 124th in terms of HDI in 2011 which, unfortunately, is lower than the rank in 2010, which was 108th. However, despite the adverse trend in the HDI ranking, it should be noted that the value increased from 0.600 in 2010 to 0.617 in 2011 (UNDP 2010; UNDP 2011). This indicates that other countries in the world have developed higher HDI values than has Indonesia. Moreover, the UNDP report in 2009 ranked Indonesia 111th in the HPI (Human Poverty Index); this ranking was no longer provided in HDR 2010 and 2011 (UNDP 2009).

In responding to economic challenges, including poverty and human development, it should be noted that Indonesia does have a large number of microenterprises (MEs), which form a strong pillar of the national economy as they account for more than 98% of total enterprises (see Table 1).

In 2008, statistics showed that microenterprises (MEs) accounted for 98% of the total number of enterprises – which is considered very high – contributing around 32% of the total GDP, and absorbing the highest number of employees (89.3% of the total labour force); however, their export value was the lowest (Table 1).

However, despite the significant role of MEs in micro-development and their impact on the macro-economy and other such important contributions, there are still barriers to accessing finance, which can hinder the growth of BMT and BPRS on the periphery. Hence, a study focusing on the role that BMT and BPRS can play in developing MEs and in alleviating poverty in Indonesia could enable a better understanding of development dynamics in Indonesia, and of the importance of faith (Islamic) constructed around such institutions in this process. It should be noted that these two types of institutions are chosen as the subjects of this research because they are popular among the Muslim population; thus, it is essential to examine the role of BMT and BPRS in providing services to MEs in order to determine their impact on economic development. This study also considers the effectiveness of BMT and BPRS through exploring the impact their financing. Moreover, it aims to identify the potential role of BMT and BPRS in alleviating poverty in Indonesia.

Table 1. Profile of Small Medium Enterprises (SMEs) in Indonesia.

Criteria	Number		GDP	Labour		Export
Micro	50,697,659	98.9%	1,505,308	83,647,771	89.3%	20,247
Small	520,221	1.1%	473,267	3,992,371	4.26%	44,148
Medium	39,657	0.08%	630,784	3,256,188	3.34%	119,363
Large	4,372	0.01%	2,087,121	2,776,214	2.96%	727,169
	51,261,909		4,696,480			910,927

Source: Biro Pusat Statistik (2008).

2. Research questions

This paper aims to explore the economic development role of BMT and BPRS in East Java, as the second largest province in Indonesia, in order to propose strategies for improvement of this role. The research questions of this study are:

1. What are the roles of BMT and BPRS in economic development, particularly in improving microenterprises which involve improvement of sales, business expenditures, net income, household expenditure, assets, economic activities and employment?
2. What are the roles of BMT and BPRS in the alleviation of poverty?
3. Which institution has the better performance in economic development and poverty alleviation?

3. Literature review

BMT and BPRS: The main Islamic micro-finance institutions in Indonesia

BMT is a micro-financial institution operated under the Shariah principles, which aims to provide micro-financing to micro- and small enterprises; there are many such enterprises in Indonesia but they have difficulty in accessing finance. As institutions under the Ministry of Cooperatives and SMEs, some of them come under the label of KJKS (Koperasi Jasa Keuangan Syariah/Shariah Financial Cooperative) rather than BMT. The initiative for establishing BMT is usually provided by educated persons or local community leaders, who are concerned with the development of local communities through providing financial access to the poor and to micro- and small enterprises (Ascarya et al. 2007). As such, they are likely to be similar to self-help groups with minimal support from the government.

On the other hand, the establishment of BPRS was supported by Act No 7/1992 on Banking as revised by Act No 10/1998. It is defined as a bank conducting banking/business activities based on Shariah principles (Banking Act No. 10/1998 1998). Article One of this Act defines a Shariah principle as an agreement based on Shariah law between a bank and other parties in funding and/or financing business activities or other activities in accordance with Shariah, such as those financial instruments based on the profit-loss sharing (PLS) principle (mudharabah), those based on equity financing capital through musharakah based on the selling principle (murabaha), or financing capital goods on the basis of a pure lease option (ijarah), or with option of removal of ownership of the leased items from the bank by another party (ijara wa istisna). It should be noted that this micro-banking operates in specific local areas (district/kecamatan) providing micro-financing, savings and other related financial products to local communities under Bank Indonesia's supervision and regulation, as identified in Act No 10/1998, Article 29.

As 'a community-based financial institution' which helps SMEs through training and social development programmes, the character of BMT is unique compared to that of BPRS; BMT is not just a financial institution – it is

Table 2. Development of BMT and BPRS.

Micro-finance Institutions	2000	2005	2010	2011	2012
BPRS	78	92	150	155	155
Branch Offices			286	364	389
BMT	2,938	3,101	5,200	5,500	N/A

Sources: Bank Indonesia (2012), Seibel (2008), Pinbuk (2005), Sakti (2011)

also a social enterprise for two reasons (Sakai and Marijan 2008):

1. BMT started as a cooperative; thus, it has a cooperative nature with the advantage of providing a more flexible and faster financing approval process than banks.
2. BMT offers entrepreneurial skills and the promotion of Islamic values in a practical way.

The survey by Bank Indonesia (2011) also confirms that BMT is a community-based institution. Out of a total of 386 BMT respondents in the three provinces of Java (West, Central and East Java), 62.72% of the BMT were established by community-initiated projects based on community organisations, Islamic boarding schools, mosques or professional associations; a further 12.11% were established by cooperatives, 12% by individual persons, and others by Islamic Banks (Sakti 2011). This indicates a high awareness in society of the development and empowerment of microenterprises through the development of Islamic micro-finance institutions.

Considering the development of BMT and BPRS, it can be seen from Table 2 that the number of BMTs is much higher than the branches of BPRS. However, it should be noted that the size of BPRS in terms of value of assets, total number of borrowers, scope of operation, etc is generally higher than for BMT.

Role of IsMFIs in economic development

Provision of financial access to poor people will enable them to increase their income and economic well-being, develop assets and reduce weaknesses; lack of access to financial support seems to be the main reason for the inability of the poor to become involved in development (Obaidullah 2008b).

The performance of Islamic micro-finance has been quite promising. Obaidullah (2008a) argues that the performance of RDS (Rural Development Scheme) of IBBL was better in terms of growth (12.5%), drop-out rate (5%), and operational efficiency compared to three conventional leaders in micro-finance, namely Grameen Bank, ASA (Association for Social Advancement), and BRAC (Bangladesh Rural Advancement Committee). Charging a lower rate of return (10% with 2.5% rebate for on-time payments) than other micro-finance (16–22.5% interest) offers an advantage to the poor (Obaidullah 2008a). This type of micro-finance also provides an active spiritual

development programme with the purpose of improving members' awareness of social rights and responsibilities in order to forge better relationships with others (Obaidullah 2008a); such a programme has not been provided by conventional micro-finance.

