Microfinance and microenterprise performance in Indonesia: an extended and updated survey

by Adwin Atmadja

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Abstract

Purpose – The purpose of this paper is to address the small, women micro-entrepreneur dominated and heterogeneity limitations of the Atmadja *et al.* (2016) study. The sample is much larger, includes more men and is more heterogeneous, which allows deeper insights and more meaningful explanation of the relationship between microfinance and microenterprise performance in the case of Indonesia, including the effects of gender, lending scheme and money separation.

Design/methodology/approach – This study used a survey of 556 respondents across five microcredit providers in the city of Surabaya using an updated instrument. Ordered probit is used to analyse data.

Findings – Microfinance may not matter for microenterprise performance in the case of Indonesia. Additionally, microcredit schemes (individual vs group) and gender may also not matter for performance, but money separation might have some influence.

Practical implications – Non-financial factors such as human capital, spousal involvement, and money separation should be considered as important factors for improving microenterprise business performance in Indonesia, with less focus on microcredit *per se*.

Originality/value – This study provides further evidence that microfinance may not matter for microenterprise performance in the case of Indonesia, a populous middle income country with a very long history of microfinance.

Keywords Microfinance, Microenterprise performance, Money separation

Paper type Research paper

1. Introduction

Debates abound and longstanding on the effects of microfinance on microenterprise performance; see, for example, Barnes *et al.* (2001), Chen and Snodgrass (2001), Copestake *et al.* (2001), Dunn and Arbuckle (2001), Kondo *et al.* (2008), and Crépon *et al.* (2011) who argue for a positive relationship and Adams and Von Pischke (1992), Olson *et al.* (2003), Davis (2006), and Bateman and Chang (2012) who argue that microfinance may not really matter for performance.

Despite a very long history of microfinance in Indonesia[1] – a populous, middle income county bestowed with constant and concerning levels of poverty and economic challenges – little remains known about the effects of microfinance on microenterprise performance in the country. To the best of our knowledge, the most relevant study so far might be by Atmadja *et al.* (2016) who use data obtained from a 2010 survey to provide an in-depth understanding of the role of microfinance for microenterprise performance in Surabaya, the second largest city in Indonesia. Essentially, the findings suggest that microcredit itself does not necessarily improve business performance.

While the 2010 survey data have also been used in other published works such as Bradley *et al.* (2011), Wood *et al.* (2015), Atmadja *et al.* (2016) and Neubert *et al.* (2017) acknowledge a number of limitations of the survey with respect to their specific investigation, i.e. testing the relationship between microfinance and microenterprise performance, and suggest that a larger sample, including men-owned microenterprises and greater heterogeneity might

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provide deeper insights and more meaningful explanation of the relationship between microfinance and microenterprise performance.

The above has exactly been the motivation of the present study. Essentially, we have gone back to the city of Surabaya and conducted a much wider and larger survey – we have extended and updated the 2010 survey. The new survey compliments and strengthens the 2010 survey in the following ways: 556 respondents were interviewed (more than three times in size compared to that of the 2010 survey) – excluding incomplete responses, outliers and other non-conforming criteria, 453 valid responses used for analysis, compared to 130 in the earlier study; about one-fifth of the respondents were men-owned microenterprises in the new survey compared to none in the previous; the new survey was more heterogeneous compared to 2010 as it covered five microcredit providers compared to only one previously; and new questions have been added.

There are two main objectives of this paper. First, we are interested to see if the main findings of Atmadja *et al.* (2016) would prevail with the updated and extended survey data. Second, the updated and extended survey enables us to explore a few more interesting research questions, which have not been addressed previously in the context of microfinance, including, would different lending schemes (group vs individual) matter for business performance? What about gender? And, does a micro-entrepreneur's ability and/or willingness to separate their personal/consumption expenses from business related (money separation, hereafter) make any difference to business performance?

The findings of the updated and extended survey are intriguing and yet conforming. Overall, we find that even with a much larger sample, including both men- and women-owned microenterprises and greater heterogeneity, microfinance by itself may not necessarily improve business performance. Thus, our findings, by and large, confirm the findings of the Atmadja *et al.* (2016) study and conform to the strand of literature (e.g. Adams and Von Pischke 1992, Imai *et al.*, 2010, Johnston and Morduch, 2008) which argues that microfinance may not really matter for microenterprise performance. With respect to the new research questions, while microcredit schemes (individual vs group) and gender effects may not matter significantly, money separation does appear to have a positive and significant relationship with performance. On the policy front, this paper recommends that non-financial factors such as human capital, spousal involvement, and money separation be considered as important factors for improving microenterprise business performance in the case at least of Indonesia, with less focus on microfinance *per se*.

The rest of this paper is outlined as follows. Section 2 provides a brief literature review. Section 3 describes the research methodology. Section 4 provides empirical results with discussion. Section 5 provides policy implications. Section 6 concludes.

