Mobile Financial Services for Women in Indonesia: A Baseline Survey Analysis

James C. Knowles

Abstract

This report presents analysis of baseline data on 4,828 business owners (2,852 females and 1.976 males) from 401 mainly rural villages in five districts (kabupaten) of East Java province, Indonesia. These data were collected as the baseline data for an impact evaluation of the Mobile Financial Services for Female Entrepreneurs project. The report first examines gender differentials in earned income and savings, finding consistently sharp gender differentials favoring male entrepreneurs. The report next examines important gender differentials in observed endowments (e.g., age, schooling, business and household assets, willingness to take risks) as factors that may account for at least some of the observed gender differentials in outcomes.

Multivariate analysis (propensity score matching) is then used to assess how much of the observed gender differentials in outcomes remains after entrepreneurs are effectively matched on the basis of their observed endowments. The report finds that gender differences in entrepreneurs' observed endowments account for less than one-third of the observed gender differentials in total earned income and total savings, although they account for higher shares of the observed differentials in some other outcomes (e.g., profit from a second business, recommended business practices, ownership of a second business, business registration).

The report next identifies which endowments and outcomes vary significantly between successful female and male entrepreneurs, with "success" defined on the basis of the entrepreneurs' combined profits from primary and second businesses. This analysis finds that many of the same outcomes vary sharply between successful female and male entrepreneurs, while relatively few of the gender differences in these differences vary significantly between females and males.

An annex to the report uses multivariate analysis to investigate the potential for reducing gender disparities in business profits if women were to engage in the same types of businesses as men. The analysis finds that even if women were to engage in the same types of businesses as men, without altering the sharp gender disparities in profits for each type of business, there would be little effect on the overall gender disparity in profits.

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Contents

1. Introduction

This report presents analysis of baseline data on 4,828 business owners (2,852 females and 1.976 males) from 401 mainly rural villages in five districts (*kabupaten*)[1] of East Java province, Indonesia. These data were collected as the baseline data for an impact evaluation of the Mobile Financial Services for Female Entrepreneurs project.[2] The project's objective is to identify cost-effective and sustainable approaches to implementing branchless banking and business training that lead to increased saving and investment by female entrepreneurs, with the ultimate objective of increasing their incomes. The sample villages are rural or semi-rural villages selected by Bank Mandiri as suitable sites for introducing mobile money services. Village listings of entrepreneurs were prepared as the basis for randomly selecting 12 business owners (entrepreneurs) in each sample village (i.e., 7 females and 5 males).[3] In addition to owning at least one currently operating non-farm business, the surveyed entrepreneurs were required to meet the following criteria: (1) ages 18-55, (2) residents in the sample villages, and (3) have a mobile phone with an active account. The data were collected in two waves (Phase 1: 107 villages in Bojonegoro, Tuban and Ngawi districts from 11 November 2016 to 20 February 2017; Phase 2: 294 villages in all five districts from 17 July to 23 November 2017). The interviews were conducted using a computer-assisted personal interview (CAPI) system with pre-programmed consistency and outlier checks and with the interviewers entering information electronically (using a laptop) during the interviews. Processing of the baseline data was completed on 22 January 2018.

This report focuses on gender differences in entrepreneurs' earned incomes and savings as particularly important outcomes, although it also gives considerable attention to other outcomes (e.g., adherence to recommended business practices). Outcomes are defined as variables determined by entrepreneurs' current decisions, as distinct from entrepreneurs' "endowments," which are determined either exogenously (age, sex) or are pre-determined by previous decisions (e.g., household and business assets, completed levels of schooling). The implicit assumption is that entrepreneurs' outcomes are causally linked to their endowments, although the causal links are complex in many cases.[4]

The report first examines gender differentials in earned income and savings, finding consistently sharp gender differentials favoring male entrepreneurs (section 2). The report

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[1] The sample districts include Bojonegoro (73 villages), Ngawi (101 villages), Tuban (72 villages), Lamongan (140 villages) and Gresik (15 villages). Survey Meter. 2018. "Field Report: Impact Evaluation Baseline Survey." Report to the Center for Global Development, Jogjakarta (February).

[2] Data were also collected on one or two Bank Mandiri mobile banking agents in each sample village, but these data are not analyzed in this report. All project interventions are randomly assigned to either to female entrepreneurs of mobile banking agents.

[3] This was the target. However, the actual sample numbers differed in some villages that did not have a sufficient number of female and/or male entrepreneurs. See previously referenced Survey Meter report for details.

[4] For example, some outcomes are also causally related to other outcomes (e.g., savings to earned income), while at least some of the pre-determined endowments are likely to include unobserved factors that also affect some outcomes (e.g., characteristics like innate ability and motivation that are likely to affect both schooling and earned incomes).

next examines important gender differentials in endowments as factors that may account for at least some of the observed gender differentials in outcomes (section 3). Multivariate analysis (propensity score matching) is then used to assess how much of the observed gender differentials in outcomes remains after entrepreneurs are effectively matched on the basis of their observed endowments (section 4). The report finds that gender differences in entrepreneurs' observed endowments account for less than one-third of the observed gender differentials in total earned income and total savings, although they account for higher shares of the observed differentials in some other outcomes (e.g., profit from a second business, recommended business practices, ownership of a second business, business registration). The report next identifies which endowments and outcomes vary significantly between successful female and male entrepreneurs (section 5), with "success" defined on the basis of the entrepreneurs' combined profits from primary and second businesses. This analysis finds that many of the same outcomes vary sharply between successful female and male entrepreneurs, while relatively few of the gender differences in these differences (GDIDs) vary significantly between females and males (the main exceptions are differences in savings and business assets that vary so sharply in magnitude between females and males). The report's conclusions are presented in section 6.

2. Gender differentials in earned income and savings

This section of the report presents data on gender differentials in earned income and savings. The data on earned income refer to average monthly business profit or on average monthly wage and salary earnings during the past 12 months. The data on profits are based on a single question about average monthly business profits during the last 12 months in primary, second and other businesses. Although a few zero values are reported for business profits, no negative values are reported. Since business losses are common among entrepreneurs, measurement error is very likely present in the reported profit data.[5] However, there is no reason to believe that the level of measurement error from this source varies with either sex or other characteristics of the entrepreneurs.

The data on savings were collected from questions on whether entrepreneurs saved at all during the past 12 months in various savings instruments (e.g., formal bank account, at home, in a ROSCA), and if so, the amount saved during the past 12 months in each saving instrument. The data on reported savings are winsorized in a few cases to remove outliers, i.e., the three highest reported values of savings in a formal bank account and the highest value of savings in an informal network. There are no other outliers in the savings data.

2.1 Earned income

Figure 1 presents data on the two main sources of entrepreneurs' average monthly total earned income during the past 12 months: (1) average monthly profit from the entrepreneur's primary business (and second businesses, if present), and (2) average monthly

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[5] Data were collected on the business revenue and expenses of the agents, and about one-third of agents report negative profits (losses) when profits are calculated as the difference between reported revenue and expenses.

income from other sources (i.e., profits from other business and wage and salary earnings). These data indicate that there are sharp differentials favoring males in both main sources of earned income but that the gender differential in other income favoring males is much larger than that in profit from the entrepreneur's primary and second businesses.

Figure 1. Entrepreneur's average monthly earned income (Rp. millions) during the last 12 months by main source and sex
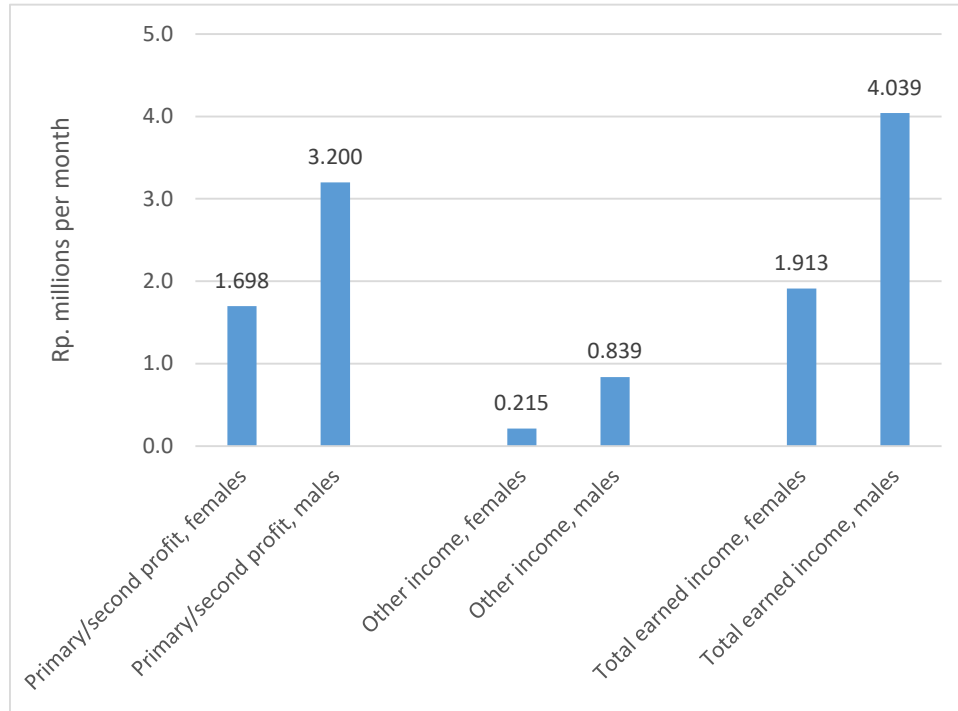
Figure 2 provides more detail on gender differentials in the various sources of average monthly earned income. According to these data, the gender differential favoring males in average monthly profit from an entrepreneur's second business (which includes zero values for entrepreneurs without a second business) is larger than that in average monthly profit from the first business.[6] The data in Figure 2 also indicate that the gender differential favoring males in average monthly other profits (i.e., average monthly profits from businesses other than the entrepreneurs' primary and second businesses) is even sharper (more than 4:1), while that of average monthly wage and salary earnings is more than 3:1.

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[6] Male entrepreneurs are also more likely to have a second business (19.1 percent versus 15.6 percent).

Figure 2. Entrepreneurs' average monthly earned income (Rp. millions) during the last 12 months by source and by sex
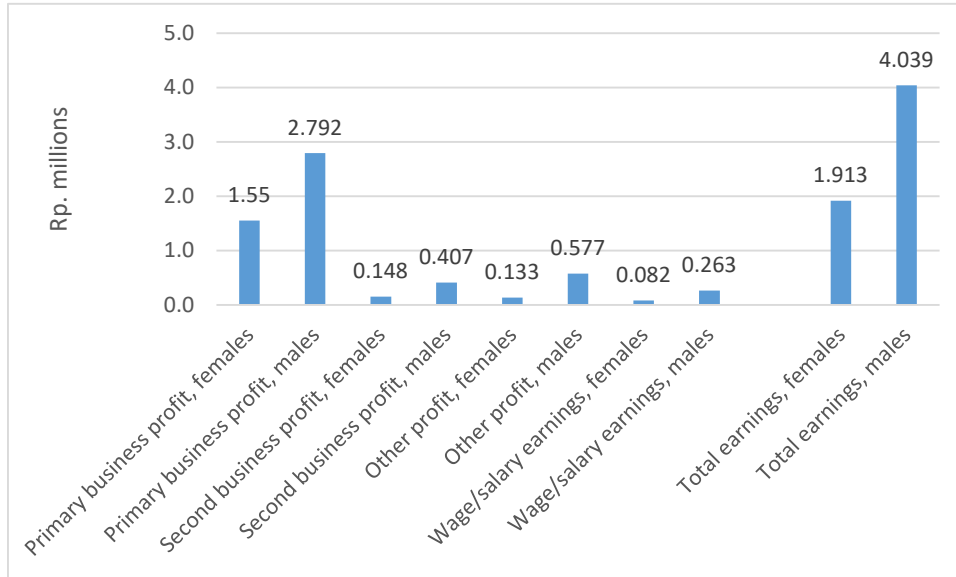
Figure 3 shows the relationship between entrepreneurs' average monthly total earned income and their age and sex. These data indicate that the gender differential uniformly favoring males is narrowest (1.81) in the youngest age group (18-25), widening substantially to 2.49 in the next older age group 26-30 and remaining at approximately 2:1 in the other age groups.

Figure 3. Entrepreneurs' average monthly total earned income (Rp. millions) during the last 12 months by age group and sex
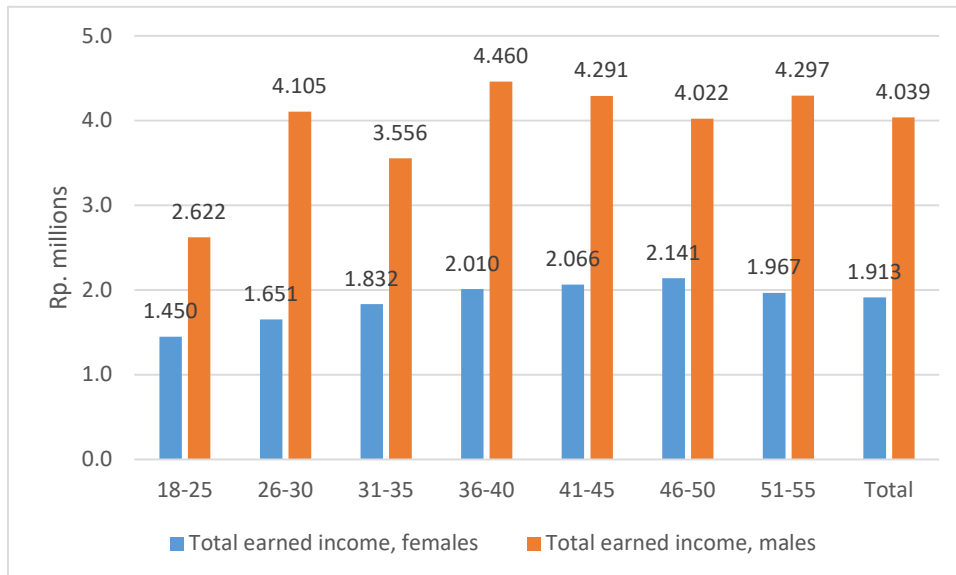
2.2 Savings

Figure 4 presents data on whether entrepreneurs reported any saving during the past 12 months by age and sex. These data indicate that female entrepreneurs are more likely to have reported any saving, both overall (84 percent females versus 69 percent males) and in all age groups. The data in Figure 4 also indicate that the percentage of both female and male entrepreneurs reporting any saving is highest in the youngest age group (90 percent female versus 80 percent male) and decreases steadily with age, reaching only 68 percent female and 57 percent male in the age group 51-55.