The impacts of Islamic micro-finance can be discussed on both an economic and social basis, this paper focusing only on the former. In general, it is expected that provision of financial access to poor people will enable them to increase their income and improve their economic well-being, develop assets, reduce weaknesses, and become involved in development (Obaidullah 2008b). The latest economic impact presented by an empirical study of IBBL's (Islamic Bank Bangladesh Limited) impact on rural poverty finds that loans had a considerable effect in improving household earnings, output of harvest and cattle, disbursement and employment (Rahman and Ahmad 2010). In particular, based on a field survey of 1,024 respondents, Rahman (2010) finds that the family income increased by more than 33%, health expenditure increased by 50%, family employment increased from 1.91 to 2.1 working members, and all types of assets also increased. Moreover, the impressive economic impact can be seen in Ahmed's study of three IsMFIs in Bangladesh, as he finds an increasing amount of time spent on productive activities by beneficiaries and other family members, increased output from economic activity, particularly in improving the amount of goods/services, innovation of new products, and increasing assets and other properties (Ahmed 2002). These economic aspects might imply that Islamic micro-finance has an advantage to offer, although it still has weaknesses to overcome.

By way of empirical evidence, a recent study by Khandker et al. (2013) revealed that improved access to financing, particularly through MFIs, could contribute to the development of MEs and reduce poverty in Bangladesh. Based on a large amount of national data, the empirical findings confirm that households with additional income from MEs have much better living conditions than households without MEs, since MEs "... could raise income additionally by 6%, consumption by 5% and reduce moderate poverty by 2% and extreme poverty by 4% per year" (Khandker et al. 2013). In addition, the most recent study on the economic impact of MEs in Thailand suggests that IsMFIs has contributed positively to increase customers' welfare (Naipom 2013). In particular relation to the economic impact of micro-financing, Naipom (2013) argues that gender, annual household income, age, total land size, membership length and occupation are contributory impact factors.

Roles of Baitul Maal wa Tamweel (BMT) and BPRS in economic development

Islamic micro-finance plays a significant role in promoting microenterprises. A study of the Islamic Banking industry in Indonesia found that it has both a positive effect – based on financial measures, sales improvement, and accumulation of working capital – and an ability to improve the tough synergy with a national programme for development of small enterprises and microenterprises (Antonio 2004). In addition, it is capable of filling the gap between the poverty

alleviation approach and commercially-based methods of micro-finance (Antonio 2004).

However, Siebel presents a different view, noting that Islamic micro-finance in Indonesia has low assets compared to conventional banking, due to the lack of regulatory and supervisory aspects in Islamic values (Seibel 2005). The two options he proposes are:

1. To focus completely on Islamic commercial banks and the "establishment of branch networks with Islamic micro-finance products"; and
2. "[T]o reassess the challenges and realistic opportunities for Islamic rural banks and cooperatives" (Seibe, 2005).

Although true for this specific area of research, this finding could not be generalised to all areas of Indonesia. As Obaidullah (2008a) maintains, the BMT in Indonesia represents a success story in the linkage programme between a group of microenterprises, BMT and Islamic banks. Given its ability to cooperate with the poor in the surrounding area, BMT seems to be the most suitable institution to serve the poor (Ascarya and Sanrego 2007).

Some studies indicate a good performance by and prospects for BMT. Based on a survey of three BMTs under the Peramu Foundation, Bogor, Indonesia, Widyaningrum (2002) found that they make a positive contribution in improving customers' assets, turnover, net income, return on assets (ROA), and productivity. In addition, a study analysing the sustainability of BMT in developing microenterprises using data envelopment analyses established that the efficiency level of BMT is relatively low; BMT operates below the optimal scale and have managerial problems (Chokro and Ismail 2008). Ismail and Chondro (2008) conclude that "[a]lthough the profitability efficiency of BMT is relatively low, since generally BMT have made a profit and social benefit, Islamic financing can be predicted to be sustainable – able to provide viable Islamic financing".

Considering the contribution to BMT customers, Sakai (2008) argues that BMTs have developed financing services, despite the limited start-up capital, and are able to provide financial resources to microenterprises as an alternative to money lenders. New economic prospects are brighter for the poor community as BMT facilitates their business (Sakai 2008). Sakai also conducted a study over three consecutive years (2006, 2007, 2008) on how BMT services enhance microenterprises among women in Central Java; the study revealed that BMT contributes to improve women's economic independence by providing them with access to financial services (Sakai 2010). Further, he also points out that despite the lack of government support BMT have developed well with the support of Muslim economic activists. Hence, as indicated by empirical evidence, BMT have the potential to develop provided they can overcome the observed operational problems and undergo "financial and legal reform". In this complex situation, some BMT are well developed but some of them have faced failure and even bankruptcy.

A study by Adnan et al. (2003) found that with regard to the future of BMT, the respondents consider that BMT have 'high potential' (50%) and 'potential' (50%). Concerning

the social services provided to customers, the responses show that 87% of 47 BMT provide such services (Adnan et al. 2003). This should be considered an additional benefit to the social capital created by BMT. Therefore, Adnan et al. (2003) concluded that BMT are institutions with the potential to provide financial services to the poor and offer a positive contribution to the national economy, which is evidenced by their resilience in surviving during the economic crisis in 1997. However, BMT still need support and assistance, particularly on legal issues.

With particular regard to the impact of BMT on the poor, the research findings of Ajija and Adnan (2011) concerning the poor customers of BMT MMU in East Java show that BMT have a significant impact on improving household income by around 50%, from IDR 1,097,700 before financing to IDR 1,669,100 after financing. This resulted in poverty reduction, as measured by three indices including head count index (HC), which showed that the number of people below the poverty line fell from 0.52 to 0.30; poverty gap (PG) which measured the extent of poverty, and fell from 0.24 to 0.11; and the Sen Index, which calculated the harshness of poverty, this falling from 0.187 to 0.079 (Ajija and Adnan 2011).

Another research survey of 100 members of the biggest Islamic cooperative in Central Java, Kospin Jasa Syariah (Koperasi Simpan Pinjam/Credit Union Syariah Services) also reveals the effectiveness of the financing procedure and its impact on micro- and small enterprises in improving income levels (Beik and Purnamasari 2011). In this research, the effectiveness of financing is measured based on the following steps: application; fund disbursement; repayment; and the effect of financing. The customers reported high scores which indicate the straightforward procedure and rapid disbursement of funds, and, although the repayment period is reported to be too short (less than 1.5 years), the impact is considered positive and effective (Beik and Purnamasari 2011). Moreover, the results also show that the amount of proposed financing is affected positively (76%) by the cost of financing and borrowers' education levels (Beik and Purnamasari 2011). Further analysis of the impact of financing shows that the daily income level after financing is positively affected (81%) by daily business profit, monthly consumption and proposed financing application (Beik and Purnamasari 2011). The findings are likely to provide better information if the variable used in the model is the amount of approved financing, rather than the proposed financing, since there is a possibility that the proposed funds will not be the same as the approved financing. Besides, analysis shows that another impact of BMT financing is its ability to significantly improve borrowers' average sales by IDR 1,427,769, and average monthly income by IDR 472,328 (Amalia 2008).

Similar to the above positive findings, Hamada (2010) argues that the impact can be varied, based on secondary data from 1,104 BPRS (people's credit banks/village banks) in Indonesia; he found that bank loans received by those BPRS contribute to expanding the provision of credit to clients, and that this contribution is even larger when the loans are gathered through linkage programmes (Hamada 2010). However, another study on micro-finance in Indonesia based on a survey of 100 participants reveals

that there is no immediate impact on poverty alleviation through the provision of microcredit because, apart from sales of non-farm enterprises for the non-poor and schooling expenditures, the effect on household outcome is not significant (Takahashi 2010). In addition, although the policy of requiring collateral in order to provide loans has been eased, it benefits the non-poor rather than the poor, which means that the outreach may be questionable.