2. Brief literature review and hypothesis development

In this section, we develop our hypothesis with respect to each independent variable based on extant literature. With regard to those included in the Atmadja *et al.* (2016) study, we summarise the literature review and restate the hypotheses since we concur with them – for details, we invite the reader to peruse that study, which can be found in Atmadja *et al.* (2016). With regard to the three new independent variables – microcredit scheme, gender, and money separation – we develop our hypothesis based on a brief review of the literature. Essentially, *H1-H3* below are those adopted from the Atmadja *et al.* (2016) study and *H4-H6* are developed in this study:

H1. The relationship between financial capital and microenterprise business performance will be negative.

H2. Human capital will be positively associated with microenterprise business performance.

H3. Social capital will be positively associated with microenterprise business performance.

2.1 Microcredit schemes and microenterprise performance

In the microfinance industry, the individual and group lending credit schemes are the most common types available to microenterprises. Under the former, the size of the loan is determined primarily on the basis of the pledged collateral, which may be repossessed in the event of default. Thus, while on a much lower scale, some parallels can be drawn between this and loans obtained from the formal sector such as banks.

Under the latter, microcredit is offered to individuals only via "groups" – an individual borrower applies for a loan through their "lending group". The lending group, assisted by an officer appointed by the microfinance provider, decides on the amount to be approved and subsequently becomes liable for repayment in the event of default[2]. To ensure timely repayment of the loan, the group lending scheme involves frequent repayment meetings and peer pressure. For some borrowers, these might be burdensome, especially if the group is formed from communities with a high degree of social ties. Nevertheless, evidence suggests that the frequent meetings might also benefit the members. For example, using field experiments in India, Feigenberg *et al.* (2010) provide evidence on the role of microfinance in building social capital by reporting that more frequent group meetings can in practice lead to greater social interactions. These interactions might provide members with alternative sources of information that might not otherwise be available to individuals, which might help discover or create new opportunities in the market (Shepherd *et al.*, 2007). As one of the manifestations of weak ties, a lending group can create social capital through increased communication, information diffusion, and social support (Paxton, 1999). The lending group might develop new or deepen already existing social relationships within the group that might yield economic gains and increase the likelihood of loan repayment (Anthony, 2005).

The joint liability mechanism of lending groups might also encourage risk taking behaviour by individuals (Fischer, 2013; Giné *et al.*, 2010). However, the strict peer monitoring practices might, on the other hand, serve to discourage such behaviour (Fischer, 2013).

The most recent study regarding the impact of microcredit schemes on borrowers has been reported by Attanasio *et al.* in 2013. Using a randomized field experiment of 1,148 women who were members of a microfinance institution (MFI) across rural Mongolia, they compared the impact of individual vs group lending microcredit on borrowers. The study finds that microcredit significantly influences business creation in the case of women receiving loans via group-lending schemes. The authors argue that one possibility might be that the group-lending scheme allows women to mutually insure each other against adverse business outcomes, which may, in turn, reduce investment uncertainty, increase loan take up, and eventually lead to larger long-run effects such as an increase in business performance.

In light of the foregoing:

H4. Group-lending scheme funded microenterprises are likely to perform better than those funded otherwise.

2.2 Gender and microenterprise performance

Studies comparing the performance of men and women-owned firms show that those headed by women tend to be generally smaller across various dimensions, including gross revenue, number of employees, sales, assets, and profit levels (Ellis *et al.*, 2010; Fischer *et al.*, 1993; Kalleberg and Leicht, 1991; Rosa *et al.*, 1996; Watson and Robinson, 2003). Women-owned enterprises tend to also expand more slowly than those owned by men (Cooper *et al.*, 1994; Kelley *et al.*, 2010), which might be due to women being generally more risk-averse (Cliff, 1998) and lack relevant industry-specific experience (Loscocco *et al.*, 1991).

Other studies report that women have narrower and more homogenous social networks[3] (Kelley *et al.*, 2010; Loscocco *et al.*, 2009) and have more limited access to finance (Parker, 2009) compared to men. Yet, in another study, Kessy (2009) finds that men-headed enterprises have

higher business performance compared to those headed by women. The study also notes that men in general have higher assets, sales revenue and number of employees than women.

Although some other studies report that women had particularly lower rates of loan default compared to men (Khan, 1999; Khandker, 1998; Panjaitan-Drioadisuryo and Cloud, 1999; Remenyi, 2000) which might reduce financial risk to the lenders (Armendariz de Aghion and Morduch, 2005), it does not always necessarily mean that women-owned enterprises performed better than those owned by men. The low default rates could instead be due their more risk-averse nature (Cliff, 1998; Velasco and Marconi, 2004).

Women and men might become entrepreneurs for different reasons as well (Ellis *et al.*, 2010). While men appear to be more often driven by economic opportunities ("opportunity-motivated"), women tend to be more "necessity-motivated" entrepreneurs who desire to meet the basic necessities or to just find employment. An enterprise helps women improve their earnings capabilities and at the same time enables the desired flexibility of a balanced work-family commitment (Bird and Brush, 2002; Brush, 1992; Ellis *et al.*, 2010). Consequently, female borrowers tend to have a greater social impact compared to male borrowers because they invest more capital in family education, nutrition and health care (Armendariz de Aghion and Morduch, 2005; Blumberg, 1988; Panjaitan-Drioadisuryo and Cloud, 1999; Pitt *et al.*, 2006).