Figure 4. Any savings during the past 12 months (%) by age and sex
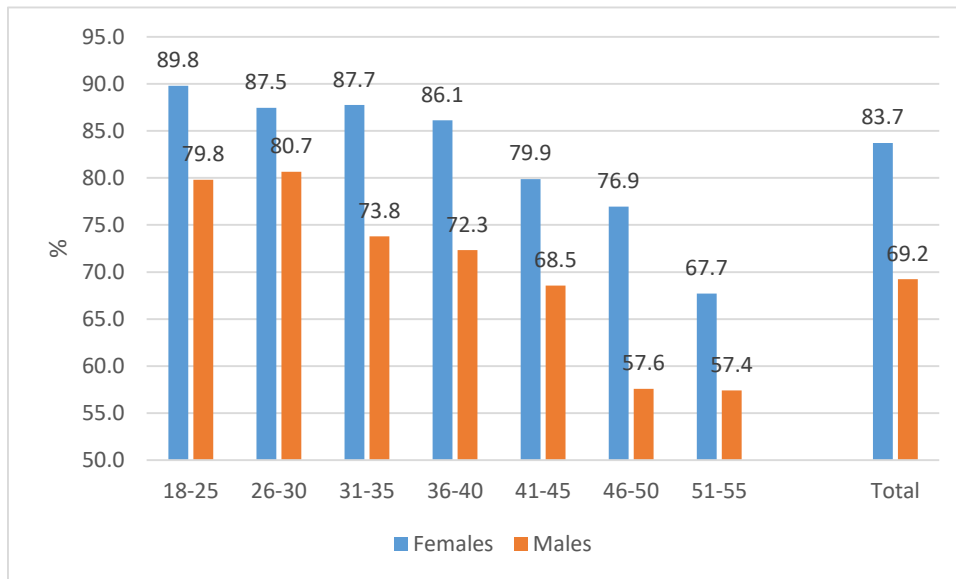
Figure 5 shows total reported savings (in Rp. millions) during the past 12 months by age and sex, with the totals including zero values for entrepreneurs not reporting any saving. These data indicate that the average total savings of male entrepreneurs is substantially higher both overall (Rp. 11.0 million male versus Rp. 6.1 million female) and in all age groups. Since the data in Figure 5 include zero values for non-savers, the gender differentials are even larger if the data are conditional on some reported saving (based on the data in Figure 4). The data in Figure 5 also indicate that there is no systematic relationship either among females or males between age and the amount saved. However, the fact that the proportion of entrepreneurs reporting zero savings tends to increase with age among both female and male entrepreneurs (Figure 4) implies that there is some tendency for savings conditional on at least some reported saving to increase with age (unreported data).

Figure 5. Total reported savings during the last 12 months (Rp. millions) by age and sex
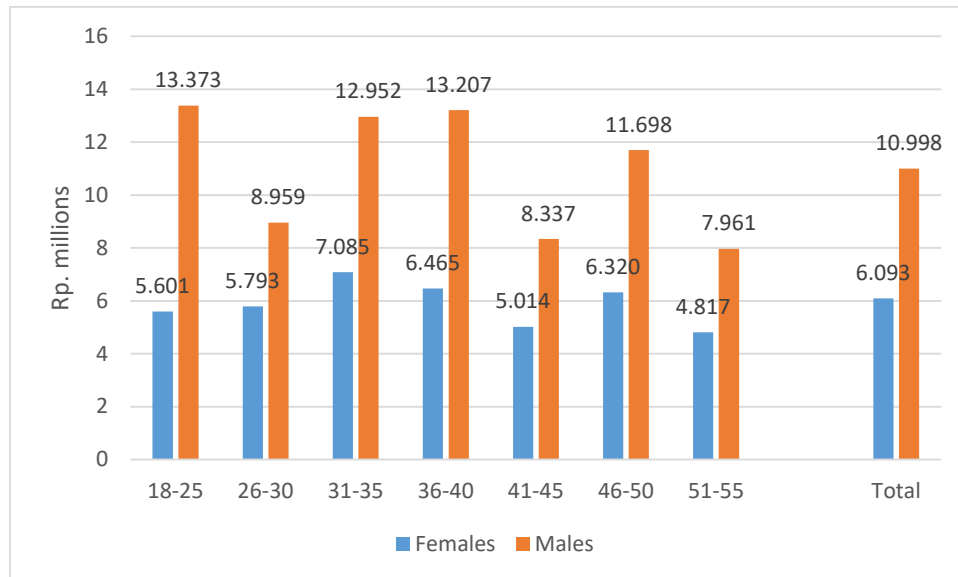
Figure 6 presents data on the ratio of total reported savings during the past 12 months to annualized total earnings (i.e., average monthly total earnings during the last 12 months multiplied by 12).[7] These data show that, although female entrepreneurs saved significantly less in absolute amounts, they saved substantially more in relation to their reported earned incomes than males, both overall (almost 2:1) and in all age groups. The data in Figure 6 also indicate that the savings ratio among both female and male entrepreneurs decreases steadily with age. This is contrary to the usual life-cycle pattern in which savings ratios tend to be relatively low among both the young and the old.

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[7] Some of the reported ratios are very large, possibly in part due to the use of an annualized monthly variable in the denominator. In order to remove outliers, the highest two percent of reported values are winsorized in Figure 6 (i.e., set equal to the next highest reported values)

Figure 6. Savings during the last 12 months as a percentage of annualized average monthly total earnings (%) by age group and sex
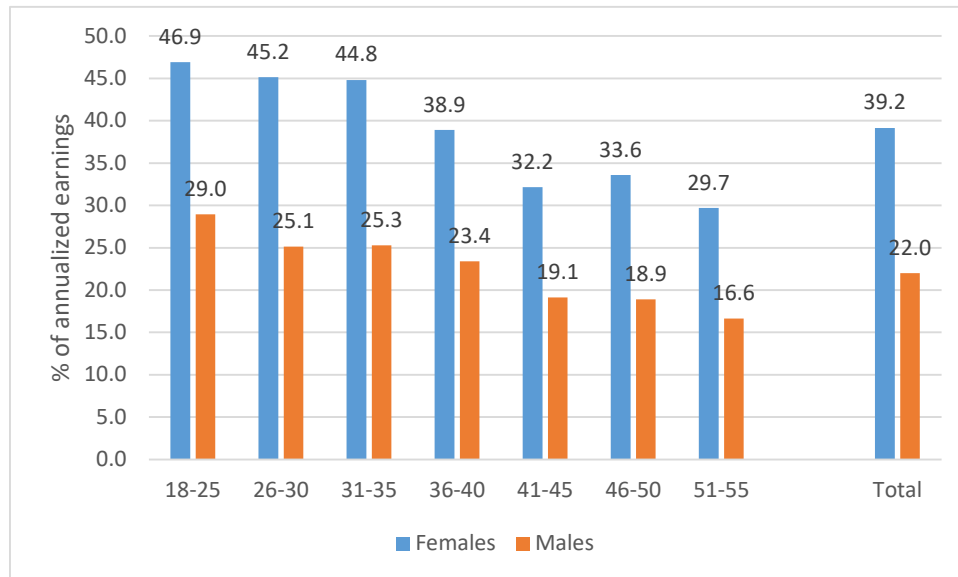
Note: the top 2 percent of the reported saving ratios are winsorized.

Figure 7 presents data on the percentage of entrepreneurs reporting any savings during the past 12 months in various saving instruments.[8] These data indicate that the largest gender differentials in any saving instrument are for saving in an informal network and saving in a ROSCA (both favoring females). In contrast, the gender differential for saving in a formal bank account favors males.

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[8] The "other saving" category includes saving in an e-savings account, saving with friends and family, saving in a cooperative, saving in an Islamic Economic Cooperative (BMT), and all other forms of saving.

Figure 7. Any savings during the last 12 months (%) by saving instrument and sex
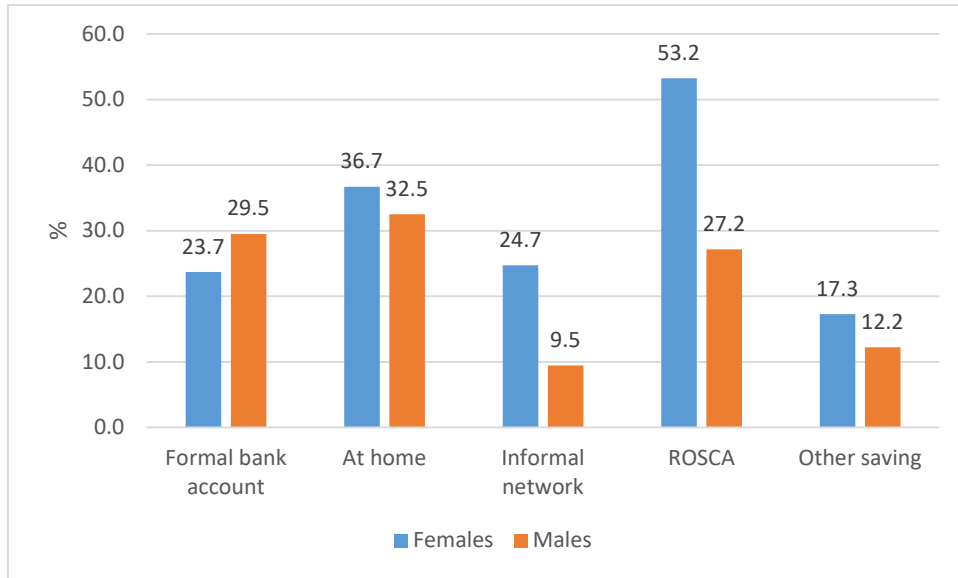
Figure 8 presents data on the amount of reported savings during the past 12 months (in Rp. millions) by saving instrument. These data indicate that there are large gender differentials (favoring males) in saving in a formal bank account (more than 3:1) and at home (almost 2:1), whereas there are smaller gender differentials (favoring females) in saving in a ROSCA or in other saving instruments.

Figure 8. Amount of savings during the last 12 months (Rp. millions) by savings instrument and sex
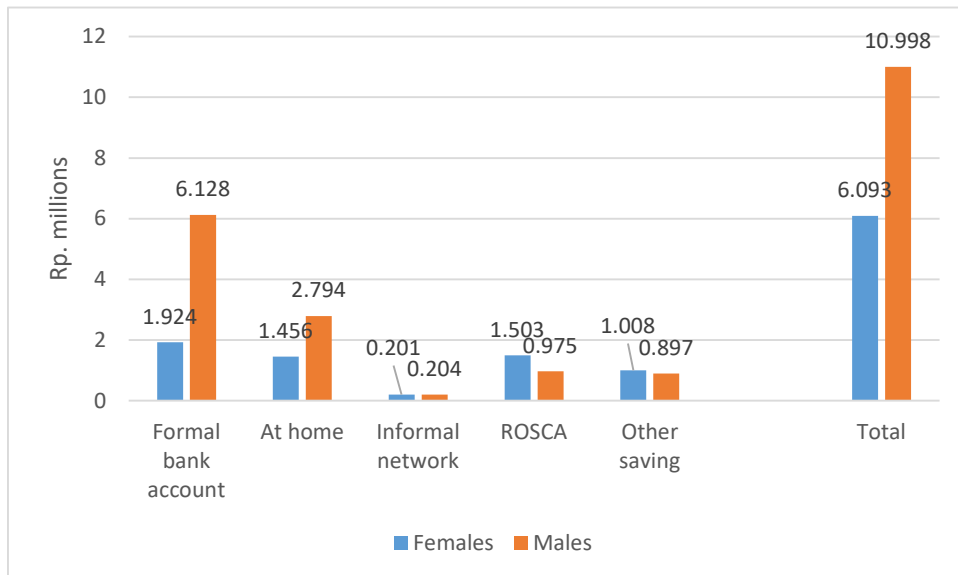
3. Gender differentials in entrepreneurs' endowments

This section of the report presents data on the largest gender differentials in entrepreneurs' endowments, including age, marital status, completed levels of schooling, household wealth, business assets and household size. Figure 9 shows the percentage distributions of sample female and male entrepreneurs by age group. These data indicate that female entrepreneurs are more heavily represented in the younger age groups (18-40), whereas male entrepreneurs are more heavily represented in the older age groups (41-55). This difference in the age structure of sample female and male entrepreneurs is important because, as the subsequent charts indicate, several gender differentials in other endowments vary importantly with the entrepreneur's age.

Figure 9. Percentage distributions of female and male entrepreneurs by age group
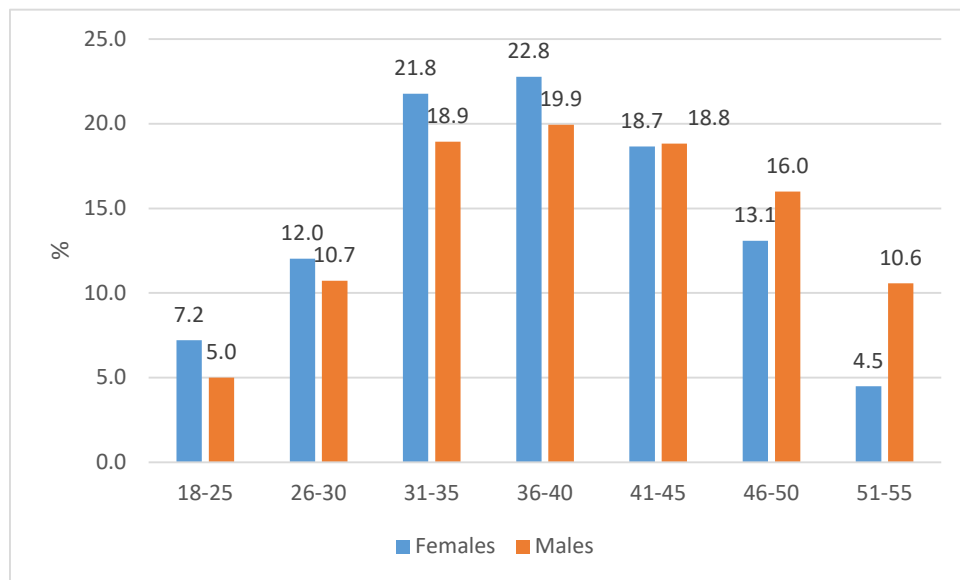
Figure 10 shows the percentages of female and male entrepreneurs who are currently married by age group. Marital status is an important endowment for entrepreneurs because it is a significant positive determinant of the number of unpaid workers in an entrepreneurs' primary and second businesses.[9] The data in Figure 10 indicate that whereas female entrepreneurs are only slightly more likely overall to be currently married (91 percent versus 90 percent male), they are significantly more likely to be currently married in the two youngest age groups (18-30), whereas male entrepreneurs are significantly more likely to be married in the three oldest age groups (41-55).

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[9] In an unreported Poisson regression with the number of unpaid workers as the dependent variable and with several other theoretically relevant factors among the right-side variables (e.g., the entrepreneur's own labor inputs, the number of paid workers, household size), a currently married entrepreneur is estimated to have 0.122 more unpaid workers in a typical month (p=0.000), other factors equal.

Figure 10. Percentage of entrepreneurs who are married by age group and sex
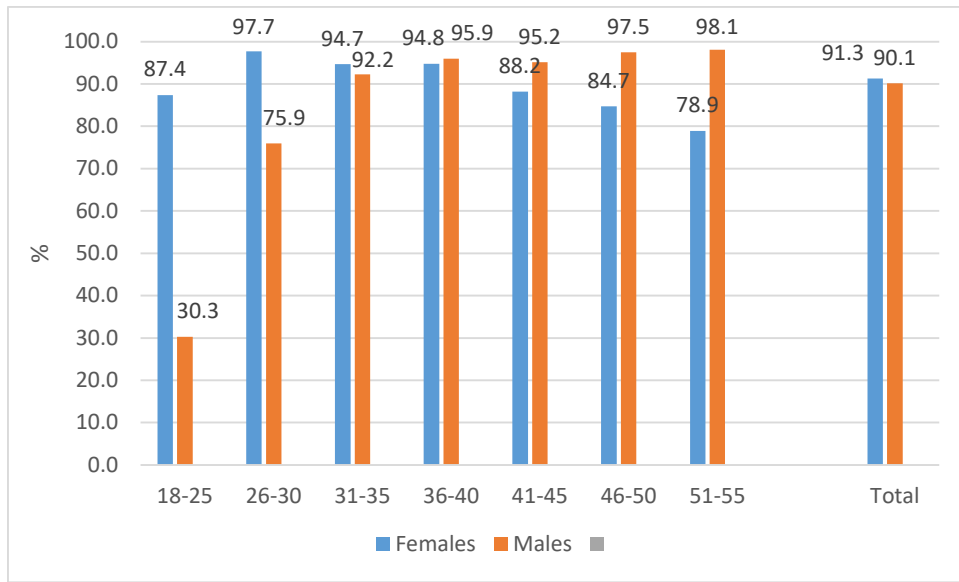
Figure 11 presents data on the percentages of female and male entrepreneurs who have completed at least upper secondary schooling by age group. These data indicate that male entrepreneurs are more likely to have completed upper secondary schooling in all age groups and that the gender differential is widest in the youngest age group (18-25). Moreover, the data show no systematic tendency for the gender gap in schooling to have narrowed over time.