4. Research methodology

This study adopts an exploratory, descriptive, survey and case study-oriented research design in relation to BMT and BPRS in East Java, Indonesia. The method of data collection involves quantitative data collection based on purposive sampling through questionnaires distributed to MEs that borrow from BMT and BPRS. The purpose of the questionnaires is to find out how respondents perceive the impact of financing on their businesses. Therefore, the criteria for selecting respondents were that they:

- Received financing from BMT/BPRS.
- Had a business, whether as main source of income or non-main source of income.
- Used the funds for productive purposes to improve their microenterprise.

The quantitative data obtained from 348 completed questionnaires are analysed with the use of statistical tests including:

1. Descriptive analysis to test the changes of poor respondents from before to after financing, applied separately for BMT and BPRS respondents.
2. Wilcoxon Signed Rank Test to test whether there is a change from before to after financing in the value of annual sales, net income, business expenditure, household expenditure and number of workers; this test was applied to total respondents, and specific subgroups of BMT respondents and BPRS respondents in order to obtain a more detailed insight on the impact on each institution.
3. Mann-Whitney U-Test to explore statistically significant differences among subgroups in type of micro-financing sources and the impact on assets, on economic activities, on monthly business expenditures, and on monthly household expenditures.

5. Research findings and analysis

Impact on sales

The impact on sales was analysed based on the Wilcoxon Signed Rank Test to investigate whether there was a change in the value of annual sales following financing (Table 3). The test was applied to total respondents, and specific subgroups of BMT and BPRS respondents, in order to obtain a detailed insight into the impact on each institution. The annual sales of total respondents were found to be significantly higher after financing (median = IDR 120,000,000) than the annual sales before financing (median = IDR 84,000,000), at significance level of $p = .000$, which is lower than the confidence level of $p = 0.05$. The annual sales of BMT respondents were also significantly higher

Table 3. Wilcoxon signed rank test: Impact on annual sales.

Variable		N	Median Rank	Z	Asymp. Sig. (p)	Effect size
Total respondents	Before financing	348	84,000,000	-10.841	0.000	-0.031
	After financing	348	120,000,000			
	Increase		36,000,000			
BMT respondents	Before financing	179	72,000,000	-8.097	0.000	-0.045
	After financing	179	108,000,000			
	Increase		36,000,000			
BPRS respondents	Before financing	169	108,000,000	-7.432	0.000	-0.044
	After financing	169	132,000,000			
	Increase		24,000,000			

after financing (median = IDR 108,000,000) than annual sales before financing (median = IDR 72,000,000), at a significance level of $p = 0.000$. The BPRS respondents also had improved annual sales after financing (median = IDR 132,000,000) compared to before financing (median = IDR 108,000,000), at the significance value of $p = 0.000$. Based on the improvement of median rank, the BMT respondents performed better than the BPRS respondents, the improvements being IDR 36,000,000 and IDR 24,000,000 respectively.

Impact on net income

Impact on net income was analysed based on Wilcoxon Signed Rank Test to investigate whether there was a change in the value of annual net income following financing (Table 4). The results show that annual net income of total respondents was significantly higher after financing (median = IDR 27,000,000) than annual net income before financing (median = IDR 18,000,000), at a significance level of $p = 0.000$, which is lower than the confidence level of $p = 0.05$. The annual net income of BMT respondents was also significantly higher after financing (median = IDR 18,000,000) than before financing (median = IDR 15,700,000) at a significance level of $p = 0.000$. Similarly, the annual net income of BPRS respondents was also significantly higher after financing (median = IDR 36,000,000) than before financing (median = IDR 24,000,000) at a significance level of $p = 0.000$. The improvement of annual net income for BPRS respondents

(IDR 12,000,000) was around three times higher than for the BMT respondents (IDR 3,300,000).

Impact on businesses expenditures

The impact on business expenditures was analysed based on two tests:

1. The Wilcoxon Signed Rank Test was used to investigate whether there was a difference in the value of annual business expenditure from before financing to after financing (Table 5).
2. The Mann-Whitney U-test was employed to explore statistically significant differences among subgroups in type of micro-financing sources, and impact on monthly business expenditure after financing (Table 6).

The results of the Wilcoxon Signed Rank Test showed that annual business expenditure was significantly higher after financing (median = IDR 84,000,000) than the annual business expenditure before financing (median = IDR 60,000,000), at a significance level of $p = 0.000$, which is lower than the confidence level of $p = 0.05$. Similarly, the annual business expenditure of BMT respondents was significantly higher after financing (median = IDR 72,000,000) than the annual business expenditure before financing (median = IDR 48,000,000), at a significance level of $p = 0.000$. The annual business expenditure of BPRS respondents was significantly higher after financing (median = IDR 97,000,000) than the annual business expenditure before financing (median = IDR

Table 4. Wilcoxon signed rank test: Impact on annual net income.

Variable		N	Median Rank	Z	Asymp. Sig. (p)	Effect size
Total respondents	Before financing	347	18,000,000	-10.661	.000	-0.031
	After financing	348	27,000,000			
	Increase		9,000,000			
BMT respondents	Before financing	178	14,700,000	-8.042	.000	-0.045
	After financing	179	18,000,000			
	Increase		3,300,000			
BPRS respondents	Before financing	169	24,000,000	-7.235	.000	-0.044
	After financing	169	36,000,000			
	Increase		12,000,000			

Table 5. Wilcoxon signed rank test: Impact on annual business expenditure.

Variable		N	Median Rank	Z	Asymp. Sig. (p)	Effect size
Total Respondents	Before financing	347	60,000,000			
	After financing	347	84,000,000	-11.328	.000	-0.608
	Increase		24,000,000			
BMT Respondents	Before financing	179	48,000,000			
	After financing	179	72,000,000	-8.315	.000	-0.621
	Increase		24,000,000			
BPRS Respondents	Before financing	168	72,000,000			
	After financing	168	97,800,000	-7.865	.000	-0.607
	Increase		25,800,000			

Table 6. Mann-Whitney U-test: Impact on monthly business expenditure after financing.

Variable	Subgroup	N	Mean Rank	Z	Asymp. Sig. (p)	Effect size
Tools/minor equipment	Type of financing sources					
	BMT	179	170.28	-.976	.329	-0.052
	BPRS	169	178.97			
	Total	348				
Stocks (eg. shop stock, raw materials)	Type of financing sources					
	BMT	178	156.97	-3.577	.000	-0.192
	BPRS	169	191.94			
	Total	347				
Rent (per year)	Type of financing sources					
	BMT	178	173.75	-.101	.920	-0.005
	BPRS	169	174.26			
	Total	347				
Utilities	Type of financing sources					
	BMT	178	162.57	-2.658	.008	-0.143
	BPRS	169	186.04			
	Total	347				
Transport	Type of financing sources					
	BMT	178	166.25	-1.954	.051	-0.105
	BPRS	169	182.16			
	Total	347				
Wages	Type of financing sources					
	BMT	178	169.64	-1.301	.193	-0.070
	BPRS	169	178.59			
	Total	347				
Financing repayment	Type of financing sources					
	BMT	178	187.75	-3.358	.001	-0.180
	BPRS	169	159.52			
	Total	347				

72,000,000), at a significance level of $p = 0.000$. In this case, the respondents from both institutions showed a similar level of improvement, although the BPRS respondents performed slightly better (IDR 25,800,000) than the BMT respondents (IDR 24,000,000).