In light of the foregoing:

H5. Men-owned microenterprises are likely to perform better than women-owned ones.

2.3 Money separation and microenterprise performance

Literature suggests that microcredit often fails to help microenterprises grow because borrowers tend to have limited skills to use the borrowed funds effectively (Adams and Von Pischke, 1992; Imai *et al.*, 2010; Johnston and Morduch, 2008). Evidence shows that the borrowers may not use the funds for the intended purpose such as purchasing productive assets, or working capital (Barnes *et al.*, 2001; Collins *et al.*, 2009; De Mel *et al.*, 2008; Rutherford, 2006). There are at least two possible reasons for this inability to distinguish between the intended and actual purpose of the loan – money separation as we refer to in this study. First, self-control problems or lack of self-discipline can often lead individuals to neglect productive investments today that have would large payoffs in the future (Banerjee and Mullainathan, 2010; Duflo *et al.*, 2009). Second, there is a lack of access to credit services for the financially disadvantaged to smooth their daily consumption and to deal with emergency as this group are historically thought of as having no need for credit services; hence, microcredit becomes the only credit available to such families (Collins *et al.*, 2009; Hoque, 2004).

To provide an example from Indonesia, via a survey of 1,438 households across six provinces of Indonesia in 2002, Johnston and Morduch (2008) find that at least 50 per cent of the microcredit from MFIs to microenterprises were for purposes totally unrelated to business. Instead, the loans were used for home improvement, non-business land or building purchase, school tuition, medical treatment, other loan repayment, daily needs or retirement needs, vehicle purchase, household goods, ceremony or social expenditure, holiday needs, jewellery purchase, etc. Moreover, the authors report that female-headed households were more likely to borrow for daily consumption. The borrowers' inability to distinguish their personal/consumption expenses from business-related investment often prolongs their dependence on external finance (Parker, 2009). This lack of self-discipline is more likely to bring undesirable consequences to the business performance of MEs. It is apparent that a good business or management practice, even in the simplest form such as separating money for business from household expenses, might be important for microbusiness success.

In light of the foregoing:

H6. Money separation is positively related to microenterprise business performance.

3. Research method

3.1 The survey

As indicated earlier, the present (2014) survey was conducted in the same location as the previous (2010) – in Indonesia's second largest city of Surabaya and its surroundings, from February to June 2014. The key methodological improvement to note in the 2014 compared to the 2010 surveys is in relation to the number and extent of microfinance providers covered – the 2010 survey covered only one microfinance provider Setya Bhakti Wanita (SBW); the 2014 survey covered five - four more than the previous, including two Islamic-style microfinance providers[4] (Madani and Artha Bina Ummat), one cooperative (Assakinah), and one government-sponsored microcredit providers (BKM Bendul Merisi) plus SBW. Besides, the questionnaire has been extended to include many important questions that the earlier survey did not cover. These methodological improvements are expected to address some limitations in previous studies (Atmadja *et al.*, 2016; Bradley *et al.*, 2011; Neubert *et al.*, 2017; Wood *et al.*, 2015). Table I provides a summary of the features of the five providers.

As Table I shows, our sample provides a reasonable mix of microcredit providers, which in turn provides a good robustness test. For example, the sample includes small, medium and large sized providers, with membership ranging from 205 to 12,470. Similarly, the sample microcredit providers are relatively new (2010) to relatively well established (1978), cover different types –Islamic, cooperatives and others – and with different combinations of lending group vs individual credit schemes and different make up in terms of men and women memberships.

At the time of the survey, the five microcredit providers had a total membership of 17,553, of which 5,531 (205 from BKM, 3,164 from SBW, 738 from Assakinah, 575 from ABU,

	Setya Bhakti Wanita	Artha Bina Ummat	Assakinah	Madani	BKM Bendul Merisi
Established	1978	1998	1999	2007	2010
Type	Cooperative	Islamic	Cooperative	Islamic	Community Empowerment
Total membership	12,470 (all women)	1,592 (842 men, 750 women)	971 (51 men, 920 women)	3,515 (1439 men 2076 women)	205 (113 men 92 women)
Number of lending groups	418	0	64	0	29
Credit schemes	Individual, Group lending	Individual only	Individual, Group lending	Individual only	Group lending only
Total credit outstanding (in IDR, 2013)	More than 1 billion	More than 1 billion	More than 1 billion	More than 1 billion	Less than 1 billion
Credit ranges (in IDR)	Up to 2b (individual) 1-27 m (group)	0.5-40 m	Up to 200 m (individual) 0.5 to 8 m (group)	0.1 to 500 m	0.5 to 4.5 m
Credit terms	Up to 15 years (individual) 3-25 months (group)	Up to 24 months	Up to 24 months (group) 3-6 months (individual)	Up to 48 months	Up to 12 months
Credit requirements	Collateral (individual) Compulsory saving and voluntary saving (group)	Collateral	Collateral (individual) Compulsory saving and voluntary saving (group)	Collateral	Voluntary saving

Source: The data were obtained from the 2014 survey interviews with the MFIs

Table I. Characteristics of the microcredit providers covered in the 2014 survey

and 849 from Madani) met the critical survey criteria of "owns a microenterprise". Of the 5,531 who meet the criteria, 1,424 (or 26 per cent) had borrowed via individual credit schemes and the rest, 74 per cent, had borrowed using lending group schemes.