Figure 11. Percentage of entrepreneurs who have completed at least upper secondary schooling by age group and sex
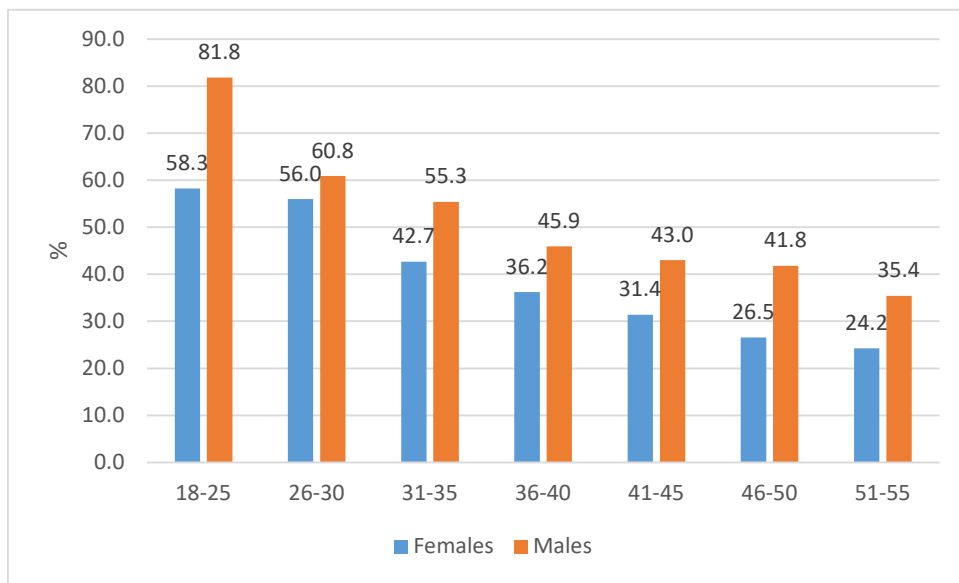
Figure 12 shows average values of the household asset index (a measure of household wealth) by age and sex.[10] These data indicate that female entrepreneurs come from wealthier households overall (i.e., the average asset index value is +0.049 among females, compared to -0.071 among males). The gender differential in household wealth favors females in all age groups except the two age groups 18-25 and 41-45 and is largest in the age group 46-50 (+0.35).

Figure 12. Value of household asset index by age group and sex
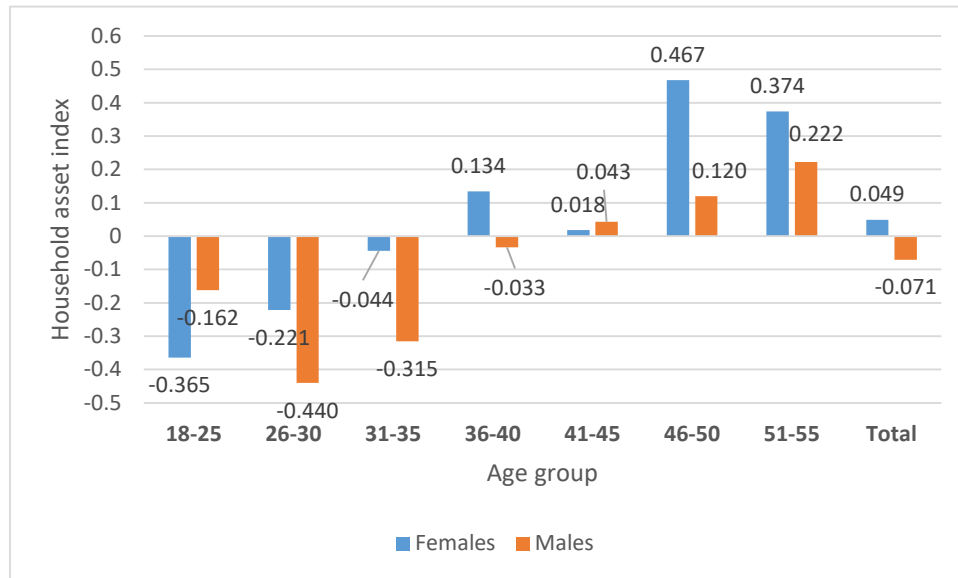
Figure 13 shows the reported average total value of business assets (in millions of Indonesia Rupiah) for female and male entrepreneurs by age group. These data indicate that the overall gender gap in the total value of business assets is more than 2:1 favoring males and that it tends to increase with the age of entrepreneurs, reaching a maximum of more than 3:1 in the oldest age group (51-55).

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[10] The household asset index is equal to the first principal component of a large number of indicators referring to housing characteristics and household consumer durable ownership that are standardized to have a mean of zero and a standard deviation of one.

Figure 13. Total value of reported business assets (Rp. millions) by age group and sex
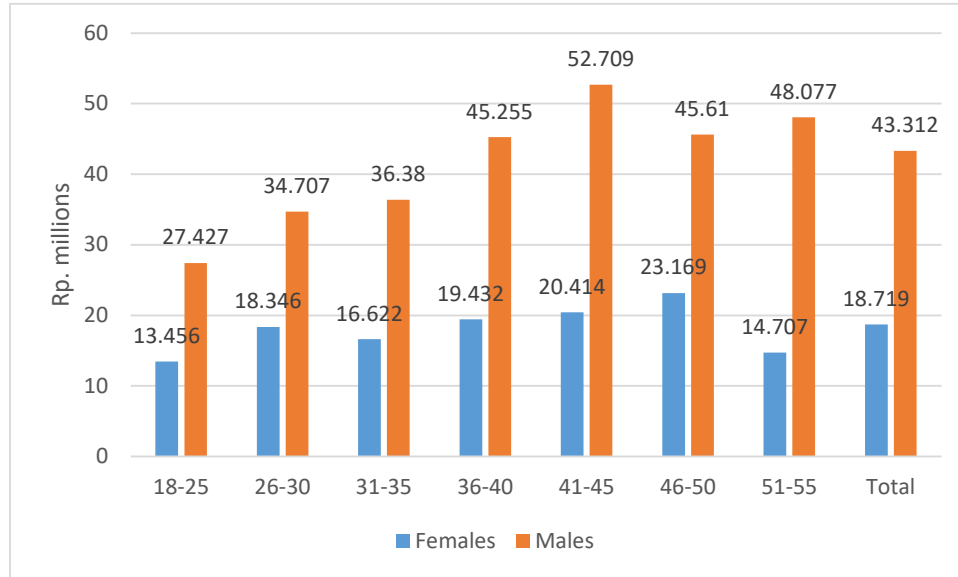
Figure 14 shows average household size by entrepreneurs' sex and age group. Household size is an important endowment because it is also significantly related (positively) to the number of unpaid workers working in an entrepreneurs' primary and second business(es).[11] The data in Figure 14 indicate that the average household size of male entrepreneurs is significantly larger than that of female entrepreneurs, not only overall (4.80 male versus 3.99 female) but also in every age group.

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[11] In an unreported Poisson regression with the number of unpaid workers as the dependent variable and with several other theoretically relevant factors among the right-side variables (e.g., the entrepreneur's own labor inputs, the number of paid workers, marital status), each additional household member is estimated to increase the number of unpaid workers by 0.063 (p=0.000), other factors equal.

Figure 14. Household size by age and sex
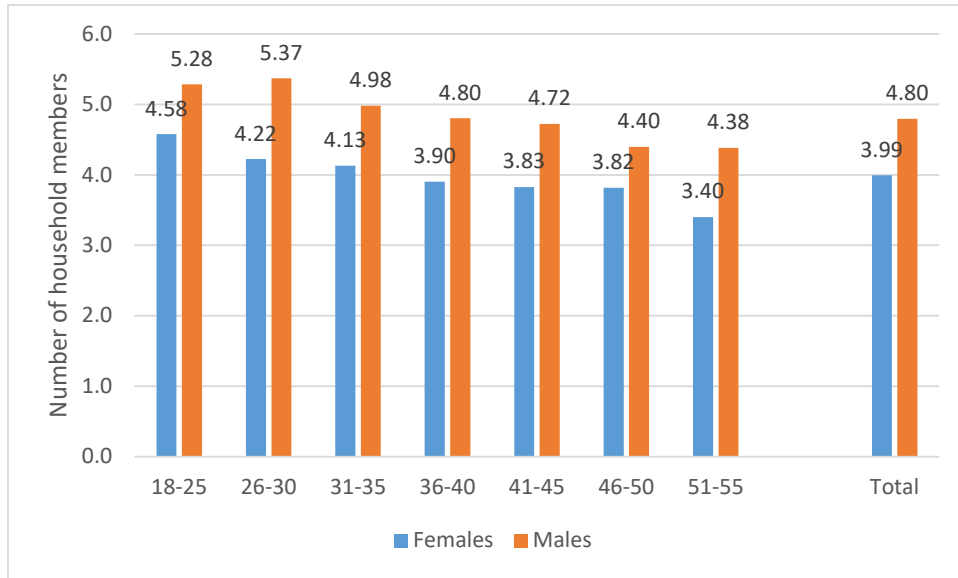
4. Multivariate analysis

4.1 Statistical methods

The data presented in sections 2 and 3 raise an important question, i.e., How much of the observed differences in entrepreneurs' earned income, savings and other key outcomes can be explained by differences in their endowments? For example, do female entrepreneurs still save less than male entrepreneurs when their endowments are similar? This question is important because the answer suggests the potential for reducing gender gaps in key outcomes such as earned incomes and savings by directly improving the endowments of female entrepreneurs (e.g., transferring income or business assets them). One approach to answering this question would involve specifying regression equations to explain variations in each outcome, with right-side variables including indicators of entrepreneurs' endowments. However, statistical problems arise on both sides of such regression equations. On the left-hand side, some of the dependent variables are highly skewed (e.g., earned income and savings), others are bounded by and/or have high concentrations of zeroes (e.g., amounts saved), while others are ordered discrete variables (e.g., index of business practices, number of paid and unpaid workers). On the right-hand side, many of the covariates (endowments) clearly interact with sex and with each other, as indicated by the data presented in section 3. Some of the relationships may also be non-linear. Under these circumstances, robust and reliable estimates of the true effect of sex with other variables held constant are likely to be elusive.

An alternative approach to holding entrepreneurs' endowments constant is to compare the outcomes of a sample of female and male entrepreneurs who are well matched in terms of

their endowments. One might think that finding such a sample would be difficult, given that the endowments of female and male entrepreneurs are so different, based on the data presented in section 3. However, this turns out not to the case. One of the most practical and commonly used methods for matching two groups of sample individuals (for example, those treated in an experiment with those not treated) is propensity score matching (PSM). PSM involves two discrete steps. In the first step, a propensity score is estimated for all sample individuals that effectively discriminates between them (e.g., those treated and those not treated, or in this case, female and male entrepreneurs). The propensity scores are typically obtained from an estimated probit (or logit) regression model in which the dependent variable is a binary variable defining the two groups (in this case, 0=male and 1=female) and a rich set of variables referring to endowments as right-side variables (but excluding the outcomes to be analyzed for remaining gender differences).[12] In this case, estimation of the propensity score using a probit function applied to 4,814[13] sample entrepreneurs was quite successful (e.g., the pseudo R-squared is 0.165, $chi^2(131)=1,074.3$, $p>chi^2=0.000$), with 58 of the 131 estimated coefficients (44.3 percent) statistically significant at the 0.05 level or above.[14]

The second step is to match the female entrepreneurs with the male entrepreneurs on the basis of their estimated propensity scores (pscores). Figure 15 shows that the distributions of the estimated pscores prior to matching are quite different between females and males, as expected. However, Figure 15 also shows that the two distributions overlap almost completely, i.e., there are male entrepreneurs with the same or similar estimated pscores for most female entrepreneurs.[15] This second property is convenient for PSM. There are many different methods available for PSM. One of the simplest is "nearest neighbor matching" in which sample individuals are first sorted according to their estimated pscores and then "treated" individuals (female entrepreneurs in this case) are matched with the "nearest control" (in this case, the male entrepreneur with the pscore nearest in value to that of the "treated" female). However, a more effective matching method in the present case was found to be kernel matching, in which male entrepreneurs receive weights reflecting how

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[12] The right-side variables in this case include binary variables referring to age group (7 categories), highest level of schooling completed (5 categories), cognitive ability (5 categories), whether currently married (0-1), whether the entrepreneur has any children (0-1), the number of children (6 categories), willingness to take risk (10 categories), household size (10 categories), household asset quintile (5 categories), business asset quintile (5 categories) and interactions between currently married and age group (7 categories), willingness to take risk and age group (70 categories), and household asset quintile and age group (35 categories). Variables such as district of residence and urban-rural location are not included because sex is uncorrelated with location due to the sample design.

[13] 14 observations were dropped from the probit estimation sample due to incomplete data on one or more of the right-side variables.

[14] After omitting one variable from each group of binary variables (the omitted category), which is represented by the constant term, there are a total of 131 right-side variables in the estimated probit model. Results are available from the author on request.