The descriptive analysis (unreported) revealed that a large majority of the respondents reported 'no impact' on monthly business expenditure. The ranking of the

'no effect' responses are as follows: rent (91.9%), wages (83.9%), transport (74.9%), loan repayment (72.6%), utilities (67.1%), tools/minor equipment (66.7%), stock (37.2%). The ranking of 'positive impacts' is as follows: stock (60.6%), tools/minor equipment (33%), utilities (32.3%), and loan repayment (25.7%).

Based on the critical confidence level of $p = 0.05$, the findings suggest statistically significant differences among

Table 7. Wilcoxon signed rank test: Impact on annual household expenditure.

Variable		N	Median Rank	Z	Asymp. Sig. (p)	Effect size
Total respondents	Before financing	347	12,000,000			
	After financing	348	16,800,000	-9.520	.000	-0.511
	Increase		4,800,000			
BMT respondents	Before financing	178	12,000,000			
	After financing	179	14,400,000	-6.197	.000	-0.464
	Increase		2,200,000			
BPRS respondents	Before financing	169	12,000,000			
	After financing	169	18,000,000	-7.308	.000	-0.562
	Increase		6,000,000			

subgroups of the two types of financing institutions and the following monthly business expenses: stock ($p = 0.000$), utilities ($p = 0.008$), transport, and financing repayment ($p = 0.001$). However, there were no significant differences among subgroups of the two types of financing institution in terms of the variables of tools/minor equipment, rent, and wages. The subgroups with higher mean ranks indicate least impact on business expenditure. Overall, the subgroup reported to have least effect were BPRS respondents, except in financing repayment.

Impact on household expenditure

The impact on household expenditures was similarly analyzed based on two tests:

1. The Wilcoxon Signed Rank Test was used to investigate whether there is a change in the value of annual household expenditure following financing (Table 7).
2. The Mann-Whitney U-test was employed to explore statistically significant differences between subgroups in

Table 8. Mann-Whitney U-test: Impact on monthly household expenditure after financing.

Variable	Subgroup	N	Mean Rank	Z	Asymp. Sig. (p)	Effect size
Food	Type of financing sources					
	BMT	177	171.23			
	BPRS	169	175.88	-0.527	.598	-0.028
	Total	346				
Health/ Medical	Type of financing sources					
	BMT	178	169.30			
	BPRS	169	178.95	-1.375	.169	-0.074
	Total	347				
Education	Type of financing sources					
	BMT	177	169.67			
	BPRS	168	176.51	-0.796	.426	-0.043
	Total	345				
Clothing	Type of financing sources					
	BMT	178	169.58			
	BPRS	169	178.66	-1.152	.249	-0.062
	Total	347				
Transport	Type of financing sources					
	BMT	178	166.51			
	BPRS	169	181.89	-2.007	.045	-0.108
	Total	347				
Household utensils	Type of financing sources					
	BMT	179	168.78			
	BPRS	169	180.56	-1.375	.169	-0.074
	Total	348				
Furniture/ electronics purchases (per year)	Type of financing sources					
	BMT	178	164.22			
	BPRS	169	184.30	-2.527	.011	-0.136
	Total	347				

type of micro-financing sources and impact on monthly household expenditure after financing (Table 8).

The results of the Wilcoxon Signed Rank Test show annual household expenditure of total respondents was significantly higher after financing (median = IDR 16,800,000) than annual household expenditure before financing (median = IDR 12,000,000), at a significance level of $p = 0.000$, which is lower than the confidence level of $p = 0.05$. Similarly, the annual household expenditure of BMT respondents was significantly higher after financing (median = IDR 14,400,000) than annual household expenditure before financing (median = IDR 12,000,000), at a significance level of $p = 0.000$. The annual household expenditure of BPRS respondents was also significantly higher after financing (median = IDR 18,000,000) than annual household expenditure before financing (median = IDR 12,000,000), at a significance level of $p = 0.000$. By comparison, the improvement shown by the BPRS respondents (IDR 6,000,000) was more than double that of the BMT respondents (IDR 2,200,000).

The descriptive analysis (unreported) shows that the majority of the respondents reported 'no effect' on monthly household expenditures, according to the following ranking: health (83%), transport (78.7%), clothing (76.9%), furniture (76.4%), household utensils (70.4%), education (69.9%), and food (67.3%). However, several respondents reported a positive impact on household expenditure, the ranking being as follows: food (29.7%), household utensils (29.3%), education (28.7%), furniture (23.4%), clothing (22.2%), transport (20.7%), and health (16.5%).

Table 8 shows the statistically significant difference among subgroups of type of financing institution in transport expenditures ($p = 0.045$) and furniture/electrical purchase per year ($p = 0.011$). No statistically significant differences were found in household expenditures of food ($p = 0.598$), health/medical ($p = 0.169$), education ($p = 0.426$), clothing ($p = 0.249$), and household utensils ($p = 0.169$). The higher mean ranks indicate the least effect; in general, BPRS respondents had the least effect.

Table 9. Mann-Whitney U-test: Impact on assets after financing.

Variable	Subgroup	N	Mean Rank	Z	Asymp. Sig. (p)	Effect size
Land/ agriculture	Type of financing sources					
	BMT	177	167.54	-1.843	.065	-0.099
	BPRS	169	179.74			
Total	346					
Building	Type of financing sources					
	BMT	176	163.15	-2.493	.013	-0.134
	BPRS	169	183.25			
Total	345					
Private cars/ Motorcycles	Type of financing sources					
	BMT	178	157.91	-3.904	.000	-0.210
	BPRS	169	190.95			
Total	347					
Cattle	Type of financing sources					
	BMT	178	167.22	-2.542	.011	-0.137
	BPRS	168	180.15			
Total	346					
Productive assets	Type of financing sources					
	BMT	177	141.84	-6.360	.000	-0.343
	BPRS	167	204.99			
Total	344					
Electric goods	Type of financing sources					
	BMT	177	159.26	-3.281	.001	-0.177
	BPRS	168	187.48			
Total	345					
Jewellery (gold)	Type of financing sources					
	BMT	177	163.85	-2.895	.004	-0.156
	BPRS	167	181.66			
Total	344					
Savings	Type of financing sources					
	BMT	177	176.63	-.989	.323	-0.053
	BPRS	167	168.12			
Total	344					

Impact on assets

Based on the findings of the descriptive analysis (unreported), a large majority of the respondents reported 'no effect' on impact on assets after financing, the rankings being as follows: cattle (91.9%), gold jewellery (87.5%), land/agricultural (85.3%), building (75.4%), private cars/motorcycle (71.8%), savings (69.8%), electronic goods (69.6%). However, a positive impact was also reported by respondents with the following rankings: productive assets (59.9%), electric goods (29.8%), savings (28.8%), private cars/motorcycles (27.1%), building (24.4%), land (13.8%), gold jeweller (11.7%), and cattle (7.8%). Based on the Mann-Whitney U-Test and a confidence level of $p=0.05$, statistically significant differences were found in almost all variables: building ($p=0.013$), 'private car/motorcycles' ($p=0.000$), cattle ($p=0.011$), productive assets ($p=0.000$), electronic goods ($p=0.001$), jewellery ($p=0.004$); but not for land and building' ($p=0.065$) and savings ($p=0.323$) (Table 9). Overall, the subgroups with higher mean ranks, which indicate least effect, were BPRS respondents.