Of the eligible respondents, those using the lending group schemes to borrow belonged to around 178 lending groups (41 from Assakinah, 108 from SBW, and 29 from BKM). From each of these groups, two to three members were randomly selected as prospective respondents – a total of 530. Respondents using the individual credit scheme were also included in the survey – around 270 were randomly selected as prospective respondents.

Thus, a total of 800 prospective respondents were identified and contacted by the sample microfinance providers on behalf of the researchers for their voluntary participation. Of these, only 556 – 405 belonging to group-lending schemes and 151 individuals – agreed to be interviewed. Interviews were conducted mostly at the respondent's residence or business place to observe their real-life conditions; occasionally the interviews were conducted at group meetings. Of that figure, only 453 completed responses were found to be valid for the purposes of the analysis. Of the 453 respondents, 89 (20 per cent) turned out to be men and 364 (80 per cent) women, a ratio very much reflective of the make up of the microfinance membership in Indonesia – there are many more women than men.

The interviewers were local university students, from a final year research methods class who voluntarily wanted to participate in the survey.Ten students were selected based on their academic qualifications and relevant prior experience. The researchers provided training to the interviewers prior to the survey, which included technical understanding about the details of the questionnaire and the implementation of the ethical conduct, and closely supervised/monitored them during the data collection process.

3.2 *The variables*

Dependent variable. Consistent with Atmadja *et al.* (2016) and for the reasons explained in that study, profit change is used as the proxy for measuring business performance.

Independent variables. Again, consistent with Atmadja *et al.* (2016) and for the reasons explained in that study, we include the following independent variables in our study: microcredit, human capital, and social capital.

In addition, as noted earlier, we include gender (1 = female; 0 otherwise), credit schemes (1 = group lending; 0 otherwise) and money separation (1 = strict separation; 0 otherwise). The term money separation in this study is different from the usage in Karlan and Valdivia (2010)[5]. Data were obtained by asking respondents "how do you separate your money for business and money for household expenses?" It was a close-ended question with three optional responses – no separation; not strictly; strictly. The responses were then transformed into a dummy variable (i.e. 1 for strictly, and 0 otherwise). The reason for settling with the "binary and subjective" response is that micro-entrepreneurs in Indonesia tend not to keep proper records of their business transactions; quite often they are not properly trained, qualified or otherwise equipped to do so, which hindered us from obtaining more precise data on proportion of money used for business and for household expenses from the respondents, ideally required for this variable.

Control variables. The control variables are change in total assets, competition, number of employees, new products, respondents' age[6], and length of microfinance membership.

3.3 *Data description*

Table II describes the data of selected variables, comparing as well that from the 2014 survey to the 2010 survey. In the table, data from the 2014 survey are presented in two parts – Part A and Part B.

Part A contains the data of three of the five sample microcredit providers offering group lending credit schemes (i.e. Assakinah, BKM, and SBW) with 338 number of observations.

Variables		2010	2014 Part A Female	Part A Male	Part A All	2014 Part B Female	Part B Male	Part B all
Profit	Decrease (%)	18	18	10	17	16	10	15
	About the same (%)	34	19	8	18	20	9	18
	Increase (%)	47	63	82	65	63	81	67
Microcredit (in millions IDR)	Mean	11.35	9.98	2.03	8.80	9.66	4.36	8.62
Education	Elementary (%)	5	6	22	8	9	22	11
	Junior high (%)	12	15	24	16	14	19	15
	Senior high (%)	44	54	50	54	53	49	53
	University (%)	38	25	4	22	24	9	21
Prior work experience	No (%)	58	83	50	78	80	58	76
	Yes (%)	42	17	50	22	20	42	24
Family business background	No (%)	47	76	72	76	73	65	72
	Yes (%)	53	24	28	24	27	35	28
Strong ties	Mean	1.99	1.63	1.24	1.57	1.61	1.55	1.60
Weak ties	Mean	7.74	1.68	1.14	1.19	1.16	1.20	1.17
Lending group ties	Mean	31.77	25.42	5.86	22.53	25.42	5.86	22.53
Spousal involvement	Mean	5.18	5.24	4.86	5.18	5.28	5.16	5.25
Change in assets (%)	Mean	5.46	4.95	18.50	6.96	6.12	14.69	7.80
Competition	No (%)	37	28	44	31	30	35	31
	Yes (%)	63	72	56	69	70	65	69
Number of employees	Mean	2.87	0.91	0.82	0.89	0.87	1.10	0.91
New product	Mean	1.97	3.19	2.72	3.12	3.18	3.09	3.17
Age	Mean	48.02	46.53	46.70	46.56	45.41	44.07	45.15
Gender	Male (%)	0	0	100	15	0	100	20
	Female (%)	100	100	0	85	100	0	80
Credit scheme	Individual (%)	0	0	0	0	21	44	25
	Group lending (%)	100	100	100	100	79	56	75
Length of membership	Mean	10.25	10.77	4.48	9.78	9.43	4.35	8.43
Number of obs.		130	288	50	338	364	89	453