[15] In fact, in this case, only 7 female entrepreneurs with very high estimated pscores for which there are no male entrepreneurs with estimated pscores in the same range. These 7 female entrepreneurs are considered to be "off-support" and are dropped from the sample used to obtain the reported matching estimates.

different their pscores are from each female entrepreneur in a broader "neighborhood."[16] Figure 16 compares the distributions of the estimated pscores for female entrepreneurs with those of the matched male entrepreneurs, indicating that the matching was successful.[17] In fact, re-estimating the same probit model with the matched sample obtains a statistically insignificant relationship (pseudo R^2=0.014, chi²(131) =77.99, p>chi²=0.999).[18] After matching, only two of the estimated gender differences in the covariates (i.e., right-side indicators of endowments) are statistically significant at the 0.05 level (compared to 58 gender differences prior to matching). Figure 17 and Figure 18 compare the pre- and post-matching distributions of the natural logarithm of the total value of business assets, a highly skewed endowment with the largest pre-matching gender gap (Figure 13).[19]

Figure 15. Estimated propensity scores by sex prior to matching

kernel = epanechnikov, bandwidth = 0.0344

Figure 16. Estimated propensity scores by sex after matching

Kernel density estimate

kernel = epanechnikov, bandwidth = 0.0344
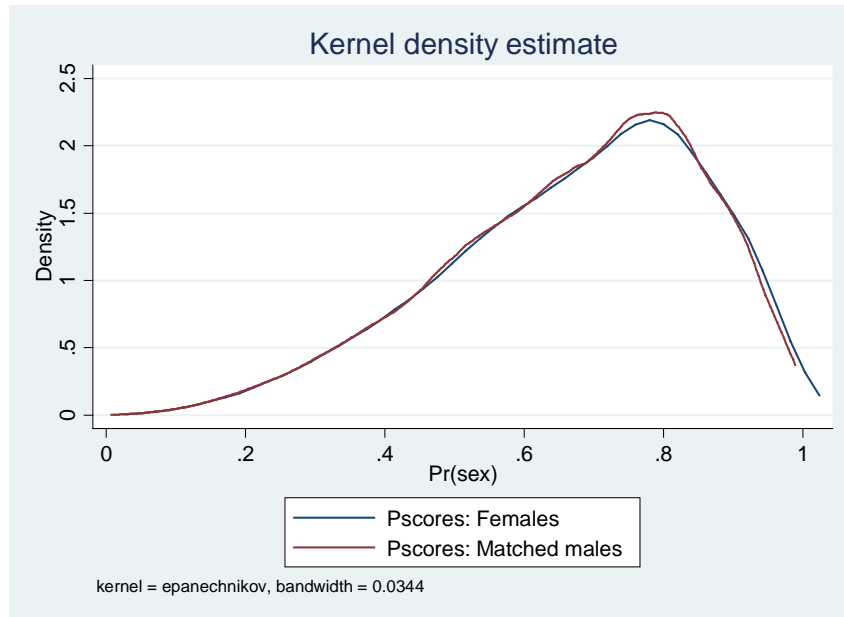
Figure 17. Natural log of the value of total business assets (Rp. millions) by sex prior to matching

Kernel density estimate

kernel = epanechnikov, bandwidth = 0.2956
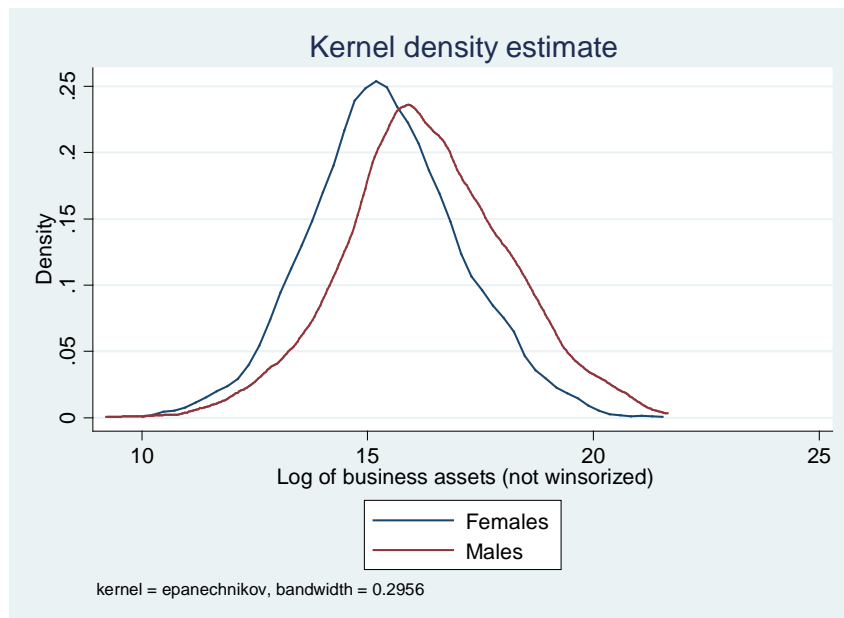
Figure 18. Natural log of the value of total business assets (Rp.) by sex after matching
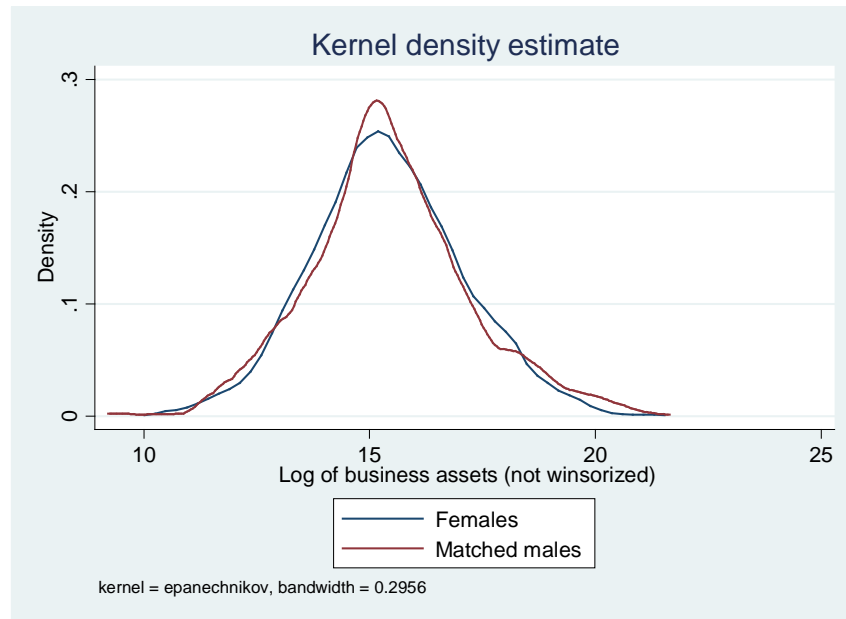
4.2 Comparison of pre-matching and post-matching outcomes

Table 1 compares the pre-matching and post-matching gender differentials in earned income, savings and other outcomes, together with their estimated standard errors and statistical significance. The charts presented and discussed below are based on Table 1. Positive estimated gender differentials are those favoring females, whereas negative estimated gender differentials favor males. The error bars refer to the estimated standard errors (not to 95 percent confidence intervals).[20]

4.2.1 Earned income

Figure 19 shows pre- and post-matching estimates of gender differentials in average monthly earned income by source, all of which favor males. These data indicate that matching on the entrepreneurs' endowments reduces gender differentials in three of the four sources of earned income. The exception is wage and salary earnings, for which the relatively small gender differential is virtually unchanged after matching. In the case of profit in a second business, the gender differential after matching becomes statistically insignificant. However, the relatively large gender differentials in average monthly profit in the entrepreneurs' primary and other businesses lead to a post-matching estimate of the gender differential in average monthly total earned income that is only 32 percent lower than its pre-matching

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[20] 95 percent confidence intervals would be approximately twice as long as the displayed error bars. It is noted that the estimated standard errors are not adjusted to reflect that the propensity score is estimated nor for sample clustering at the village level.

value. These results suggest that other factors (e.g., social customs and gender discrimination) account for the remaining statistically significant gender differential of almost Rp. 1.5 million per month.

Figure 19. Pre- and post-matching estimates of gender differentials in average monthly earned income (Rp. millions) by source
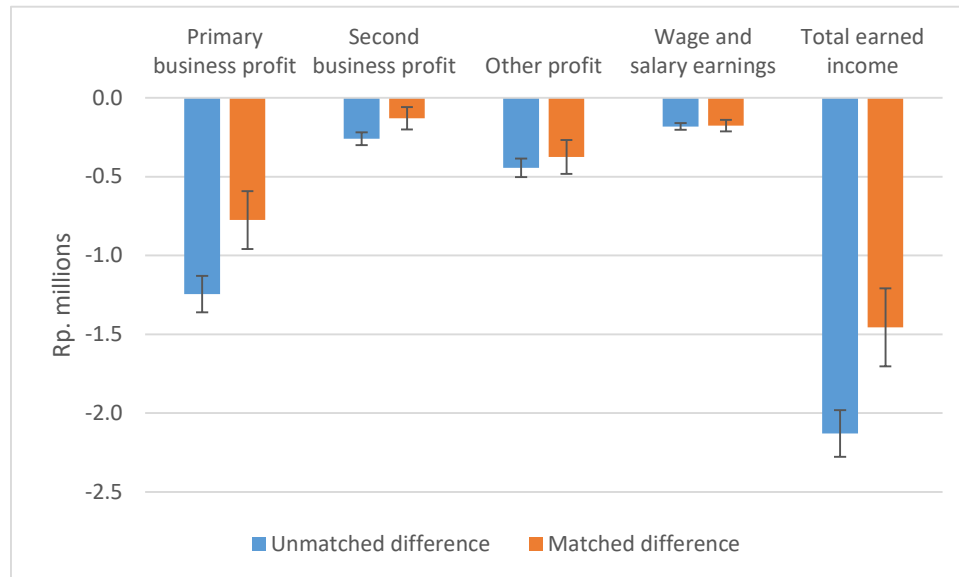
4.2.2 Savings

Figure 20 shows the pre- and post-matching estimates of gender differentials in three savings indicators. These data indicate that matching on entrepreneurs' endowments only reduces slightly the large gender differentials favoring females in both any reported savings during the past 12 months (first bar) and the amount saved as a percentage of annualized average monthly earned income (third bar). However, matching reduces the differential favoring males in the pre-matching percentage of any savings in a formal bank account (second bar) by 36 percent. Matching also reduces (shown only in Table 1) the pre-matching differentials in any saving at home (favoring males) and in any saving in an informal network or in a ROSCA (both favoring females), while changing the pre-matching differential favoring males in any saving in other instruments to a post-matching differential favoring females (but with both differentials statistically insignificant).

Figure 20. Pre- and post-matching estimates of gender differentials in savings outcomes
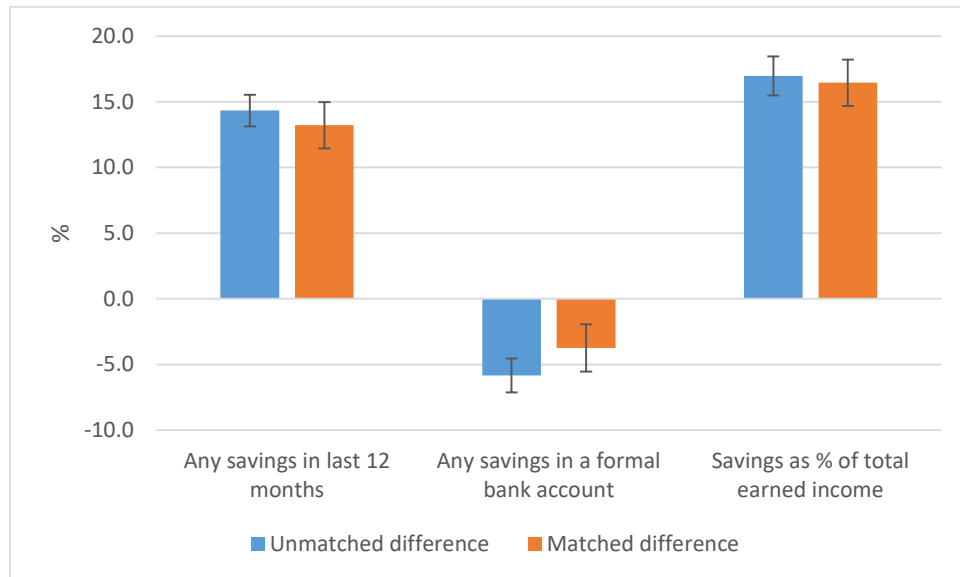
Figure 21 shows pre- and post-matching estimates of gender differentials in the reported amounts saved by entrepreneurs (in millions of Indonesian Rupiah) in various saving instruments during the past 12 months. These data indicate that both pre- and post-matching gender differentials favoring females in the amounts saved in a ROSCA (third bar) and in other savings instruments (fourth bar) are relatively small, whereas the estimated gender differentials favoring males in the amounts saved in a formal bank account (first bar) and at home (second bar) are much larger in magnitude. Although both pre-matching differentials favoring males are reduced slightly by matching, the post-matching estimate of the gender differential favoring males in total annual savings is only 15 percent lower than the pre-matching estimate of Rp. -4.9 million.

Figure 21. Pre- and post-matching estimates of gender differentials in the amounts saved (Rp. millions) during the past 12 months by saving instrument
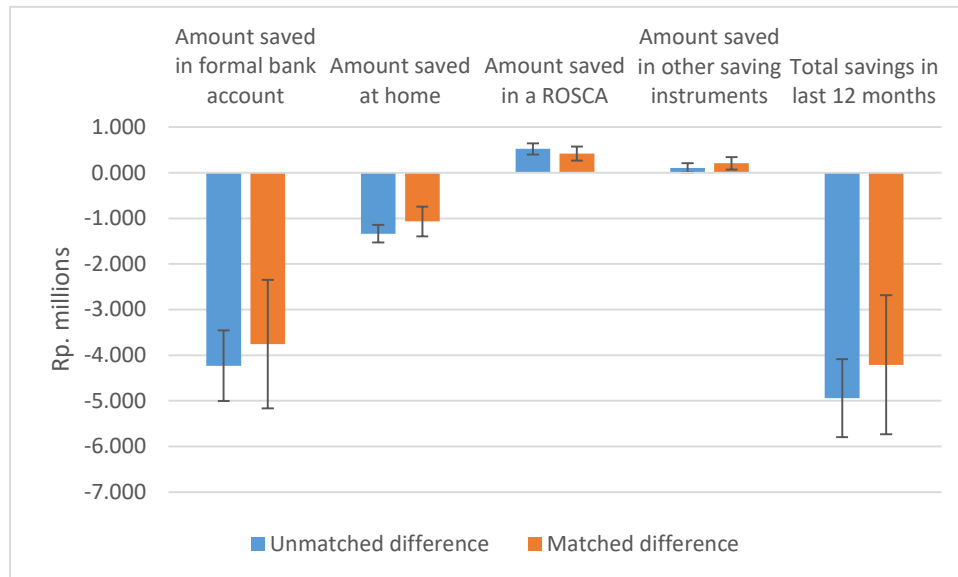
4.2.3 Business outcomes

Figure 22 shows pre- and post-matching estimates of gender differentials in four indicators of business labor inputs. These data indicate that three of the four estimated gender differentials favor females (bars 2-4). The exception is the estimated differential favoring males in the number of paid workers in entrepreneurs' primary and second businesses in a typical month, which more than offsets the estimated differential favoring females in the number of unpaid workers in entrepreneurs' primary and second businesses. The data in Figure 22 also indicate that matching on entrepreneurs' endowments reduces the estimated differential favoring males in the number of paid workers by 39 percent, while increasing the estimated differentials favoring females in the number of unpaid workers and in the number of hours worked in primary businesses by 44 percent and 22 percent respectively.