Impact on economic activities

As found in the descriptive analysis (not presented), the rank of activities with highest positive impacts reported by the respondents were volume of goods/services (72.7%), quality of goods/services (49.4%), diversification into new goods/services (37.1%), premises (21.6%), production technology (11.9%), and bookkeeping (9.5%). The purpose of the Mann-Whitney U-Test is to explore significant

differences between subgroups of type of micro-financing source and the impact on particular aspects on economic activities. The findings show statistically significant differences in volume of goods/services ($p=0.007$), quality of goods/services ($p=0.000$), production technology ($p=0.023$) and premises ($p=0.000$) (Table 10). However, no significant differences were found in diversification into new goods/services ($p=0.319$) and bookkeeping ($p=0.500$). In this section, the higher mean ranks imply a higher impact, which are generally held by BPRS respondents (see Table 10).

Impact on employment

To investigate further the impact on employment, the Wilcoxon Signed Rank Test was employed in order to establish whether there is a change in the number of male workers, female workers and total workers following financing (Table 11). The results of the Wilcoxon Signed Rank Test show that there were significantly more male workers after financing (mean = 1.66) than before financing (mean = 1.25), at the significance level of $p=0.000$, which is lower than the confidence level of $p=0.05$. The number of female workers was also higher after financing (mean = 1.37) than before financing (mean = 1.22), at a significance level of $p=0.000$. In total, the number of workers after loan financing (mean = 3.03) was higher than before financing (mean = 2.46).

Further analysis of the comparison between BMT and BPRS shows that the improvement in total number of workers for

Table 10. Mann-Whitney U-test: Impact on economic activities after financing.

Variable	Subgroup	N	Mean Rank	Z	Asymp. Sig. (p)	Effect size
Volume of goods/services sold	Type of financing sources					
	BMT	179	160.98	-2.698	.007	-0.145
	BPRS	169	188.82			
Total	348					
Quality of goods/services	Type of financing sources					
	BMT	179	147.58	-5.576	.000	-0.299
	BPRS	169	203.02			
Total	348					
Diversification into new goods/services	Type of financing sources					
	BMT	177	168.98	-.996	.319	-0.054
	BPRS	169	178.23			
Total	346					
Production technology	Type of financing sources					
	BMT	178	167.15	-2.281	.023	-0.122
	BPRS	169	181.21			
Total	347					
Bookkeeping	Type of financing sources					
	BMT	178	171.66	-.674	.500	-0.036
	BPRS	168	175.45			
Total	346					
Premises	Type of financing sources					
	BMT	179	159.88	-3.886	.000	-0.208
	BPRS	169	189.99			
Total	348					

Table 11. Wilcoxon signed rank test: Impact on number of workers.

Variable			N	Mean Rank ^a	Z	Asymp. Sig. (p)	Effect size
Total respondents	Male workers	Before financing	348	1.25	-5.568	.000	-0.016
		After financing	348	1.66			
		Increase		0.41			
	Female workers	Before financing	348	1.22	-4.666	.000	-0.013
		After financing	348	1.37			
		Increase		0.15			
	Total workers	Before financing	348	2.46	-6.258	.000	-0.018
		After financing	348	3.03			
		Increase		0.57			
BMT respondents	Male workers	Before financing	179	1.00	-4.457	.000	-0.025
		After financing	179	1.36			
		Increase		0.36			
	Female workers	Before financing	179	1.09	-4.146	.000	-0.023
		After financing	179	1.28			
		Increase		0.19			
	Total workers	Before financing	179	2.09	-5.599	.000	-0.031
		After financing	179	2.64			
		Increase		0.55			
BPRS respondents	Male workers	Before financing	169	1.51	-3.476	.001	-0.021
		After financing	169	1.98			
		Increase		0.47			
	Female workers	Before financing	169	1.34	-2.478	.013	-0.015
		After financing	169	1.46			
		Increase		0.12			
	Total workers	Before financing	169	2.85	-3.365	.001	-0.020
		After financing	169	3.44			
		Increase		0.59			

^aMean rank used instead of median rank in order to show the improvement in more detail.

the BPRS customer was slightly higher (mean = 0.59) than for BMT respondents (mean = 0.55). However, the BMT respondents seem to have had more improvement in terms of the number of female workers (mean = 0.019) compared with BPRS respondents (mean = 0.012).

The role of BMT and BPRS in poverty alleviation

The role in poverty alleviation is measured based on the Head Count Index, which measures the number of respondents living below the international and national poverty line, divided by the total respondents of each institution. The international poverty line was US\$ 2/person/day, for which the average exchange rate data from Bank Indonesia for mid-August to mid-November was US\$ 1 = IDR 8.794; therefore, US\$ 2/person/day was equivalent to IDR 17,589/day/person, or IDR 527,660/month/person. In March 2012, Statistics Indonesia set up East Java's poverty line at IDR 245,035/person/month (Biro Pusat Statistik 2012b). Based on these two standards, a comparative analysis before and after financing for each type of institution was conducted, as presented in Table 12 and Table 13. As the national poverty line is set up based on individual household expenditure, the computed process is conducted by multiplying for each respondent the total number of family members at the poverty line as baseline judgment, whether the respondent is living below or above the poverty line.

As can be seen in Tables 12 and 13, the number of poor respondents of both BMT and BPRS decreased after financing, but by differing percentages. Before financing, the percentage of BMT respondents living under the international poverty line was 85.4%, this reducing by only 1% to 84.4% after financing. Under the Statistics Indonesia poverty line, 44.4% of the respondents were living under the poverty line before financing, this reducing to 36.3% after financing (8% reduction). It should be noted that the minimum household expenditure improved after financing compared with before financing.

Table 13 shows that the percentage of BPRS respondents under the international poverty line was 82.2% before financing, and reduced to 72.2% after financing; this 10% reduction was greater than that for the BMT respondents. In addition, based on the Indonesian' poverty line, there was 35.5% of respondents under the poverty line before financing, which reduced to 23.1% after financing (12.4% reduction).

6. Discussion

Impact on sales

With regards to the impact on sales, the findings show a significant improvement of annual sales (almost 50% higher) following financing (Table 3). This indicates a positive role of BMT and BPRS financing in improving sales.

Table 12. Number of BMT respondents with household expenditure under the poverty line.

		Frequency	Percent	Mean	Standard Deviation
International Poverty Line of US\$ 2/day = IDR 17,589/day/person (IDR 527,660/month/person)					
Monthly Household Expenditure (before loan)	Below poverty line	152	85.4		
	Above poverty line	28	14.6		
	Total	178	100	-872,832.24	1,071,870.56
	Minimum	-4,148,940			
	Maximum	3,361,700			
Monthly Household Expenditure (after loan)	Below poverty line	151	84.4		
	Above poverty line	28	15.6		
	Total	179	100	-748,741.78	1,075,823
	Minimum	-3,848,940			
	Maximum	3,361,700			
Indonesia National (East Java) Poverty Line of IDR 245,035 /month/person					
Monthly Household Expenditure (before financing)	Below poverty line	79	44.4		
	Above poverty line	99	55.6		
	Total	178	100	284,660.02	900,133.36
	Minimum	-1,605,315			
	Maximum	4,774,852			
Monthly Household Expenditure (after financing)	Below poverty line	65	36.3		
	Above poverty line	114	63.7		
	Total	179	100	408,599.69	906,311.51
	Minimum	-1,305,315			
	Maximum	4,774,825			

Table 13. Number of BPRS respondents with household expenditure under the poverty line.