Notes: The data are summarised from the 2014 survey conducted by the researchers. Part A is calculated based on the 2014 data of three microfinance providers offering group lending credit schemes (i.e. Assakinah, SBW, and BKM). Part B is calculated based on the 2014 data of both credit schemes (i.e. group lending and individual) from the five microcredit providers

Table II.
The descriptive statistics of the data

Data from this part are used in the analysis meant to address the first study objective, i.e. to compare our findings with that of Atmadja *et al.* (2016), which included group-lending scheme only. Part B covers the data of both credit schemes (i.e. group lending and individual) from all of the five sample providers with 453 observations used for the analysis aimed at the second study objective, i.e. to test the influence of schemes (individual vs group), gender and money separation on microenterprise performance.

In terms of the dependent variables, the table shows that more respondents overall in the 2014 survey experienced growth in profit and sales compared to the 2010 survey. Further, the 2014 respondents generally borrowed less than the 2010s, and men on average borrowed much less compared to women. With respect to human capital (education level, prior working experience and parents/family business background), respondents in the 2010 survey appear to better overall. Moreover, male respondents were less educated but had more family business background and prior working experience than the female respondents in the both surveys.

Although it is relatively narrower compared to the 2010 respondents, the 2014 female respondents appear to have wider social ties/networks than the male respondents. Compared to findings from other country studies (Kelley *et al.*, 2010; Loscocco *et al.*, 2009), it

seems that Indonesia female micro-entrepreneurs tend to not only involve more family members, but also more acquaintances into their networks compared to their male counterparts. The size of women's lending groups is also greater than that of men's.

A concern is also put on the mean of the weak ties as it is apparent the 2,010 sample has much larger mean than the 2014s. It was suspected that this might be driven by some outliers. However, after re-estimating the model without the seemingly outliers, it was found that the result is not sensitive to those outliers.

4. Empirical results and discussion

Since the dependent variables are ordinal (i.e. 1 for decrease, 2 for about the same, and 3 for increase), the ordered probit is appropriately applied for analysis purposes. Table III presents the estimation results of the models using the group lending scheme subsample. This is to address the first study objective. In the table, the estimation results of Atmadja *et al.* (2016) is also restated. The equation used in Atmadja *et al.* (2016) is applied to estimate the 2,014 female samples.

Overall, when the dependent variable is profit change, both estimations yield similar results, indicating that the empirical result is not too sensitive across the two samples. Loan has a significant negative relationship with profit change in 2010 (at 10 per cent level) and 2014 (at 5 per cent level). Spouse involvement is the only social capital variable that matters for profit in 2014 as well as in 2010. The association of the both variables is more significant in 2014 (at 1 per cent level) than in 2010 (at 10 per cent level). Nevertheless, the

Variables	2010[a] Coef	2014[b] Coef
Financial capital		
Microcredit	−0.0645** (0.0275)	−0.0271* (0.0142)
Human capital		
Education	0.2204* (0.1344)	0.0810 (0.0987)
Prior working experience	−0.1043 (0.2333)	0.4278* (0.2517)
Family business background	0.0755 (0.2274)	−0.2680 (0.1995)
Social capital		
Strong ties	−0.0138 (0.0536)	−0.0685 (0.0627)
Weak ties	−0.0118 (0.0108)	−0.0319 (0.0496)
Lending group (LG-ties)	0.0171 (0.0146)	0.0052 (0.0089)
Spousal involvement	0.1332* (0.0719)	0.1292*** (0.0500)
Business control		
Change in assets	0.0254** (0.0062)	0.0408*** (0.0077)
Competition	0.4968** (0.2369)	−0.5134** (0.2010)
Number of employees	0.0391 (0.0506)	−0.0396 (0.0586)
New product	0.0706 (0.1197)	0.0241 (0.0479)
Individual control		
Age	0.0011 (0.0139)	0.0131 (0.0133)
Length of membership	0.0294 (0.0189)	−0.0068 (0.0131)
Number of observation	130	288

Notes: Dependent variable is profit change (1 if decrease, 2 if about the same, and 3 if increase) used as a proxy of business performance. Unstandardised coefficients and standard error (in parentheses) are presented; [a]Restated from Atmadja *et al.* (2016); [b]estimated using female samples of the 2014 data from three microfinance providers offering group lending credit schemes (i.e. Assakinah, SBW, and BKM) *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$

Table III.
Ordered probit estimation results of group lending samples

human capital variables have indifferent results. Education significantly matters in 2010 but does not in 2014. Instead, prior work experience influences are significant to profit in 2014.

To address the second study objective, five models are estimated using the 2014 data of the both credit schemes. In these models, while business performance remains the dependent variable, lending group ties variable is omitted from the analysis and all covariates used in Table III are treated as control variables. In addition, institution dummies (i.e. Arta Bina Umat, Madani, Assakinah, and BKM) and types of industry (i.e. manufacture, wholesale/retail, and services) are included as control variables in the models. The estimation results of the models are presented in Table IV.