Figure 22. Pre- and post-matching estimates of gender differentials in business labor inputs
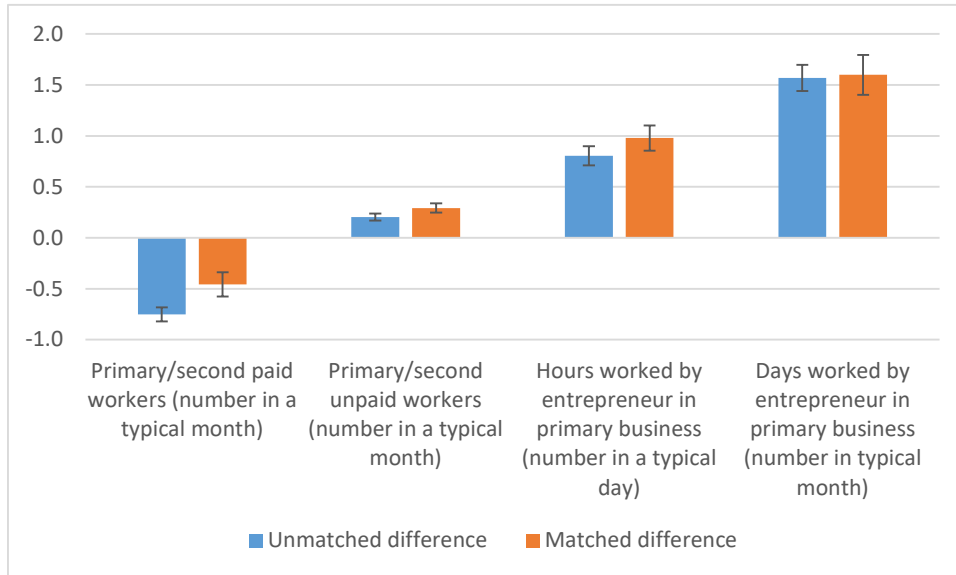
Figure 23 shows pre- and post-matching estimates of gender differentials in three other business outcomes (i.e., whether entrepreneurs have a second business, an index of their adherence to eight recommended business practices,[21] and whether they have registered at least one of their businesses). The data indicate that the estimated gender differentials in all three indicators favor males. However, matching on entrepreneurs' endowments reduces the estimated gender differentials of all three indicators to statistically insignificant levels.[22]

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[21] The business practices index is the sum of the following eight indicators of reported adherence to recommended business practices (with adherence equal to 1 and non-adherence equal to 0): (1) whether any special offers were used to attract customers during the past three months, (2) whether any form of advertising was done during the past six months, (3) whether the entrepreneur attempted to negotiate with a supplier for a lower price during the past three months, (4) whether written business records are kept, (5) whether the cost of main products is known, (6) whether there is a written budget for operating costs, (7) whether goods are sold on credit, and (8) whether the records needed to apply for a bank loan are available. These eight indicators are included in the index because they are reported by almost all entrepreneurs (N=4,820). For information on the other recommended business practices, see Table 1.

[22] The estimated pre-matching differential favoring males in the business practices index (-0.191) is equal to 9 percent of its sample mean (2.091).

Figure 23. Pre- and post-matching estimates of gender differentials in other business outcomes
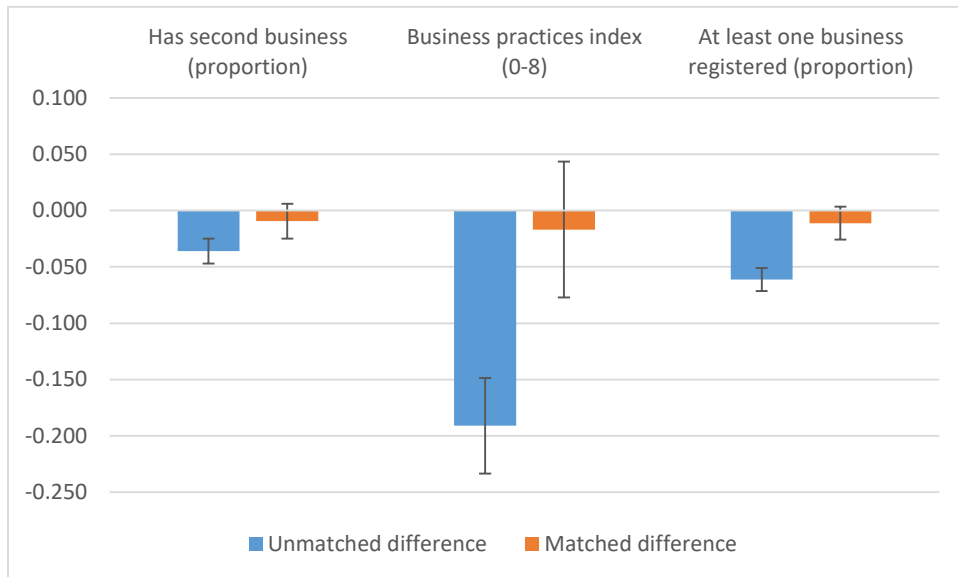
4.2.4 Other outcomes

Figure 24 shows pre- and post-matching estimates of gender differentials in four other outcomes relevant to the mobile savings intervention. The pre-matching gender differentials in all four indicators are statistically significant and favor males. Matching on entrepreneurs' endowments reduces all four estimated gender differentials, but not significantly.

Figure 24. Pre- and post-matching estimates of gender differentials in other outcomes
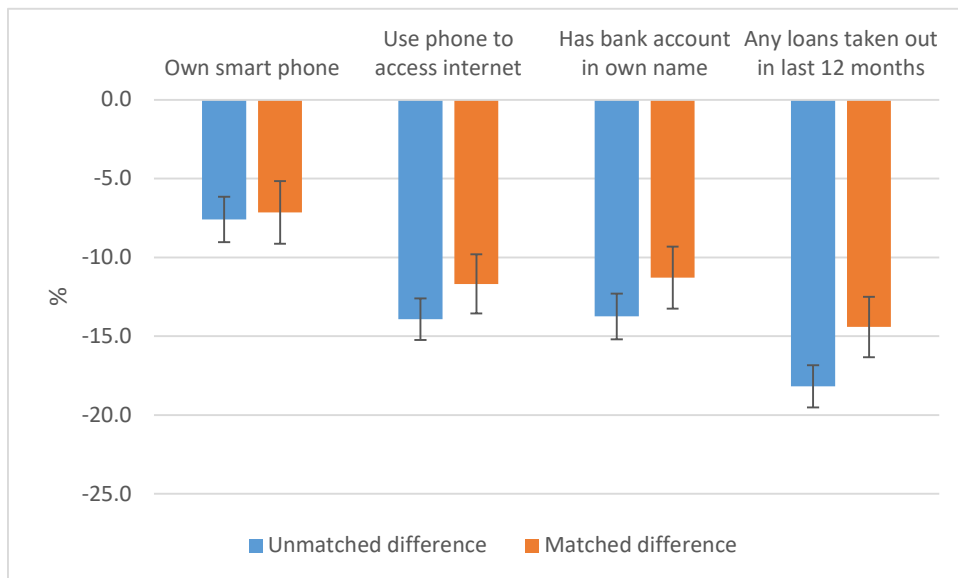
5. Analysis of relatively more and less successful entrepreneurs

This section of the report analyzes differences in a large number of indicators between two groups of female and male entrepreneurs who are relatively more or less successful in terms of their reported profitability. The less successful group includes the bottom 50 percent of entrepreneurs in terms of reported average monthly profits in the last year in their primary and second businesses combined, while the more successful group includes the top 50 percent of entrepreneurs in terms of reported average monthly profits. Classified in this way, the female sample includes 1,539 less successful entrepreneurs and 1,239 more successful entrepreneurs, while the male sample includes 1,072 more successful entrepreneurs and 895 less successful entrepreneurs.[23]

The indicators analyzed include indicators of both endowments and outcomes. There are at least two reasons for analyzing the indicators in this way. First, it provides an opportunity to analyze how numerous indicators (many of which are highly skewed and/or have many zero values) are related to business profitability and how these patterns may vary between female and male entrepreneurs. Second, defining profitability (success) as a categorical variable reduces the degree to which the analysis may be distorted by measurement error in the profit variable (section 3). However, there are some caveats. First, a significant relationship between success and a given indicator does not necessarily signify a causal relationship between the indicator and success, particularly in the case of outcomes. For example, whereas it may be appropriate to infer causality in the case of an exogenous endowment such as age, it would be incorrect to infer causality from a significant relationship between profitability and another outcome such as adherence to recommended business practices.[24] Second, the relationships analyzed in this section are bivariate and may therefore reflect relationships with one or more third variables.

5.1 Differences in endowments between more and less successful entrepreneurs

Table 2 shows the estimated differences between more and less successful female and male entrepreneurs in 21 indicators of their endowments (columns 1-10) as well as the gender differences in the those estimated differences (columns 11-12). These data indicate that both the female and male differences are highly significant (p=0.000) in most cases. For example, business registration and the number of years of business experience are both positively and highly significantly related to success among both female and male entrepreneurs. More

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[23] The two groups are of unequal size because of the relatively large frequency of entrepreneurs reporting the median value of total profit, i.e., Rp. one million for females (N=145) and Rp. two million for males (N=131).

[24] The reason is that both business profits and adherence to recommended business practices are both endogenous variables that may be caused in part by the same unobserved variables (e.g., motivation). In addition, there is the possibility of causation in both directions, e.g., adherence to recommended business practices may make a business more profitable, but it is also plausible that at least some entrepreneurs may follow recommended business practices if their business is more profitable for whatever reason (e.g., good luck).

successful female and male entrepreneurs are 8 percent and 12 percent more likely respectively to have at least one of their businesses registered than less successful entrepreneurs, while more successful female and male entrepreneurs have more business experience than less successful entrepreneurs (2.0 more years more among females and 1.2 more years among males). However, there are also many interesting gender differences. For example, there are highly significant differences in age (1.1 years) between more and less successful female entrepreneurs, whereas the smaller age difference between more and less successful male entrepreneurs (0.6 years) is not statistically significant. On the other hand, the difference in the mean level of completed schooling is not significantly different between more and less successful female entrepreneurs, and the difference in the proportion of female entrepreneurs who have completed upper secondary schooling is only marginally significant (p=0.041), differences in both schooling indicators between more and less successful male entrepreneurs are highly significant (p=0.000). Similarly, the differences between more and less successful female entrepreneurs in the indicators "currently married" and "has children" are both statistically insignificant (p=0.687 and p=0.528 respectively), whereas differences in the same indicators are highly significant (p=0.000) among male entrepreneurs. The differences between more and less successful entrepreneurs in most of the remaining indicators in Table 2 are highly significant for both female and male entrepreneurs, including large and highly significant differences in willingness to take risk, the household asset index and in the total value of business assets. The exception is urban residence, differences in which are statistically insignificant among both female and male entrepreneurs (p=0.901 and p=0.459 respectively).

Nine of the 21 gender differences in differences (GDIDs) in columns 11-12 of Table 2 are statistically significant, with all of the significant difference favoring males. Two of the GDIDs are highly significant (i.e., those referring to the total value of the entrepreneur's business assets and to whether the entrepreneur is in the highest business asset quintile). Surprisingly, the GDID referring to whether the entrepreneur is in the lowest business asset quintile is not statistically significant.

5.2 Differences in savings indicators between more and less successful entrepreneurs

Table 3 shows the estimated differences between more and less successful female and male entrepreneurs in 22 savings indicators (columns 1-10) as well as their respective GDIDs (columns 11-12). Many of the differences are statistically significant at conventional levels (15 among females and 13 among males), and all statistically significant differences are positive among both females and males, suggesting that more successful entrepreneurs save more than less successful entrepreneurs. Unlike with endowments (Table 2), however, there are relatively few gender differences in the statistical significance of the differences in most savings indicators. The largest gender difference occurs with respect to total savings as a percentage of annualized average monthly total earned income (next to the bottom row of the table), where there is a highly significant *negative* difference between more and less successful female entrepreneurs versus a small and statistically insignificant difference among male entrepreneurs. However, this difference probably reflects the substantially lower levels

24

of total earned income among female entrepreneurs (and particularly among less successful female entrepreneurs) combined with the tendency for the savings ratio to be higher at lower levels of reported earned income. Exceptions also include differences in "Any savings in an informal network" (insignificant among females but marginally significant among males), "Any savings in a Rosca" (highly significant among females but insignificant among males), "Savings in an informal network (Rp. millions)" (highly significant among females but insignificant among males). These results imply that more successful female entrepreneurs are not more likely to save in an informal network than less successful female entrepreneurs, but that those who do save significantly more (with the reverse being true among male entrepreneurs).[25] The GDIDs are statistically significant for only seven of the 22 indicators, six of which favor males. The exception is "Savings with a ROSCA (Rp. millions)" (p=0.033).

5.3 Differences in adherence to recommended business practices between more and less successful entrepreneurs

Table 4 shows the estimated differences between more and less successful female and male entrepreneurs in 14 indicators referring to recommended business practices (columns 1-10) as well as their respective GDIDs (columns 11-12). The data indicate that the estimated differences for the same 12 of 14 indicators are statistically significant among both female and male entrepreneurs, including those referring to the eight indicators included in the business practices index (bottom row of the table). Moreover, all of the estimated differences are positive.[26] These results indicate that more successful entrepreneurs are more likely to adhere to most recommended business practices. However, the data indicate that the difference in adherence to recommended business practices between more and less successful entrepreneurs is larger among male entrepreneurs, as evidenced by the fact that nine of the 12 significant differences are highly significant among males, compared to only three of the same 12 among females. Additionally, the difference in the index of recommended business practices between successful and less successful male entrepreneurs is +0.718, compared to +0.365 between more and less successful female entrepreneurs. Lastly, all of the GDIDs (column 11) are negative (i.e., favoring males), including four that are statistically significant.

5.4 Differences in business inputs between more and less successful entrepreneurs

Table 5 shows the estimated differences between more and less successful female and male entrepreneurs in 15 indicators referring to business inputs (columns 1-10) as well as their

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[25] Note that the amounts saved reported in Table 3 include zero values for those who reported not having saved in a particular instrument during the past 12 months (i.e., they are not conditional on some saving).

[26] The two recommended practices whose differences are not statistically significant are "Record every purchase or sale" (p=0.312 among females and p=0.225 among males) and "Keep records of which products are selling well from one month to another" (p=0.280 among females and p=0.168 among males).

respective GDIDs (columns 11-12). These data indicate that having a second business is clearly associated with greater success among both female and male entrepreneurs. More successful female entrepreneurs are much more likely than less successful female entrepreneurs to have a second business (24 percent versus 9 percent respectively), while an even larger difference is observed among male entrepreneurs (29 percent versus 10 percent). More successful female and male entrepreneurs also work more days in a typical month and more hours in a typical day in their second businesses. However, working more in other businesses (both the number of days and hours worked) and average monthly wage and salary income are negatively associated with profitability among both female and male entrepreneurs, suggesting that diversifying activities beyond a second business may negatively affect profitability in primary and second businesses.[27]

5.5 Differences in other business indicators between more and less successful entrepreneurs

Table 6 shows the estimated differences between more and less successful female and male entrepreneurs in 10 other business indicators (columns 1-10) as well as their respective GDIDs (columns 11-12). These data indicate that help from a spouse in running the business is positively and significantly associated with success among both female and male entrepreneurs. More successful female and male entrepreneurs are 8 percent and 7 percent more likely respectively to receive help from a spouse. Help from another male household member is positively associated with success among female entrepreneurs, but not among male entrepreneurs, while help from sons, daughters and other male household members is insignificantly associated with success among both female and male entrepreneurs. Involvement in voluntary activities is insignificantly related to success among both female and male entrepreneurs, whereas making donations is positively and significantly related to success among male entrepreneurs (but not among female entrepreneurs). Lastly, belonging to business organizations or groups is positively and significantly related (but only marginally) to success among both female and male entrepreneurs.

5.6 Differences in the use of financial services indicators between more and less successful entrepreneurs

Table 7 shows the estimated differences between more and less successful female and male entrepreneurs in 19 indicators referring to the use of financial services (columns 1-10) as well as their respective GDIDs (columns 11-12). These data indicate that having a bank account in one's name is positively and highly significantly related to success among both female and male entrepreneurs. More successful female and male entrepreneurs are 10 percent and 16 percent more likely respectively to have a bank account in their name. Having an account with Bank Mandiri and/or BRI is positively and significantly related to success among both

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[27] However, this is again only an association and not necessarily a causal relationship. For example, entrepreneurs may allocate more time to other activities if their primary and/or second businesses are less profitable for other reasons.

female and male entrepreneurs, whereas having an account with either BTPN or Bank JATIM is not significantly related to success among either female or male entrepreneurs. However, having an account with BNI is positively and significantly related to success among female entrepreneurs, while having an account with another (unspecified) bank is positively and significantly related to success among male entrepreneurs. Using an account for saving, to check the account balance and for business loans is positively and significantly related to success among both female and male entrepreneurs. In addition, using an account for micro credit is positively and significantly related to success among female entrepreneurs, while using an account for letters of credit, vehicle loans, and for health and/or life insurance is positively and significantly related to success among male entrepreneurs. Using an account for house mortgages, certificates of deposit, or other products is insignificantly related to success among both female and male entrepreneurs. Lastly, knowing about mobile money is positively and significantly associated with success among male entrepreneurs (but only marginally among female entrepreneurs).