		Frequency	Percent	Mean	Standard Deviation
International Poverty Line of USD 2/day = IDR 17,589/day/person (IDR 527,660/month/person)					
Monthly Household Expenditure (before loan)	Below poverty line	139	82.2		
	Above poverty line	30	17.8		
	Total	169	100	-706,024.61	1,359,468.12
	Minimum	-3,248,940			
	Maximum	8,417,020			
Monthly Household Expenditure (after loan)	Below poverty line	122	72.2		
	Above poverty line	47	27.8		
	Total	169	100	-308,598.57	1,447,689.64
	Minimum	-2,565,960			
	Maximum	8,417,020			
Indonesia National Poverty Line of IDR 245,035 /month/person					
Monthly Household Expenditure (before financing)	Below poverty line	60	35.5		
	Above poverty line	109	64.5		
	Total	169	100	424,475.38	1,240,046.73
	Minimum	-1,170,210			
	Maximum	9,264,895			
Monthly Household Expenditure (after financing)	Below poverty line	39	23.1		
	Above poverty line	130	76.9		
	Total	169	100	821,901.42	1,423,075.77
	Minimum	-870,210			
	Maximum	9,264,895			

Compared to the BPRS respondents, the BMT respondents had a 50% improvement in sales performance. On this basis, it is likely that the BMT respondents will be able to manage the fund more productively. This sales improvement is high compared with findings from earlier research of BMT in six cities in Java (Tangerang, Depok, Jakarta Selatan, Jakarta Barat, Jakarta Timur, Wonosobo and Yogyakarta), for which the average sales improvement was reported to be IDR 1,417,769; this was a 21.36% increase after the customers built a partnership with BMT (Amalia 2008). However, compared to a study by Widyaningrum (2000) which found improvement on sales of around 60%, the finding here could be considered low, and this could be due to the larger number of respondents from a larger numbers of institutions applied in this study.

Impact on net income

As for the impact on net income, the results show that the annual net income of total respondents was significantly higher after financing (50%) than the annual net income before financing (Table 4). The improvement in annual net income for BPRS respondents was around three times higher than for the BMT respondents. This could indicate that BPRS respondents with more mature and larger businesses could operate these more efficiently compared with the BMT respondents. A further regression analysis would identify the specific variables that particularly affect the capability to attain higher net income.

In comparison to previous findings, research comparing the income before and after financing shows an improvement in average monthly income of IDR 472,328 (19.58%) (Amalia 2008). Further, a study by Ajija and Adnan (2011) shows that BMT MMU East Java make a positive contribution, having a significant impact in improving household income by around 50% following financing, from IDR 1,097,700 before financing to IDR 1,669,100 after financing. This finding is similar to that from previous research on BMT MMU, and much higher than for Islamic Micro-finance Institutions (IsMFIs) in other provinces in Java. A study on three BMT under Yayasan Peramu Bogor, West Java, Indonesia found that around 70% of the respondents reported a net improvement in income after financing; however, a decline in net income occurring for businesses of 27–60% of the respondents (measured separately for businesses of different ages) has also been presented (Widyaningrum 2002). These findings provide evidence that BMT and BPRS are likely to have positive role in real income improvement.

The results from this study support previous findings. Amongst other studies, an analysis using a different approach based on a model of path analysis with three variables presented by Beik and Purnamasari (2011) suggests that the daily income level after financing is positively affected (81%) by daily business profit, monthly consumption and proposed financing application. In addition, Rahman (2010) revealed that the average improvement of customers' income reached 33% after joining RDS IBBL, particularly for clients who run small businesses, as compared to other types of business. Using binary logistic regression analysis as a means of determining which variables have an effect on economic impact, Naipom (2013) found that the strong predictors of economic impact in Thailand are gender, occupation and age: those who are male, a government officer, and an

older respondent are likely to benefit from Islamic micro-financing.

Impact on business expenditure

With regards to impact on business expenditure, the annual business expenditure was significantly higher after financing than before financing, which might indicate that the funds have been used productively (Table 5). BMT and BPRS respondents were found to have a similar level of improvement in performance, although BPRS respondents' business expenditures were slightly higher than those of BMT respondents. This might be due to the different size of businesses among the respondents; BPRS respondents generally have larger business expenses and greater business costs.

Although a large majority of the respondents reported 'no impact' on specific monthly expenditures (descriptive analysis, unreported), the findings also suggest statistically significant differences among groups of financing institutions type and the following monthly business expenses: stock, utilities, transport, and financing repayment (Table 6). These expenses are the ones most likely to be related to business and directly attached to daily expenses. Generally, the BPRS respondents reported them to have least impact, except for financing repayment. In other words, the BMT respondents are likely to benefit more from the financing and to have more respect in response to an improvement.

However, there are no significant differences among groups of type of financing institution for the variables of tools and minor equipment, rent, and wages (Table 6). This indicates that BMT and BPRS respondents do not differ in terms of spending the funds on these businesses expenditures. A possible reason is that both BMT and BPRS respondents are likely to operate a business in the same premises after financing; hence, there is no additional cost for rent. Wages, in particular, also remain the same for the respondents of both institutions. This is in contrast with the finding on improvement of 'number of workers', which shows a positive impact. This would imply that improvement in number of workers has no effect on wages, which is not to be expected.

Comparing these findings, it should be noted that there is a different finding according to the test applied. This raises a question: why, in terms of quantitative perception (value of money), is the business expenditure of BPRS respondents higher while, in contrast, in the qualitative range of perception on expenditure, BPRS is lower? A possible reason might be the high expectation of BPRS respondents; although their expenditures may be higher, it seems that they are insufficiently high to be considered a positive impact.

Impact on household expenditure

The research findings indicate that the annual household expenditure of total respondents was significantly higher after financing than before (Table 7), and the improvement reported by BPRS respondents was twice that of the BMT respondents. This might indicate that the BPRS respondents achieve a greater improvement in terms of household and personal life. However, it could also imply that the BMT respondents are more efficient in managing the fund and consume less than the BPRS respondents.

A further test identified statistically significant differences among groups of type of financing institution in transport expenditures, and furniture and electrical purchase per year (Table 8). No statistically significant differences are found in household expenditures on: food, health and medical, education, clothing, and household utensils. Overall, the BPRS respondents are more affected than the BMT respondents, which might indicate that they spend more money on transport expenditures; it could imply that they buy better modes of transport, probably a new motorcycle or a new car, and expend more on furniture/electrical goods.

Again, the same question arises of why in terms of value the BPRS respondents reported a higher impact, but the perception they report is lower. A possible explanation for this may arise from a different way of thinking for the respondents of these two types of Islamic financial institutions: the BPRS respondents are likely to come from a higher economic level than the BMT respondents, and so may have a higher level of expectation which will affect the way they respond to the qualitative perception question.

With respect to previous research, the results of this study are similar to the findings from a survey in RDS IBBL, which show that household expenditures increase, within which food expenditure shows the largest improvement, followed by house repair and maintenance, and expenditure on medication (51%) (Rahman and Ahmad 2010).

Impact on assets

With regard to the impact on assets, the findings suggest a large majority of the respondents reported 'no effect' on assets (descriptive analysis, unreported). However, significant differences are found in almost all variables in assets and types of financing institutions, including building, private car/motorcycles, cattle, productive assets, electronic goods, jewellery; but not for land/building and savings (see MWU Test, Table 9). Overall, the group for which there was the least improvement in assets is the BPRS respondents. This might imply that BPRS respondents have higher level of expectation with respect to improvement in their assets, possibly due to their higher level of economic status. The significance attached to the variables listed may be due to the character of these assets, which have less value than land/building. Saving is also not significant, probably because savings are more easily measured since they have an obvious value base, and so any improvement can readily be recognised.