In Model 1, microenterprise business performance is regressed on all control variables to provide a baseline model. Table IV shows that microcredit and the other four variables (i.e. prior work experience, spousal involvement, assets change, and competition) are significantly linked to business performance. Corresponding to *H4* –*H6*, credit scheme is then included as a covariate in Model 2, gender in Model 3, and money separation in Model 4. Finally, business performance is regressed on all variables in Model 5.

The models are estimated using the 2014 data of the both credit schemes from the five microcredit providers.

Table IV generally shows that, in all models, microcredit has a negative effect on profit, while the other variables have a positive impact on the business performance partially confirming *H2* and *H3*. These findings are to some extent comparable with those of Atmadja *et al.* (2016) – and conform to the strand of literature (e.g. Adams and Von Pischke, 1992, Collins *et al.*, 2009, De Mel *et al.*, 2008, Imai *et al.*, 2010, Johnston and Morduch, 2008) – suggesting that the results are not sensitive to sample size, and the inclusion of the three new variables (i.e. credit scheme, gender and money separation). However, these findings are not consistent with some other studies proposing a positive impact of microcredit on business performance (see, e.g. Awunyo-Vitor *et al.*, 2012; Barnes *et al.*, 2001; Chen and Snodgrass, 2001; Crépon *et al.*, 2011; Dunn and Arbuckle, 2001; Kondo *et al.*, 2008; Mahmood and Mohd Rosli, 2013; Panda, 2009; Ssendi and Anderson, 2009).

Considering entrepreneurship in Indonesia, commonly, due to a lack of options in the labour market, participation by the poor in the local market is often motivated by necessity. Because of this, they are less likely to have proper training, skills and resources necessary for conducting business (Bradley *et al.*, 2011). Microcredit might help overcome liquidity constraints and lead to business formation (Banerjee *et al.*, 2015). However, this potentially increases the number of imitative businesses and the degree of competition in the local market (Hannan and Freeman, 1984; Schumpeter, 1912), which might, in turn, reduce business profits.

In Models 2 and 5 of the tables, while the credit scheme (group vs individual) shows a positive relationship with business performance, the association is statistically insignificant, suggesting that the type of scheme might not really matter for a microenterprise's business performance; hence rejecting *H4*. This suggests that social capital created through a lending group membership may not necessarily make a significant difference to business performance. It is possibly because the agenda of group meetings have not been able to adequately capture business-related matters. The regular group meetings have largely been dominated by loan repayment issues, neglecting thus more meaningful business-related discussions. Our survey shows that majority (more than 70 per cent) of the respondents with group-lending schemes ranked loan repayment as top priority when asked for the time typically spent in regular group meetings; hence, the opportunity for exchanging and gaining valuable information about business opportunities and ideas is rather limited[7].

Second, in some microfinance providers, the group-lending size was too large (up to 50 members per group). On the one hand, this can broaden business/social networks among the members. On the other hand, this could adversely affect the quality of peer credit screening and monitoring within groups. Particularly in the situation when numerous loan applications

Table IV.
Ordered probit estimation results of 2014 samples

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Control variables					
Microcredit	−0.0248** (0.0117)	−0.0248** (0.0117)	−0.0244** (0.0117)	−0.0257** (0.0118)	−0.0254** (0.0118)
Education	0.0659 (0.0768)	0.0673 (0.0770)	0.0690 (0.0771)	0.0582 (0.0771)	0.0639 (0.0776)
Prior working experience	0.5140*** (0.1830)	0.5120*** (0.1830)	0.5240*** (0.1830)	0.5540*** (0.1830)	0.5590*** (0.1830)
Family business background	−0.1950 (0.1570)	−0.1960 (0.1570)	−0.1930 (0.1570)	−0.2010 (0.1570)	−0.2010 (0.1570)
Strong ties	−0.0399 (0.0563)	−0.0402 (0.0563)	−0.0451 (0.0564)	−0.0100 (0.0571)	−0.0151 (0.0573)
Weak ties	0.0032 (0.0438)	0.0037 (0.0438)	−0.0007 (0.0438)	0.0020 (0.0438)	−0.0013 (0.0439)
Spousal involvement	0.1320*** (0.0421)	0.1320*** (0.0421)	0.1330*** (0.0422)	0.1260*** (0.0424)	0.1270*** (0.0425)
Change in assets	0.0317*** (0.0049)	0.0319*** (0.0049)	0.0321*** (0.0049)	0.0298*** (0.0049)	0.0304*** (0.0051)
Competition	−0.4480*** (0.1580)	−0.4520*** (0.1590)	−0.4560*** (0.1580)	−0.4410*** (0.1600)	−0.4560*** (0.1610)
Number of employees	−0.0206 (0.0485)	−0.0210 (0.0485)	−0.0326 (0.0488)	−0.0328 (0.0489)	−0.0455 (0.0493)
New product	0.0428 (0.0394)	0.0435 (0.0395)	0.0375 (0.0395)	0.0279 (0.0401)	0.0230 (0.0404)
Age	0.0119 (0.0100)	0.0120 (0.0100)	0.0114 (0.0100)	0.0119 (0.0101)	0.0114 (0.0101)
Length of membership	−0.0136 (0.0117)	−0.0142 (0.0119)	−0.0136 (0.0117)	−0.0086 (0.0119)	−0.0095 (0.0122)
Arta Bina Umat	−0.1790 (0.2260)	−0.0933 (0.3940)	−0.3370 (0.2460)	−0.0791 (0.2290)	−0.0841 (0.4120)
Madani	0.3370 (0.2850)	0.4210 (0.4280)	0.1430 (0.3060)	0.4060 (0.2910)	0.3710 (0.4490)
Assakinah	−0.2560 (0.2110)	−0.2670 (0.2140)	−0.2520 (0.2110)	−0.1990 (0.2130)	−0.2120 (0.2170)
BKM	−0.1980 (0.2880)	−0.2100 (0.2920)	−0.6830 (0.4180)	−0.0147 (0.2940)	−0.5200 (0.4260)
Manufacture	0.0250 (0.1710)	0.0268 (0.1710)	0.0314 (0.1710)	0.0222 (0.1730)	0.0318 (0.1730)
Trading	0.0201 (0.1670)	0.0242 (0.1670)	0.0315 (0.1670)	−0.0208 (0.1690)	−0.0018 (0.1700)
Main covariates					
Lending scheme (LG = 1)	0.0955 (0.360)			0.1710 (0.3650)	
Gender (female = 1)			−0.4780 (0.2980)		−0.4800 (0.3000)
Money separation				0.4970*** (0.1550)	0.5020*** (0.1550)
Number of observation	453	453	453	453	453