6. Conclusions

This report finds that there are large gender differentials favoring males in most indicators related to earned income and savings between female and male entrepreneurs as well as in many other business-related outcomes. There are also large gender differentials in most indicators related to entrepreneurs' endowments (e.g., age, schooling, marital status, household size, household wealth, business assets), also mostly favoring males. It is reasonable to expect gender differentials in some outcomes to reflect mainly gender differences in endowments. However, this report finds that large gender differentials remain among entrepreneurs in most outcomes even after accounting for gender differences in their endowments. An important implication is that policies designed to improve female entrepreneurs' economic status by improving their endowments, while helpful, may not be sufficient to close gender gaps in economic status. It may also be necessary to address social, cultural and political-administrative factors that constrain female entrepreneurs back even when their endowments are similar to those of male entrepreneurs.

The report also analyzed differences in numerous indicators referring to both endowments and outcomes between more and less successful female and male entrepreneurs. Many of the differences are statistically significant for both female and male entrepreneurs (typically the same indicators), and most are in the theoretically expected direction (e.g., more successful entrepreneurs have more experience). However, there are some surprises. For example, all five indicators referring to entrepreneurs' labor inputs into activities other than their primary or second businesses are negatively related to entrepreneur success (often significantly) for both female and male entrepreneurs. Although these relationships suggest that entrepreneurs would be wise to focus their efforts on their primary and second businesses, the observed relationship may be due to a reverse causal link, i.e., that more successful entrepreneurs do not need to pursue other activities.

Another striking finding of the analysis of differences between more and less successful entrepreneurs is the large number of differences in indicators referring to endowments that vary in significance between female and male entrepreneurs. For example, differences in age

27

between more and less successful female entrepreneurs are positive and highly significant (p=0.000), but the corresponding difference among male entrepreneurs is smaller and not statistically significant. In contrast, differences in the highest level of completed schooling, being currently married, and whether the entrepreneur has children are not statistically significant between more and less successful female entrepreneurs but are all highly significant among male entrepreneurs.

The analysis of differences between more and less successful entrepreneurs also finds consistent evidence that more successful entrepreneurs, both female and male, have higher levels of most endowments (including business experience, registered businesses, cognitive ability, willingness to take risk, household size, household assets, and business assets), while they also save more (although not necessarily as a percentage of their earned income), are more likely to follow recommended business practices, and are more likely to have a second business, a spouse who helps in running the business, and a bank account in their own name.

Table 1. Comparison of unmatched and matched gender differentials in outcomes
(outcome is sample proportion unless otherwise indicated)

Outcome	Gender differential (unmatched)	Estimated standard error of differential	Gender differential (matched)	Estimated standard error of differential
Total earned income (Rp. millions)	-2.129	0.148***	-1.455	0.248***
Primary/second business profit (Rp. millions)	-1.503	0.132***	-0.905	0.216***
Primary business profit (Rp. millions)[a]	-1.244	0.115***	-0.775	0.184***
Second business profit (Rp. millions)[a]	-0.259	0.041***	-0.130	0.072
Other income (Rp. millions)	-0.626	0.063***	-0.551	0.113***
Other profit (Rp. millions)[a]	-0.444	0.059***	-0.375	0.108**
Wage/salary earnings (Rp. millions)[a]	-0.181	0.021***	-0.176	0.036***
Any savings in last 12 months	0.143	0.012***	0.132	0.018***
Any savings in a formal bank account	-0.058	0.013***	-0.037	0.018*
Any savings at home	-1.339	0.192***	-1.068	0.324*
Any savings in informal network	0.139	0.036***	0.110	0.051***
Any savings in a ROSCA	0.523	0.122***	0.421	0.156***
Any other savings	-0.032	0.161	0.083	0.221
Total savings in last 12 months (Rp. millions)	-4.939	0.855***	-4.211	1.523**
Savings in formal bank account (Rp. millions)	-4.231	0.772***	-3.757	1.411**
Savings at home (Rp. millions)	-1.339	0.192***	-1.068	0.324**
Savings in informal network (Rp. millions)	0.139	0.036***	0.110	0.051*
Savings in a ROSCA (Rp. millions)	0.523	0.122***	0.421	0.156**
Other savings (Rp. millions)	-0.032	0.099***	0.083	0.136
Savings as % of total earned income	0.170	0.015	0.164	0.018***
Has second business	-0.036	0.011**	-0.009	0.015
Index of eight recommended business practices	-0.191	0.042***	-0.017	0.060
At least one business registered	-0.061	0.010***	-0.011	0.015
Number of customers in typical month (primary business)	-0.752	0.165***	-1.027	0.258***
Primary/second paid workers in typical month (number)	-0.751	0.069***	-0.456	0.119***
Primary/second unpaid workers in typical month (number)	0.203	0.034***	0.292	0.045***
Number of hours worked by entrepreneur in typical month (primary business)	0.805	0.093***	0.978	0.122***
Number of days worked by entrepreneur in typical day (primary business)	1.570	0.128***	1.599	0.197***
Own smart phone	-0.076	0.014***	-0.071	0.020***
Use phone to access internet	-0.139	0.013***	-0.117	0.019***
Has bank account in own name	-0.137	0.015***	-0.113	0.020***
Any loans taken out in last 12 months	-0.182	0.013***	-0.144	0.019***

* Significant at 0.05 level, **Significant at 0.01 level, ***Significant at 0.001 level

Note: the estimated standard errors are not adjusted to reflect that the propensity score is estimated nor for sample clustering at the village level.

[a] indicators refer to monthly averages during the past year.

Table 2. Comparison of entrepreneurs' endowments between more successful and less successful female and male entrepreneurs (indicators are sample proportions unless otherwise indicated)

| Variable | Female entrepreneurs | | | | | Male entrepreneurs | | | | | Difference in difference (DID) | |
| | Profitability | | Difference | Significance | | Profitability | | Difference | Significance | | DID | Significance |
	Bottom 50%	Top 50%	(2) - (1)	p	N	Bottom 50%	Top 50%	(7) - (6)	p	N	(3) - (8)	p
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Age (mean)	37.029	38.155	1.127	0.000***	2,835	39.104	39.663	0.559	0.128	1,539	0.567	0.214
Ages 18-40	0.658	0.616	-0.042	0.016*	2,835	0.563	0.528	-0.034	0.133	1,539	-0.008	0.766
Ages 41-55	0.342	0.384	0.042	0.016*	2,835	0.438	0.472	0.034	0.133	1,539	0.008	0.766
At least one business is registered	0.077	0.160	0.083	0.000***	2,835	0.119	0.241	0.122	0.000***	1,967	-0.039	0.084
Business experience (years working in business)	7.500	9.508	2.008	0.000***	2,835	8.223	9.446	1.223	0.000***	1,967	0.785	0.065
Highest level of schooling completed (mean)	2.162	2.192	0.030	0.368	2,835	2.196	2.374	0.178	0.000***	1,539	-0.149	0.005**
Upper secondary schooling completed	0.370	0.408	0.038	0.041*	2,835	0.445	0.539	0.094	0.000***	1,539	-0.055	0.063*
Cognitive ability score (mean)	3.033	3.118	0.085	0.008**	2,835	3.032	3.196	0.164	0.000***	1,539	-0.079	0.118
Entrepreneur is head of household	0.075	0.075	-0.001	0.958	2,835	0.842	0.884	0.041	0.004**	1,539	-0.042	0.010*
Entrepreneur is currently married	0.911	0.915	0.004	0.687	2,835	0.878	0.928	0.051	0.000***	1,539	-0.047	0.006**
Entrepreneur has children	0.949	0.954	0.005	0.528	2,835	0.854	0.908	0.054	0.000***	1,539	-0.049	0.003**
Number of the entrepreneur's children living in the household	1.473	1.546	0.072	0.027*	2,835	1.339	1.493	0.154	0.000***	1,539	-0.082	0.133
Willingness to take risk (mean)	3.794	4.220	0.426	0.000***	2,831	4.532	5.124	0.592	0.000***	1,536	-0.165	0.307
Household size (mean)	4.210	4.350	0.141	0.012**	2,832	4.206	4.451	0.245	0.000***	1,536	-0.105	0.236
Household asset index (mean)	-0.256	0.403	0.659	0.000***	2,834	-0.530	0.465	0.995	0.000***	1,538	-0.336	0.002**
Poorest household asset quintile	0.225	0.139	-0.086	0.000***	2,834	0.291	0.143	-0.148	0.000***	1,538	0.062	0.011*
Richest household asset quintile	0.146	0.262	0.115	0.000***	2,834	0.131	0.283	0.152	0.000***	1,538	-0.037	0.120
Total value of the entrepreneur's business assets (Rp. millions)	10.807	27.878	17.072	0.000***	2,834	23.129	67.422	44.293	0.000***	1,538	-27.221	0.000***
Lowest business asset quintile	0.326	0.170	-0.156	0.000***	2,834	0.186	0.063	-0.123	0.000***	1,538	-0.033	0.126
Highest business asset quintile	0.080	0.204	0.125	0.000***	2,834	0.164	0.441	0.277	0.000***	1,538	-0.153	0.000***
Urban location	0.116	0.117	0.002	0.901	2,835	0.112	0.124	0.012	0.459	1,539	-0.010	0.612

Table 3. Comparison of savings indicators between more successful and less successful female and male entrepreneurs (indicators are sample proportions unless otherwise indicated)

Variable	Female entrepreneurs					Male entrepreneurs					Difference in difference (DID)	
	Profitability		Difference	Significance		Profitability		Difference	Significance		DID	Significance
	Bottom 50%	Top 50%	(2) - (1)	p	N	Bottom 50%	Top 50%	(7) - (6)	p	N	(3) - (8)	p
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Any savings in last 12 months	0.807	0.874	0.067	0.000***	2,835	0.637	0.760	0.123	0.000***	1,967	-0.055	0.029
Any savings in a formal savings account	0.201	0.280	0.079	0.000***	2,835	0.229	0.375	0.147	0.000***	1,967	-0.068	0.008**
Any savings in an e-savings account	0.005	0.008	0.003	0.401	2,835	0.006	0.004	-0.001	0.721	1,967	0.004	0.419
Any savings at home	0.366	0.370	0.005	0.813	2,835	0.318	0.335	0.017	0.424	1,967	-0.013	0.656
Any savings with friends or family	0.042	0.070	0.029	0.002**	2,835	0.039	0.072	0.032	0.002**	1,967	-0.004	0.791
Any savings with a cooperative	0.051	0.066	0.015	0.105	2,835	0.021	0.032	0.011	0.151	1,967	0.004	0.743
Any savings in an informal network	0.242	0.253	0.011	0.527	2,835	0.078	0.115	0.037	0.010*	1,967	-0.026	0.241
Any savings with BMT	0.039	0.064	0.025	0.006**	2,835	0.021	0.053	0.031	0.001**	1,967	-0.006	0.597
Any savings with a ROSCA	0.498	0.575	0.077	0.000***	2,835	0.257	0.291	0.034	0.094	1,967	0.043	0.104
Any other savings	0.004	0.006	0.002	0.436	2,835	0.002	0.000	-0.002	0.156	1,967	0.004	0.196
Savings in a formal savings account[a]	1.144	2.870	1.726	0.000***	2,832	1.545	11.628	10.083	0.000***	1,966	-8.357	0.000***
Savings in an e-savings account[a]	0.008	0.016	0.008	0.475	2,835	0.049	0.030	-0.019	0.557	1,967	0.026	0.433
Savings at home[a]	0.986	2.010	1.024	0.000***	2,831	1.399	4.466	3.067	0.000***	1,966	-2.043	0.000***
Savings with friends or family[a]	0.190	0.589	0.400	0.022*	2,835	0.164	0.799	0.635	0.002**	1,967	-0.235	0.379
Savings with a cooperative[a]	0.079	0.346	0.267	0.010*	2,835	0.094	0.336	0.241	0.036*	1,967	0.026	0.854
Savings in an informal network[a]	0.280	0.473	0.192	0.000***	2,833	0.182	0.325	0.143	0.114	1,967	0.050	0.625
Savings with BMT[a]	0.123	0.399	0.276	0.002**	2,833	0.063	0.313	0.250	0.004**	1,967	0.026	0.805
Savings with a ROSCA[a]	0.891	2.242	1.350	0.000***	2,834	0.614	1.412	0.798	0.000***	1,967	0.552	0.033*
Other savings[a]	0.007	0.022	0.015	0.218	2,835	0.002	0.000	-0.002	0.157	1,967	0.017	0.163
Total savings[a]	3.715	8.978	5.263	0.000***	2,824	4.073	19.316	15.243	0.000***	1,965	-9.980	0.000***
Total savings as a percentage of annualized total earned income	0.490	0.275	-0.215	0.000***	2,823	0.210	0.232	0.022	0.222	1,965	-0.237	0.000***
Any loans in the last 12 months	0.187	0.290	0.103	0.000***	2,835	0.337	0.511	0.174	0.000***	1,967	-0.071	0.008**

Note: The reported values of savings in a formal bank account and savings in an informal network are winsorized (the highest 3 values and highest value respectively), both of which are components of total savings. Total as a percentage of annualized total earned income is also winsorized (highest 2 percent of calculated values).

a Indicator is expressed in Rp. millions.