A significant increase in assets was also found in previous research; almost 80% of the respondents of three BMT in West Java, Indonesia were found to have improvement in assets after financing (Widyaningrum 2002). A study by Ahmed (2002) also found that the respondents of an IsMFI in Bangladesh attained a 68% improvement in assets, while the other two IsMFIs had a 15% and a 24% improvement (Ahmed 2002). Further, the premises showed an improvement that was greater than the assets; for the respondents of one IsMFI premises improved by 88%, while the premises improved for the other two IsMFI by 17% and 28% (Ahmed 2002). In addition, another survey in Bangladesh (2010) indicates that all types of assets, for instance, house, land, furniture, radio, television, cycle and

cart, increased following joining RDS IBBL (Rahman and Ahmad 2010).

Impact on economic activities

The greatest impacts on economic activities were found to be improvements in volume of goods/services (by 75% of the respondents), quality of goods/services (by half of the respondents), and diversification into new goods/services; production technology and bookkeeping, however, seemed unaffected (descriptive analysis, unreported). The observed high impact could be considered as a positive indicator that the funds are used directly for business development in terms of volume, quality and new products. Improvement on volume of goods/services transpires to be the activity experiencing the highest impact, and this could be due to a simple and direct approach in using the funds.

This finding supports previous findings, as the improvement in volume of goods/services was also revealed in Bangladesh, the respondents of an IsMFI achieving more than a 50% improvement in volume of goods/services after receiving funds, while two other IsMFIs improved by around 10% (Ahmed 2002). In particular, diversification into new goods/services seems to be less affected (37%) than the improvement in volume and quality of goods/services, this also being similar to the findings from previous research (Ahmed 2002).

It should be noted that although technology and bookkeeping are likely to be disregarded in this study, the majority of the respondents (60%) are in retail businesses (descriptive analysis, unreported), for which there is likely to be less of a requirement for improvement in technology. Unfortunately, a lack of awareness about maintaining proper bookkeeping seems widespread, and is a common trend among MEs. Hence, it is suggested that the BMT and BPRS should provide more training on how to maintain proper bookkeeping; such training could be conducted in cooperation with universities under the higher education community service (development) programmes.

The findings also show that for the BPRS respondents there is a significantly higher impact on volume of goods/services, quality of goods/services, production technology, and premises than for the BMT respondents (Table 10). The possible reasons for this finding are that the BPRS respondents have used the funds more productively, and that the funds received are likely to be almost double those received by the BMT respondents (descriptive analysis, unreported).

However, no significant differences are found in diversification into new goods/ services and bookkeeping. This might imply that diversification is not likely to be a priority for either the BMT or BPRS respondents, as they are focusing more on the improvement of volume and quality of the existing products. In terms of bookkeeping, again, a lack of awareness of the importance of proper bookkeeping occurs for both BMT and BPRS respondents.

Overall, it should be noted that the perception of economic activities is higher among the BPRS respondents, which might indicate that this group benefited more from the micro-financing in improving their businesses due to the higher funding received, and they may also have a greater ability to manage business more efficiently.

Impact on employment

The findings generally show that the total number of both male workers and female workers is significantly higher following financing, which might indicate a real positive impact on employment (Table 11). Overall, the improvement in total numbers of workers as reported by the BPRS respondents was slightly higher than for the BMT respondents. This might indicate that BPRS respondents have opened more job opportunities for new workers than did the BMT respondents; the possible reasons for this may include the larger scope and size of the BPRS respondents' businesses compared with those of the BMT respondents', and the larger amount of financing received (descriptive analysis, unreported). However, the BMT respondents reported a greater improvement in number of female workers than the BPRS respondents, which might indicate that BMT focus more on the empowerment of women.

Similarly, the positive impact on employment has also been pointed out by Ahmed (2002), who showed that the time spent engaged in business (by both respondents and other family members) increased significantly following funding

by IsMFI. In addition, Rahman (2010) points out that, after joining RDS IBBL, the average number of family members involved in the business improved from 1.96 to 2.1.

With regard to the impact on poverty alleviation, the data analysis reveals a reduction in the number of respondents living under the poverty line. However, when based on the international poverty line, the percentage reduction is less than when the national poverty line is applied; the international poverty line is almost double the national poverty line. Hence, although the micro-financing contributes to an improvement in household expenditure, this improvement did not extend above the international poverty line. Overall, BPRS seemed to have a better performance in terms of reducing the number of respondents who lived below the poverty line.

Comparative impact analysis for BMT and BPRS

Table 14 shows a comparative analysis of the economic impact and poverty alleviation of BMT and BPRS. It should be noted that the findings for each impact differ. For improving sales and assets BMT performed better,

Table 14. Comparative impact analysis for BMT and BPRS.

No	Subject interest	BMT	BPRS	Remark
1	Sales	Before: IDR 72 million After: IDR 108 million	Before: IDR 108 million After: IDR 132 million	BMT respondents improvement 50% higher than BPRS
2	Business expenditures	Before: IDR 48 million After: IDR 72 million BMT respondents are likely to report higher impact on monthly business expenditures	Before: IDR 72 million After: IDR 97 million BPRS respondents reported lower impact on monthly household expenditures	BPRS respondents have slightly higher improvement than BMT Majority reported 'no effect' on monthly business expenditures; however, there is small positive effect and the BMT respondents have higher impact than BPRS
3	Net income	Before: IDR 14.7 million After: IDR 18 million	Before: IDR 24 million After: IDR 36 million	Net income of BPRS respondents is three times higher than that of BMT respondents
4	Household expenditure	Before: IDR 12 million After: IDR 14.4 million BMT respondents are less affected	Before: IDR 12 million After: IDR 18 million BPRS respondents are more affected	Household expenditures of BPRS respondents improvement more than double that of BMT respondents Significant differences are only on transport expenditures and furniture and electrical purchase
5	Assets	BMT respondents reported higher impact on all variables of assets	BPRS respondents reported lower impact on assets	A large majority reported 'no effect' on assets; however, there is a small positive impact, in which the BMT respondents reported higher impact
6	Economic Activities	BMT respondents reported lower impact on economic activities	BPRS respondents reported higher impact on economic activities	The highest impact on economic activities related to goods/services sold, including improvement of volume, quality and diversification. In general, BPRS respondents reported higher impact on economic activities
7	Employment	Number of employees: Before: 2.09 After: 2.64	Number of employees: Before: 2.85 After: 3.44	The total number of workers improved significantly; BPRS respondents reported slightly higher impact on employment
8	Poverty alleviation	Reduction in poverty after financing based on poverty lines: International: 1% Indonesian: 8%	Reduced poverty after financing based on poverty lines: International: 10% Indonesian: 35.5%	BPRS seems to have better achievement in poverty reduction

Note: Values shown are annual amounts.

whereas BPRS did so for developing impacts on business expenditures, net income, household expenditures, economic activities, employment and poverty reduction. Overall it can be concluded that BPRS performed better than BMT in economic development and poverty alleviation; this might be due to the larger organisational size, wider scope of operation, bigger assets, more effective management and more supportive regulation of BPRS.