Notes: Dependent variable is profit change (1 if decrease, 2 if about the same, and 3 if increase) used as a proxy of business performance. Unstandardised coefficients and standard error (in parentheses) are presented. *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$

needed to be reviewed promptly, the group's considerations were more often based on credit ceiling and track records of the applicants with little attention paid to the purpose of the loan. This might stimulate risk taking behaviour of the applicants (Fischer, 2013; Giné *et al.*, 2010), which possibly ends up with either business success or business failure. It might be true that group lending has a positive impact on business creation (Giné *et al.*, 2010); however, it does not necessarily mean that the performance will always be better.

This study also finds that there is no significant gender effect on microenterprises business performance, as shown in Models 3 and 5. Although the negative sign of the variable's coefficient might indicate that men-owned microenterprises are more likely to perform better than women-owned ones, the difference is not significant statistically. This rejects *H5*.

While credit schemes and gender do not significantly matter for performance, money separation apparently has an important role. The result of Models 4 and 5 in Table IV shows that the variable's coefficients are significant at 1 per cent level with positive signs confirming *H6*. Thus, holding other variables unchanged, microenterprises owned by micro-entrepreneurs who strictly separate their money for business from household use are more likely to experience better business performance compared to others. This finding provides an empirical support to the prior studies stating that borrowers' lack of self-discipline in using the loan could result in poor business performance and long-term dependence on external funding (Adams and Von Pischke, 1992; Imai *et al.*, 2010; Johnston and Morduch, 2008; Parker, 2009).

With relatively higher interest rate imposed on the loan, the inability of micro-entrepreneurs to properly manage the loan might cause a financial burden to the enterprises, especially if they are not able to generate higher profits to compensate the relatively higher interest costs, leading to long-term dependence on external finance. Conversely, if the entrepreneurs are able to strictly separate the money, they might have sufficient reserves for financing working capital and/or purchasing business assets to expand their business to generate more profit. This basic business practice appears to have benefited the performance of Indonesian microenterprises.

5. Policy implications

Considering the above findings, the first implication that can be drawn is that microcredit *per se* might not enhance microenterprise business performance. Results using both the 2010 (Atmadja *et al.*, 2016) and the 2014 data (this study) consistently show that microcredit negatively affects microenterprises' business performance. Parker (2009) points out those entrepreneurs are often unable to distinguish between consumption and business financing decisions. This argument is also supported by our study that respondents who strictly separated money for business and household expenses performed better in business. Hence, the lack of self-discipline or inability of micro-entrepreneurs to adequately manage finances might be a key factor, suggesting the important roles of business and financial management skills for microenterprise success. To enhance business performance, micro-entrepreneurs should not only be provided with easy access to finance but also be equipped with sufficient abilities to appropriately manage their business. For example, evidence from Tanzania shows that enterprises whose owners received business training performed better than those that did not (Kuzilwa, 2005). Our study highlights that training, mentorship, advisory services (in marketing, business and management), as well as networking services, should ideally complement microcredit; alternatively, as has been suggested by Karlan and Zinman (2011), lenders should carefully monitor the use of the loans. In addition, the most current study of self-employed business owners in developing countries conducted by Campos *et al.* (2017) suggests that a psychology-based personal initiative training approach, which inculcates a proactive mindset and focuses on entrepreneurial behaviour, might also be considered complements of microcredit in boosting microenterprise business success.