Table 4. Comparison of business practice indicators between more successful and less successful female and male entrepreneurs (indicators are sample proportions unless otherwise indicated)

Variable	Female entrepreneurs					Male entrepreneurs					Difference in difference (DID)	
	Profitability		Difference	Significance		Profitability		Difference	Significance		DID	Significance
	Bottom 50%	Top 50%	(2) - (1)	p	N	Bottom 50%	Top 50%	(7) - (6)	p	N	(3) - (8)	p
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Ask supplier which products are selling well	0.395	0.435	0.040	0.031*	2,763	0.346	0.441	0.095	0.000***	1,766	-0.054	0.060
Used special offer to attract customers in last 3 months*	0.162	0.224	0.062	0.000***	2,833	0.215	0.320	0.105	0.000***	1,965	-0.043	0.094
Done any form of advertising in last 6 months*	0.051	0.073	0.021	0.026*	2,833	0.097	0.137	0.040	0.008**	1,965	-0.019	0.291
Attempted to negotiate with supplier for a lower price in last 3 months*	0.299	0.361	0.062	0.001**	2,833	0.319	0.430	0.111	0.000***	1,965	-0.049	0.108
Have record-keeping system for inventory of goods to sell or raw materials on hand	0.116	0.150	0.034	0.012*	2,788	0.114	0.237	0.123	0.000***	1,810	-0.089	0.000***
Keep written business records*	0.291	0.372	0.081	0.000***	2,833	0.246	0.418	0.172	0.000***	1,965	-0.091	0.001**
Record every purchase or sale	0.460	0.492	0.032	0.312	930	0.624	0.671	0.048	0.225	637	-0.016	0.759
Keep regular records of cash on hand	0.420	0.490	0.070	0.047*	930	0.529	0.631	0.102	0.012*	637	-0.033	0.557
Keep records of which products are selling well from one month to another	0.317	0.353	0.036	0.280	930	0.426	0.481	0.055	0.168	637	-0.020	0.714
Know the cost of main products*	0.882	0.918	0.036	0.002**	2,833	0.850	0.908	0.059	0.000***	1,965	-0.022	0.198
Have a written budget for operating costs*	0.055	0.074	0.020	0.033*	2,833	0.054	0.134	0.080	0.000***	1,965	-0.060	0.000***
Sell goods on credit*	0.033	0.055	0.022	0.008**	2,833	0.013	0.039	0.026	0.000***	1,965	-0.004	0.732
Have records needed to apply for bank loan*	0.075	0.135	0.060	0.000***	2,833	0.083	0.208	0.125	0.000***	1,965	-0.064	0.001**
Index of business practices	1.847	2.212	0.365	0.000***	2,833	1.877	2.594	0.718	0.000***	1,965	-0.353	0.000***

* Items included in index of business practices

33

Table 5. Comparison of business inputs between more successful and less successful female and male entrepreneurs (indicators are sample proportions unless otherwise indicated)

Variable	Female entrepreneurs					Male entrepreneurs					Difference in difference (DID)	
	Profitability		Difference	Significance		Profitability		Difference	Significance		DID	Significance
	Bottom 50%	Top 50%	(2) - (1)	p	N	Bottom 50%	Top 50%	(7) - (6)	p	N	(3) - (8)	p
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Has second business	0.086	0.237	0.151	0.000***	2,835	0.107	0.291	0.183	0.000***	1,967	-0.032	0.155
Number of days worked in primary business in typical month	28.665	28.848	0.183	0.175	2,835	26.952	27.455	0.502	0.034*	1,967	-0.320	0.217
Number of days worked in second business in typical month	1.751	5.268	3.517	0.000***	2,835	2.173	6.098	3.926	0.000***	1,967	-0.409	0.471
Number of days worked in first other activity in typical month	4.383	3.242	-1.140	0.001**	2,835	10.148	7.868	-2.280	0.000***	1,967	1.140	0.068
Number of days worked in second other activity in typical month	0.453	0.314	-0.139	0.240	2,835	1.988	1.422	-0.566	0.049*	1,967	0.427	0.165
Number of hours worked in primary business on typical day	8.313	8.527	0.214	0.110	2,835	7.441	7.815	0.373	0.005**	1,967	-0.159	0.413
Number of hours worked in second business on typical day	0.372	1.065	0.693	0.000***	2,835	0.496	1.526	1.030	0.000***	1,967	-0.337	0.016*
Number of hours worked in first other activity on typical day	1.089	0.823	-0.266	0.001**	2,835	2.444	1.608	-0.836	0.000***	1,967	0.570	0.000*
Number of hours worked in second other activity on typical day	0.083	0.079	-0.003	0.903	2,835	0.385	0.254	-0.132	0.022*	1,967	0.129	0.040*
Number of paid workers in primary and second businesses	0.083	0.421	0.338	0.000***	2,835	0.449	1.629	1.180	0.000***	1,967	-0.842	0.000***
Number of unpaid workers in primary and second businesses	2.216	2.541	0.325	0.000***	2,835	2.025	2.321	0.295	0.000***	1,967	0.030	0.670
Wage and salary income (Rp. millions)	0.088	0.075	-0.013	0.428	2,835	0.265	0.261	-0.004	0.936	1,967	-0.009	0.855
Profits from work in other businesses (Rp. millions)	0.122	0.145	0.023	0.377	2,835	0.494	0.675	0.181	0.198	1,967	-0.158	0.265
Total income from other work (Rp. millions)	0.210	0.220	0.010	0.753	2,835	0.759	0.936	0.177	0.231	1,967	-0.167	0.265

Table 6. Comparison of other business indicators between more successful and less successful female and male entrepreneurs (indicators are sample proportions unless otherwise indicated)

Variable	Female entrepreneurs					Male entrepreneurs					Difference in difference (DID)	
	Profitability		Difference	Significance		Profitability		Difference	Significance		DID	Significance
	Bottom 50%	Top 50%	(2) - (1)	p	N	Bottom 50%	Top 50%	(7) - (6)	p	N	(3) - (8)	p
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Spouse helps to run business(es)	0.510	0.592	0.082	0.000***	2,835	0.548	0.613	0.066	0.002**	1,967	0.016	0.569
Son helps to run business(es)	0.120	0.131	0.012	0.366	2,835	0.070	0.083	0.013	0.314	1,967	-0.001	0.953
Daughter helps to run business(es)	0.148	0.170	0.022	0.109	2,835	0.063	0.074	0.010	0.365	1,967	0.011	0.531
Other male HH member helps to run business(es)	0.055	0.076	0.021	0.025*	2,835	0.076	0.088	0.012	0.346	1,967	0.009	0.553
Other female HH member helps to run business(es)	0.201	0.195	-0.006	0.666	2,835	0.094	0.095	0.001	0.955	1,967	-0.007	0.720
Involved in voluntary activities during the past year	0.133	0.129	-0.004	0.731	2,835	0.194	0.212	0.018	0.263	1,967	-0.023	0.262
Hours volunteered in a typical month (mean)	0.830	0.760	-0.070	0.626	2,835	1.819	1.977	0.158	0.656	1,967	-0.228	0.570
Made a donation in the past year	0.147	0.147	0.001	0.968	2,835	0.152	0.231	0.079	0.000***	1,967	-0.079	0.000***
Amount of donations in the past year (Rp. millions)	0.042	0.110	0.068	0.011*	2,835	0.064	0.322	0.258	0.000***	1,967	-0.190	0.012*
Belongs to business-related organizations or groups	0.017	0.029	0.012	0.047*	2,835	0.039	0.060	0.021	0.043*	1,967	-0.010	0.419

Table 7. Comparison of financial services indicators between more successful and less successful female and male entrepreneurs (indicators are sample proportions unless otherwise indicated)

Variable	Female entrepreneurs					Male entrepreneurs					Difference in difference (DID)	
	Profitability		Difference	Significance		Profitability		Difference	Significance		DID	Significance
	Bottom 50%	Top 50%	(2) - (1)	p	N	Bottom 50%	Top 50%	(7) - (6)	p	N	(3) - (8)	p
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Has bank account in own name	0.429	0.533	0.104	0.000***	2,835	0.543	0.700	0.157	0.000***	1,966	-0.054	0.056
Has account with Bank Mandiri	0.022	0.046	0.023	0.000***	2,835	0.045	0.100	0.055	0.000***	1,966	-0.031	0.026*
Has account with BNI	0.023	0.043	0.020	0.005**	2,835	0.029	0.037	0.008	0.288	1,966	0.012	0.244
Has account with BRI	0.353	0.437	0.083	0.000***	2,835	0.469	0.581	0.111	0.000***	1,966	-0.028	0.314
Has account with BTPN	0.009	0.011	0.002	0.694	2,835	0.002	0.008	0.006	0.065	1,966	-0.004	0.418
Has account with Bank JATIM	0.028	0.029	0.001	0.825	2,835	0.034	0.048	0.015	0.081	1,966	-0.013	0.184
Has account with other bank	0.034	0.043	0.009	0.208	2,835	0.039	0.088	0.049	0.000***	1,966	-0.040	0.003**
Uses account for saving	0.448	0.557	0.109	0.000***	2,835	0.559	0.708	0.150	0.000***	1,967	-0.040	0.145
Uses account to check account balance	0.332	0.405	0.073	0.000***	2,835	0.385	0.542	0.157	0.000***	1,967	-0.084	0.003**
Uses account for house mortgage	0.002	0.002	0.000	0.834	2,835	0.004	0.002	-0.001	0.539	1,967	0.002	0.533
Uses bank for certificate of deposit	0.004	0.006	0.002	0.399	2,835	0.002	0.009	0.007	0.061	1,967	-0.005	0.303
Uses bank for letter of credit	0.004	0.005	0.002	0.558	2,835	0.000	0.011	0.011	0.001**	1,967	-0.010	0.045*
Uses bank for business loan	0.109	0.182	0.073	0.000***	2,835	0.187	0.321	0.134	0.000***	1,967	-0.061	0.007**
Uses bank for vehicle loan	0.006	0.012	0.006	0.064	2,835	0.021	0.046	0.025	0.002**	1,967	-0.019	0.035*
Uses bank for personal loan	0.037	0.052	0.015	0.056	2,835	0.053	0.082	0.028	0.015*	1,967	-0.014	0.336
Uses bank for health and/or life insurance	0.010	0.016	0.006	0.196	2,835	0.014	0.031	0.017	0.010*	1,967	-0.011	0.152
Uses bank for micro credit	0.067	0.105	0.038	0.000***	2,835	0.136	0.168	0.031	0.062	1,967	0.007	0.740
Uses bank for other product	0.001	0.002	0.000	0.865	2,835	0.000	0.001	0.001	0.317	1,967	-0.001	0.063
Knows about mobile money	0.065	0.084	0.019	0.065	2,835	0.063	0.117	0.055	0.000***	1,967	-0.036	0.039*

Annex: Multivariate analysis of business profits

The purpose of this annex is to report on multivariate analysis of business profits from the respondent's primary business using the baseline data set and a model that includes explanatory variables referring to characteristics of the primary business, including:

- Indicators of the type of primary business (condensed into six categories)
- Indicators of the age of the primary business (four categories, as reported)
- Number of years in which the respondent has worked in the primary business (and the number of years squared)
- Indicator of whether the primary business is 100 percent-owned by the respondent

These explanatory variables are included in order to explore the extent to which the large gender gap favoring males in primary business profits can be attributed to the characteristics of women's businesses, and particularly the types of businesses they engage in. The dependent variable is the inverse hyperbolic spline (IHS) transformation of reported primary business profits instead of the natural log transformation used in preliminary analysis.[28] The statistical model is linear regression, and the estimation method is OLS. The estimated standard errors are robust, with clustering at the village level.

The results are presented in Table A-1 (without winsorization of business profits and business assets) and Table A-2 (with winsorization of the highest 2 percent of reported values, as in the Tanzania report). The results indicate that the results in Tables A-1 and A-2 are quite similar, so the remaining discussion is based on the results in Table A-1 (without winsorization). The results indicate that primary business profits are most closely related to:

- The entrepreneur's sex (the profits of female entrepreneurs are about 26 percent lower than those of male entrepreneurs, other factors equal)
- Willingness to take risk (the profits of female and male entrepreneurs are about 14 percent and 19 percent higher respectively when their stated willingness to take risks increases from the lowest level [1] to the highest level [10])
- The total value of business assets (with a one million Rp. increase in business assets associated with an 18 percent increase in profits, other factors equal)
- Type of business (with "Grocery" businesses, the omitted category, having the highest estimated profits, other factors equal)
- District of residence (with Ngawi district, the omitted category, having the lowest estimated profits, other factors equal)

Other statistically significant right-side variables include: (1) schooling (positive, but only significant for females), (2) married (positive, but only significant among males), and (3) number of years working in primary business (positive, but with the magnitude of the relationship decreasing with the number of years). Apart from the highly significant sex

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[28] The IHS transformation is frequently used for highly skewed variables with zero values and was used in the Tanzania midline report. It is closely related to the natural logarithm, a commonly used alternative. The main advantage of the IHS is that it enables inclusion of reported zero values in the estimation sample (of which there are only a few in this case).

indicator in column 1, gender differences are mostly relatively small and statistically insignificant. For example, the hypothesis that the overall models are the same between females and males cannot be rejected at the 0.05 level, while the estimated coefficient(s) of only one variable (married) are significantly different between females and males.

Figure A-1 shows the estimated relationship between business types and primary profits, other factors equal.[29] These data indicate that "Grocery" businesses have the highest level of reported profits among both females and males, while "Retail shops" have the lowest profits. The differentials in Figure 1 are relatively large. For example, among female entrepreneurs, average monthly profits vary from 1.26 million Rp. for business type "Grocery" to 0.83 million Rp. for business type "Retail shop." The estimated gender differences are also uniformly large. These data raise the question: To what extent do gender differences in profits reflect the types of primary businesses women engage in compared to those men engage in?

**Figure A-1. Average monthly profits (Rp. millions)
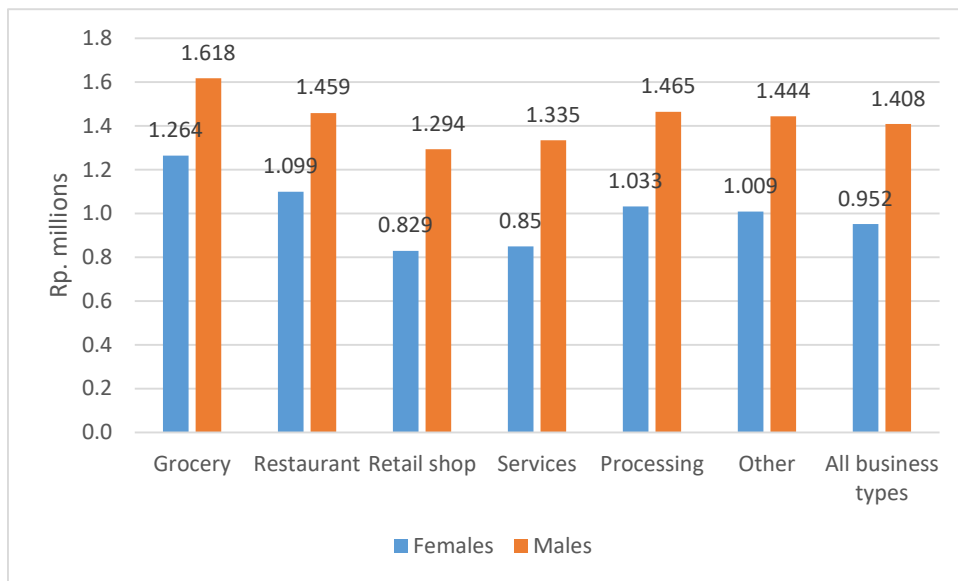by type of primary business and sex**

 Figure A-2 shows gender differences in the types of primary businesses by sex. These data show sharp gender differences in the types of primary businesses women and men engage in. For example, 49 percent of women entrepreneurs have retail shops, the least profitable business type, compared to only 21 percent of men. In contrast, 30 percent of men have other types of businesses, a relatively profitable business type, compared to only 7 percent of women. These data, together with those in Figure A-1, suggest that women's business profits

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[29] The estimates in Figure A-1 are obtained using Stata's "margins" command, which produces estimates with other factors held constant, making it possible to observe the relationship between profits and type of business without the confounding effects of other factors (e.g., the possibility that better educated entrepreneurs are more likely to engage in some types of businesses).

would be substantially higher if they were to engage in the same types of businesses as men. However, this turns out not to be the case.