7. Conclusions and Recommendations

The main findings show the both BMT and BPRS in East Java Indonesia play a positive role in economic development for all variables of the economic impacts, and for none is there a negative impact. In particular, the Wilcoxon Signed Rank Test suggests a positive result, the improvement after financing occurring in the annual value of sales, net income, businesses expenditures, households' expenditures, and employment. Although the results varied case by case, generally the BPRS respondents were likely to report a higher impact after financing. Despite the positive result on the above tests, the perception of the impact was dominated by a 'no effect' response, although there were significant numbers of positives impact reported. The findings also suggest a positive role in poverty alleviation since BMT and BPRS could decrease the number of poor respondents living under the international and national poverty line. Overall, it should be noted that BPRS has a better performance in developing MEs compared to BMT, which might indicate that BMT needs to improve their services and to manage their operations more efficiently.

In conclusion, BMT and BPRS have the potential to develop enterprises, particularly micro- and small enterprises. However, the following recommendations are proposed:

- Services to respondents, both financial and social, should be improved as this will further increase the development of respondents' businesses; this might include technical, book keeping and management training.
- Promotion of financing products should be to a wider community; providing education to customers through delivering religious speeches during routine groups meetings (monthly).
- Further training of customers will improve understanding of the Islamic terms used in financing products.
- Greater innovation in financial product development is desirable in order to meet the particular needs of clients.

It is expected that if such a proactive strategy is adopted, a more positive impact can be achieved.

References

- Adnan Muhammad Akhyar et al. "Study of Factors Influencing Performance of The Best Baitul Maal Wat Tamwils (BMT) in Indonesia." *IQTISAD Journal of Islamic Economics*, 4(1), 2003. 13–35.
- Ahmed Habib. "Financing Microenterprises: An Analytical Study of Islamic Micro-Finance Institutions." *Islamic Economic Studies*, 9(2), 2002. 27–64.
- Ajija Sochrul Rohmatul, Adnan Muhammad Akhyar. "The Effectiveness of BAITul Maal wat Tamwil in Reducing Poverty: The Case of Indonesian Islamic Micro-finance Institution." Paper presented at 2nd International Conference on Inclusive Islamic Financial Sector Development: Enhancing Islamic Financial Services for Microenterprises. 2011.
- Amalia Euis. "Potensi dan Persoalan LKMS/BMT Bagi Penguatas UKM dalam Kerangka Keadilan Distributif Ekonomi Islam." (Studi LKMS/BMT di 6 Kota Pulau Jawa). Paper presented at IAEI Conference, Surabaya. 2008.
- Antonio, Muhammad Shafii. "Islamic Banking in Indonesia, A Study of Riba and the Development of the Islamic Banking Industry and its role in the Advancement of Small and Micro Financing." The University of Melbourne, Melbourne, Australia. 2004.
- Ascarya Sanrego, Yulizar D. "Redefine Micro, Small, And Medium Enterprises Classification And The Potency Of Baitul Maal Wa Tamwiel As Intermediary Insitutions In Indonesia." Paper presented at the First International Conference on Inclusive Islamic Financial Sector Development, Brunei Darussalam. 2007.
- Ascarya et al. "The Profile and Role of Baitul Maal wa Tamwiel as an Alternative Source of Financing for MSMEs." Jakarta: Center for Central Banking Education and Studies. 2007.
- Asian Development Bank. Asian Development Bank and Indonesia: Fact Sheet. Manila: Asian Development Bank. 2012.
- Banking Act No 10/1998. 1998.
- Beik Irfan Syauqi, Purnamasari Indah. "Empirical Role of Islamic Cooperatives in Financing Micro and Small Scale Entrepreneurs in Indonesia: Case Study of KOSPON Jasa Syariah Pekalongan." Paper presented at the Islamic Finance Conference, Qatar. 2011.
- Biro Pusat Statistik. Laporan Bulanan Data Sosial Ekonomi October 2012. Jakarta: Statistics Indonesia. 2012a.
- Biro Pusat Statistik. Statistical Yearbook of Indonesia 2012. Jakarta: Statistics Indonesia. 2012b.
- Chokro Widiyanto Mislam, Ismail, Abdul Ghafar. "Sustainability of BMT Financing for Developing Micro-Enterprises." Munich Personal RePEc Archive. 2008.
- Hamada Miki. (2010). "Commercialization of Micro-finance in Indonesia: The Shortage of Funds and The Linkage Program." *The Developing Economics (IDE JETRO) Chiba Japan*, 48 (1). 2010.
- Khandker Shahidur R. et al. "Does Access to Finance Matter in Microenterprise Growth? Evidence from Bangladesh." Public Research Working Paper. 2013.
- Naipom Tawat. "Assessing the Performance and Scope of Islamic Micro-finance in Thailand: Developments and Prospects." Durham University, Durham, UK. 2013.
- Obaidullah Muhammed. "Role of Micro-finance in Poverty Alleviation." Jeddah: IRTI, Islamic Development Bank. 2008a.

- Obaidullah Muhammed. "Introduction to Islamic Micro-finance." New Delhi: International Institute of Islamic Business and Finance. 2008b.
- Rahman M Mizanur, Ahmad Fariduddin. "Impact of micro-finance of IBBL on the rural poor's livelihood in Bangladesh: an empirical study." *International Journal of Islamic and Middle Eastern Finance and Management*, 3(2), 2010. 168–190.
- Sakai Minako. "Community Development through Islamic Micro-finance: Serving the Financial Needs of the Poor in Viable Way." In G. Fealy & S. White (Eds.), *Expressing Islam: Religious Life and Politics in Indonesia*. Singapore: ISEAS Publishing. (2008).
- Sakai Minako. "Growing together in partnership: Women's views of the business practices of an Islamic Savings and Credit Cooperative (Baitul Maal wat Tamwil) in Central Java, Indonesia." *Women Studies International Forum*, 33, 2010. 412–421.
- Sakai Minako, Marijan Kacung. "Harnessing Islamic Micro-finance." Paper presented at the Australian Indonesian Governance Research Partnership Research Policy Forum. 2008.
- Sakti Ali. "Pemetaan Kondisi dan Potensi BMT: Kemitraan Dalam Rangka Memperluas Pasar dan Jangkauan Pelayanan Bank Syariah kepada Usaha Mikro." Unpublished paper. Bank Indonesia. 2011.
- Seibel Hans Dieter. "Islam Micro-finance in Indonesia." University of Cologne, Development Research Center. 2005.
- Takahashi Kazishi, Higashikata Takayugi, Tsukada Kazunari. "The Short-Term Poverty Impact Of Small-Scale, Collateral-Free Microcredit In Indonesia: A Matching Estimator Approach." *The Developing Economics (IDE JETRO) Chiba Japan*, 48(1), 2010. 128–155.
- UNDP Human Development Report 2009. From <http://hdr.undp.org/en/reports/global/hdr2009>.
- UNDP Human Development Report. "The Real Wealth of Nations, Pathway to Human Development." New York: United Nation Development Programme. 2010.
- UNDP Human Development Report. "Sustainability and Equity: A Better Future for All." New York: United Nation Development Programme. 2011.
- Widyaningrum Nurul. "Model Pembiayaan BMT dan Dampaknya Bagi Pengusaha Kecil, Studi Kasus BMT Dampangan Yayasan Peramu Bogor." Bandung: Yayasan Akatiga. 2002.
- World Bank. *World Development Report 2000/2001: "Attacking Poverty."* New York: World Bank. 2001.