Alternatively, as has been suggested by Fafchamps *et al.* (2011), to overcome the micro-entrepreneurs' self-control problem or lack of self-discipline, especially in utilising microcredit, microcredit might be provided "in-kind" (e.g. purchasing equipment, inventories or raw materials), instead of in cash. This would ensure that the loan is invested in business; hence, it might help avoid using the loan for other purposes. Evidence shows a stronger impact of in-kind loans than of cash loans on business profits because more in-kind loans than cash loans end up in business (Fafchamps *et al.*, 2011). Thus, it appears more effective for MFIs to help micro-entrepreneurs provide their business needs (i.e. equipment, inventories or raw material) by paying the money to the suppliers rather than giving cash to the entrepreneurs. Nevertheless, different cultural backgrounds and gender compositions between the Ghanaian study and this study should also be considered carefully when implementing this suggestion in Indonesia.

Regarding microcredit lending schemes, group-lending scheme might not provide any additional benefits to microenterprise business performance. Participating in a lending group, ideally, might assist its members in growing their business if activities if the group meetings can focus on business-related conversations. This is particularly to give members opportunity to acquire information that might not directly available to a particular individual. The information might help them not only discover or create opportunities in the market (Shepherd *et al.*, 2007), but also to improve enterprise performance (Bruderl and Preisendorfer, 1998). Besides reducing the group size, the ability of loan officers, the representatives of microcredit providers, and group leaders could play key roles in encouraging members to have more business-related conversations.

Non-financial factors (i.e. human capital and spousal involvement) appear to be important for business success as well. Thus, it might be useful for policy makers to consider these factors as well in developing appropriate policies.

6. Conclusion

Essentially, this study attempts to mitigate the limitations of a recent study by Atmadja *et al.* (2016), which apparently was the first to test the effect of microcredit on the performance of microenterprises in the case of Indonesia and finds a negative relationship. The limitations of that study, based on a survey of women microenterprises undertaken in 2010 in Surabaya, Indonesia's second largest city, included relatively small sample, lacked heterogeneity, and focussed only on women. The present study is based on an extended and updated survey of microenterprises in Surabaya – with a larger, more heterogeneity sample, and includes men-owned enterprises.

In addition to testing the main findings of the Atmadja *et al.* (2016) study, we investigate if different lending schemes (group vs individual), gender and a micro-entrepreneurs' ability and/or willingness to separate their personal/consumption expenses from business – which we call "money separation" – might matter for business performance. Overall, we find that even with a much larger sample, including both men and women-owned microenterprises and greater heterogeneity, microfinance by itself may not necessarily improve business performance. Thus, our findings, by and large, confirm the findings of the Atmadja *et al.* (2016) study and conform to the strand of research which argues that microfinance may not really matter for microenterprise business performance. We also find that while microcredit schemes (individual vs group) and gender effects may not matter significantly, money separation does appear to have a positive and significant relationship with performance. Thus, on the policy front, this paper recommends that non-financial factors such as human capital, spousal involvement, and money separation be considered as important factors for improving microenterprise business performance in the case at least of Indonesia, with less focus on microfinance *per se*.

Future studies might involve an even larger, more balance and more heterogeneous sample size from across Indonesia. The inclusion of more male respondents and more

variables affecting the microenterprises' business performance might be taken into consideration as well. It might also be necessary to provide a deeper explanation of the relationships noted in this study, for example, why loan size has a negative effect on profit but not on sales, why social ties/networks do not matter to performance, and whether applying alternative credit schemes (e.g. individual credit scheme) might differently affect business performance.

Notes

1. The Bank Priyayi of Purwokerto established in 1895 has been known as the first formal commercial microfinance institution in Indonesia (BWTP, 2013; Holloh, 2001).
2. Many microfinance providers in developing economies rely on joint liability for their business operations as a means to induce peer monitoring and reduce *ex ante* (Armendariz de Aghion and Morduch, 2005; Banerjee *et al.*, 1994; Stiglitz, 1990) as well as *ex post* (Besley and Coate, 1995; Bhole and Ogden, 2010) moral hazard over investment choice particularly in the absence of collateral and the providers' credit screening. However, if trust between members of a lending group is low, along with little enforcement of contracts, this may also become liabilities for the microfinance providers.
3. Women's social networks emphasise interpersonal relationships over instrumental relationships; hence women are exposed to fewer business-relevant sources (Brush, 1992).
4. Since the microcredit providers are formally registered as multipurpose cooperatives and some of their funding sources come from commercial banks' debts which apply standard conventional banking procedures, they might not be able to strictly implement sharia principles on their lending operations.
5. Karlan and Valdivia (2010) measure money separation as a binary variable equal to 1 if the MFI's client thinks that is not necessary to separate her money from that of her husband or partner or another adult in the household to control expenses and savings. It is treated as a dependent variable.
6. For the operational definition of the selected variables, please refer to Atmadja *et al.* (2016).
7. The data also show that less than 5 per cent of the group-lending respondents listed their lending group as becoming their main source of business ideas.

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