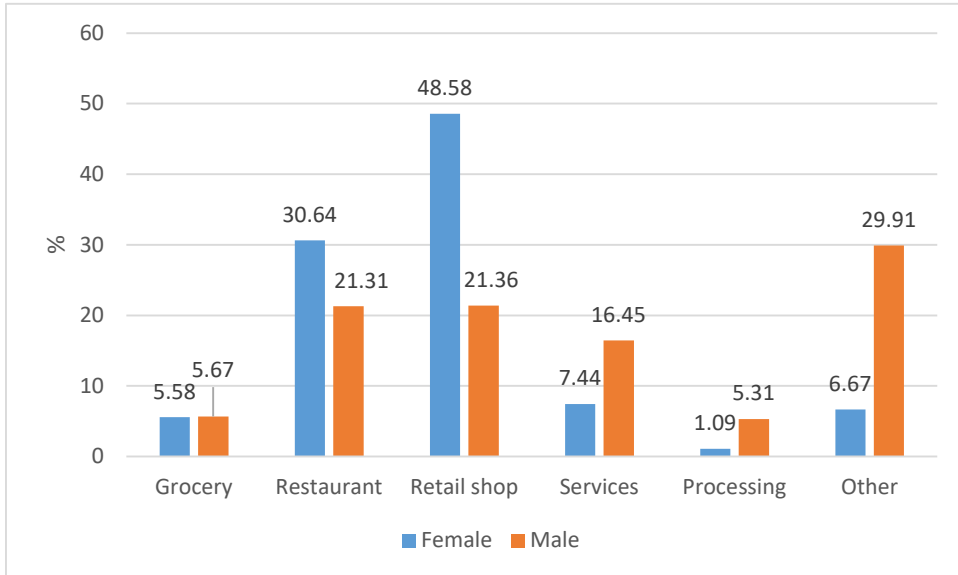**Figure A-2. Type of business by sex**

Figure A-3 compares women's actual primary business profits by business type to their simulated primary business profits if they were to enjoy the same profit rates by business type as women in Figure A-1 but were to have the same types of businesses as men in Figure A-2 (Scenario 1).[30] These data indicate that under Scenario 1, women's overall business profits would increase by less than 3 percent.[31] Even if it were possible to alter the types of businesses women engage in, it is unlikely that this would close much of the large gender gaps in business profit. What is likely to be more effective is to close the large gender gaps in profits within each type of business. Figure A-4 compares women's actual primary business profits by business type to their simulated primary business profits if they were to enjoy the same profit rates by business type as men in Figure A-1 while maintaining their current actual mix of business types (Scenario 2).

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[30] Simulated business profits from each business type are calculated as the product of women's business profits in each business type multiplied by the proportion of males engaging in that type of business.

[31] The main reason for this surprising finding is that, apart from Grocery business in which similarly small percentages of women and men engage in, profit differentials between business types are not very large.

Figure A-3. Simulated primary business profits by business type (Scenario 1)
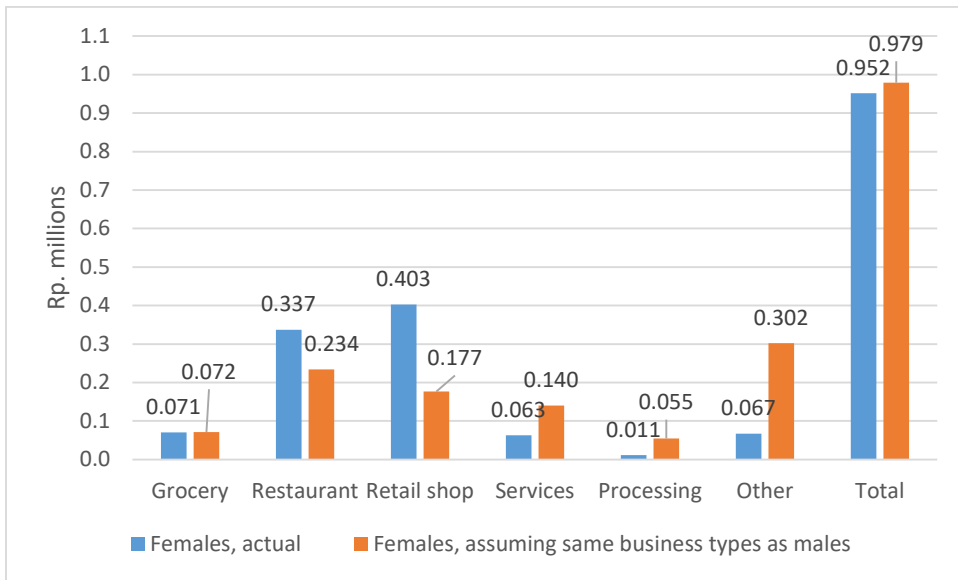
Figure A-4. Simulated primary business profits by business type (Scenario 2)

Table A-1. Primary business profits (without winsorization, t-statistics in parentheses)

	Dependent variable: Average monthly profit in primary business (IHS)[a]		
	Both sexes	Females	Males
	(1)	(2)	(3)
Female entrepreneur	-0.260		
	(-11.72)***		
Age 26-30 [b]	0.030	-0.015	0.057
	(0.67)	(-0.27)	(0.72)
Age 31-35 [b]	-0.006	0.012	-0.095
	(-0.13)	(0.23)	(-1.17)
Age 36-44 [b]	0.029	0.031	-0.050
	(0.65)	(0.58)	(-0.61)
Age 41-45 [b]	0.024	0.012	-0.033
	(0.51)	(0.21)	(-0.40)
Age 46-50 [b]	-0.009	0.027	-0.128
	(-0.18)	(0.44)	(-1.50)
Age 51-55 [b]	-0.066	-0.023	-0.165
	(-1.15)	(-0.31)	(-1.81)
Schooling: Primary completed [c]	0.154	0.198	0.100
	(2.25)*	(2.01)*	(1.07)
Schooling: Lower-secondary completed [c]	0.130	0.154	0.106
	(1.92)	(1.55)	(1.14)
Schooling: Upper-secondary completed [c]	0.179	0.215	0.144
	(2.66)**	(2.15)*	(1.54)
Schooling: Tertiary completed [c]	0.063	0.118	0.004
	(0.79)	(1.06)	(0.04)
Cognitive ability score (0-4) [d]	0.015	0.022	0.005
	(1.42)	(1.72)	(0.25)
Willingness to take risk (1-10) [d]	0.018	0.015	0.020
	(4.47)***	(2.87)**	(3.39)***
Household size [d]	0.008	0.007	0.010
	(0.96)	(0.70)	(0.77)
Married [e]	0.083	0.057	0.200
	(2.84)**	(1.51)	(3.61)***
Number of entrepreneur's children living in HH [d]	0.013	0.024	-0.001
	(0.96)	(1.29)	(-0.05)
Urban resident [d]	0.010	-0.006	0.038
	(0.32)	(-0.17)	(0.80)
District of residence: Bojonegoro [f]	0.048	0.067	0.019
	(1.44)	(1.64)	(0.36)
District of residence: Tuban [f]	0.087	0.094	0.083
	(2.72)**	(2.36)*	(1.71)
District of residence: Lamangan [f]	0.137	0.150	0.120
	(5.09)***	(4.52)***	(2.88)**
District of residence: Gresik [f]	0.254	0.225	0.313
	(3.14)**	(2.80)**	(2.32)*
Total value of business assets (Rp. millions) [d]	0.180	0.172	0.185
	(27.24)***	(19.59)***	(18.17)***
Type of primary business: Restaurant [g]	-0.164	-0.165	-0.160
	(-4.25)***	(-3.20)**	(-2.47)*
Type of primary business: Retail shop [g]	-0.406	-0.434	-0.325
	(-10.69)***	(-8.64)***	(-4.51)***

	Dependent variable: Average monthly profit in primary business (IHS)[a]		
	Both sexes	Females	Males
	(1)	(2)	(3)
Type of primary business: Service[g]	-0.352	-0.414	-0.283
	(-8.01)***	(-6.63)***	(-4.14)***
Type of primary business: Processing[g]	-0.207	-0.231	-0.154
	(-3.16)**	(-1.57)	(-1.77)
Type of primary business: Other[g]	-0.228	-0.254	-0.174
	(-5.46)***	(-4.03)***	(-2.73)**
Primary business started 1-<5 years ago[b]	0.043	0.085	0.003
	(1.09)	(1.76)	(0.05)
Primary business started 5-<10 years ago[b]	-0.007	0.017	-0.011
	(-0.13)	(0.26)	(-0.11)
Primary business-started more than 10 years ago[b]	-0.034	0.018	-0.057
	(-0.45)	(0.20)	(-0.42)
Number of years working in primary business [d]	0.028	0.022	0.033
	(3.52)***	(2.41)*	(2.46)*
Number of years working in primary business (squared) [d]	-0.001	-0.000	-0.001
	(-2.26)*	(-1.07)	(-1.98)*
Business 100% owned by entrepreneur[d]	-0.007	-0.237	0.104
	(-0.06)	(-1.17)	(0.80)
Constant	0.422	0.372	0.300
	(2.88)**	(1.53)	(1.58)
R-squared	0.27	0.19	0.22
N	4,794	2,829	1,965

* p<0.05, ** p<0.01, *** p<0.001 (estimated standard errors adjusted for clustered sampling)

Notes:

Italicized variables are binary (dummy) variables.

The hypothesis that all coefficients in the model are equal between females and males cannot be rejected at the 0.05 level.

[a] The dependent variable is an inverse hyperbolic sine transformation (similar to a natural log transformation).

[b] The omitted category is Age 18-25. The age variables as a group are not statistically significant in columns 1-3. The hypothesis that the age coefficients are equal between females and males cannot be rejected at the 0.05 level.

[c] The omitted category is No schooling. The schooling variables as a group are significant at the 0.01 level for both sexes combined (column 1) and at the 0.05 for females (column 2).

[d] Estimated coefficient does not vary significantly between females and males.

[e] Estimated coefficient is significantly different at the 0.05 level between females and males.

[f] The omitted category is Resident of Ngawi district. The district of residence variables as a group are statistically significant at the 0.001 level in columns 1-3. The hypothesis that the district of residence coefficients are equal between females and males cannot be rejected at the 0.05 level.

[g] The omitted category is Type of primary business: Grocery. The type of business variables as a group are statistically significant at the 0.001 level in columns 1-3. The hypothesis that the type of business coefficients are equal between females and males cannot be rejected at the 0.05 level.

h The omitted category is Primary business started less than one year ago. The estimated coefficients of the business age variables as a group are statistically insignificant in columns 1-3. The hypothesis that the business age coefficients are equal between females and males cannot be rejected at the 0.05 level.

Table A-2. Primary business profits (with winsorization, t-statistics in parentheses)

	Dependent variable: Average monthly profit in primary business (IHS)[a]		
	Both sexes	Females	Males
	(1)	(2)	(3)
Female entrepreneur	-0.257		
	(-12.09)***		
Age 26-30 [b]	0.024	-0.016	0.044
	(0.55)	(-0.28)	(0.57)
Age 31-35 [b]	-0.008	0.010	-0.095
	(-0.19)	(0.19)	(-1.20)
Age 36-44 [b]	0.024	0.027	-0.056
	(0.54)	(0.51)	(-0.69)
Age 41-45 [b]	0.026	0.010	-0.026
	(0.54)	(0.18)	(-0.31)
Age 46-50 [b]	-0.004	0.025	-0.115
	(-0.08)	(0.42)	(-1.36)
Age 51-55 [b]	-0.067	-0.025	-0.165
	(-1.21)	(-0.33)	(-1.85)
Schooling: Primary completed [c]	0.148	0.195	0.092
	(2.18)*	(1.98)*	(0.99)
Schooling: Lower-secondary completed [c]	0.120	0.150	0.086
	(1.78)	(1.51)	(0.94)
Schooling: Upper-secondary completed [c]	0.168	0.205	0.132
	(2.52)*	(2.05)*	(1.42)
Schooling: Tertiary completed [c]	0.064	0.123	0.001
	(0.81)	(1.10)	(0.01)
Cognitive ability score (0-4) [d]	0.017	0.020	0.011
	(1.64)	(1.58)	(0.66)
Willingness to take risk (1-10) [d]	0.016	0.014	0.019
	(4.47)***	(2.79)**	(3.51)***
Household size [d]	0.008	0.007	0.011
	(1.00)	(0.70)	(0.88)
Married [e]	0.079	0.052	0.194
	(2.74)**	(1.39)	(3.64)***
Number of entrepreneur's children living in HH [d]	0.012	0.022	-0.004
	(0.90)	(1.28)	(-0.19)
Urban resident [d]	0.011	-0.003	0.039
	(0.38)	(-0.09)	(0.84)
District of residence: Bojonegoro [f]	0.049	0.065	0.020
	(1.55)	(1.63)	(0.45)
District of residence: Tuban [f]	0.085	0.086	0.090
	(2.81)**	(2.23)*	(1.97)*
District of residence: Lamangan [f]	0.136	0.146	0.124
	(5.34)***	(4.47)***	(3.22)**
District of residence: Gresik [f]	0.252	0.217	0.323
	(3.26)**	(2.84)**	(2.42)*
Total value of business assets (Rp. millions) [d]	0.176	0.170	0.179
	(28.27)***	(20.04)***	(19.08)***
Type of primary business: Restaurant [g]	-0.161	-0.167	-0.149
	(-4.44)***	(-3.31)**	(-2.57)*
Type of primary business: Retail shop [g]	-0.401	-0.432	-0.317
	(-11.45)***	(-8.79)***	(-5.05)***
Type of primary business: Service [g]	-0.340	-0.407	-0.262

	Dependent variable: Average monthly profit in primary business (IHS)[a]		
	Both sexes	Females	Males
	(1)	(2)	(3)
	(-8.19)***	(-6.65)***	(-4.26)***
Type of primary business: Processing[g]	-0.190	-0.226	-0.126
	(-2.99)**	(-1.54)	(-1.56)
Type of primary business: Other[g]	-0.221	-0.262	-0.158
	(-5.70)***	(-4.33)***	(-2.77)**
Primary business started 1-<5 years ago[b]	0.044	0.085	0.001
	(1.12)	(1.78)	(0.01)
Primary business started 5-<10 years ago[b]	-0.007	0.021	-0.022
	(-0.13)	(0.33)	(-0.23)
Primary business-started more than 10 years ago[b]	-0.031	0.015	-0.055
	(-0.43)	(0.17)	(-0.42)
Number of years working in primary business[d]	0.027	0.021	0.031
	(3.52)***	(2.40)*	(2.46)*
Number of years working in primary business (squared)[d]	-0.000	-0.000	-0.001
	(-2.27)*	(-1.08)	(-1.98)*
Business 100% owned by entrepreneur[d]	-0.009	-0.236	0.101
	(-0.08)	(-1.15)	(0.81)
Constant	0.444	0.404	0.310
	(3.09)**	(1.66)	(1.68)
R-squared	0.28	0.19	0.22
N	4,794	2,829	1,965

* $p<0.05$, ** $p<0.01$, *** $p<0.001$ (estimated standard errors adjusted for clustered sampling)

Notes:

Italicized variables are binary (dummy) variables.

The hypothesis that all coefficients in the model are equal between females and males cannot be rejected at the 0.05 level.

[a] The dependent variable is an inverse hyperbolic sine transformation (similar to a natural log transformation).

[b] The omitted category is Age 18-25. The age variables as a group are not statistically significant in columns 1-3. The hypothesis that the age coefficients are equal between females and males cannot be rejected at the 0.05 level.

[c] The omitted category is No schooling. The schooling variables as a group are significant at the 0.05 level for both sexes combined (column 1).

[d] Estimated coefficient does not vary significantly between females and males.

[e] Estimated coefficient is significantly different at the 0.05 level between females and males.

[f] The omitted category is Resident of Ngawi district. The district of residence variables as a group are statistically significant at the 0.001 level in columns 1-3. The hypothesis that the district of residence coefficients are equal between females and males cannot be rejected at the 0.05 level.

[g] The omitted category is Type of primary business: Grocery. The type of business variables as a group are statistically significant at the 0.001 level in columns 1-3. The hypothesis that the type of business coefficients are equal between females and males cannot be rejected at the 0.05 level.

[h] The omitted category is Primary business started less than one year ago. The estimated coefficients of the business age variables as a group are statistically insignificant in columns 1-3. The hypothesis that the business age coefficients are equal between females and males cannot be rejected at the 0.05 level.