Gender, Entrepreneurship, and the Formal–Informal Dilemma: Evidence from Indonesia

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Summary. — This study analyzes the preferences of entrepreneurs about formality and focuses on the role of gender. Relying on original data collected in Indonesia, we unpack the differences between various types of female entrepreneurs (currently in the informal sector) according to their preferences about formalization. Contrary to the existing literature, we find that female entrepreneurs possess highly nuanced preferences about formalization that are conditional on many factors. The preference for formalization is strongest among female entrepreneurs who are older, married, rural-based, and have recently started their firms. Our work contributes to research that seeks to better understand entrepreneurial preferences and the role that gender plays.

Key words — entrepreneurs, gender, informal sector, formalization, Indonesia, Asia

1. INTRODUCTION

The informal sector plays an important role in developing countries as a source of income and employment. For entrepreneurs, the decision to open an informal firm—instead of a formal one—can be the result of numerous factors. Many entrepreneurs select the informal sector simply as the result of structural disadvantages according to their gender, income level, education, class, ethnicity, or religion. Around the world, gender discrimination leads women to look to the informal sector for viable income-earning opportunities. Cultural or state-sanctioned discrimination forces ethnic minorities to rely on the informal sector for survival. Many individuals prefer the informal sector when the government imposes high regulatory barriers to opening a formal firm or accessing credit. Despite certain advantages of informality, it can have a negative effect on an entrepreneur’s income-earning potential and hurt a firm’s ability to stay competitive over time.

Many studies posit that the informal sector is well-tailored to the needs of female entrepreneurs because it provides greater flexibility in terms of working hours, pace of work, and proximity of the job to one’s home (Bahramitash & Salehi Esfahani, 2011; Chen, 2001; Manning, 1998; Poncelp & Steiger, 1996). Indeed, studies of developing countries highlight the overwhelming presence of women in the informal sector, particularly in trade-based activities and as own-account workers in household enterprises (for an overview of the literature, see Chant & Pedwell, 2008). Most women-owned firms are small-scale, self-financed, low-technology, and labor-intensive operations (Klapper & Parker, 2011). It is often argued that female entrepreneurs prefer the informal sector due to their family responsibilities, lower level of education, or the type or size of enterprise selected (World Bank, 2009, p. xiv).

This paper analyzes the preferences of entrepreneurs about the decision to formalize their informal firms, and specifically focuses on the role of gender. Relying on an original dataset collected in Indonesia, we take inspiration from the writings on gender and intersectionality (Crenshaw, 1991; Shields, 2008) and unpack the differences between various types of female entrepreneurs with regard to their preferences about formalization. We find that the preference for formalization is strongest among female entrepreneurs who are older, married, rural-based, and have recently started their firms. Education is positively linked with a preference to formalize, but education does not interact with gender in any meaningful way. Entrepreneurs who prefer to formalize tend to reason that formalization will help them access credit. Our work contributes to a large body of research that seeks to better understand entrepreneurial preferences in developing economies, specifically as it pertains to gender differences and preferences about the formal versus the informal sector. Although much of the research on entrepreneurial preferences holds that female entrepreneurs have a preference for informality, our study finds instead that female entrepreneurs generally prefer the formal sector. However, their preferences are conditional on a number of other factors such as age, location of firm, and type of firm. Unpacking the preferences of female entrepreneurs is an essential part of understanding who in an economy benefits from formality, as well as which types of entrepreneurs are more likely to support (or reject) a push for greater formalization of the private sector.

We begin with a brief review of the existing research on informality, entrepreneurship, and the role of gender. Next, we discuss the case of Indonesia and introduce evidence from semi-structured interviews conducted in East Java during the summer of 2012. The following section outlines the methodology and descriptive statistics emerging from surveys that were subsequently conducted in North Sumatra and East Java in the fall of 2012. We employ logistic regression to uncover the determinants of an entrepreneur’s preference about formalization, as well as the reasons for their preference. The paper concludes by discussing the broader implications of our findings for scholars and development practitioners.

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2. INFORMALITY, ENTREPRENEURSHIP, AND THE ROLE OF GENDER

While there is no universal definition of the term “informal sector,” it is generally understood as a “heterogeneous group of activities and employment relationships that share one common characteristic—the lack of legal recognition, regulation or protection” (Lloyd-Evans, 2008, p. 1885). \(^1\) Around the world, the informal sector plays an important role as a site of entrepreneurship and employment. According to the International Labour Organization (2002), 50–75% of all non-agricultural employment in the developing world exists in the informal sector. The World Bank estimates that the informal sector averaged 38.4% of GDP in Sub-Saharan African countries during 1999–2007 (Schneider, Buehn, & Montenegro, 2010). Even among high-income OECD countries, the informal sector was responsible for 13.5% of GDP on average. Although some characterize the informal sector as a barrier to development, it plays an important role in poverty alleviation and as a logical alternative to the formal sector when entry barriers are high.

A number of factors encourage informality. When there are high fixed costs to formal market entry (e.g., numerous regulatory procedures, high costs of registration, or high barriers to access credit), entrepreneurs generally prefer to open an informal firm (De Soto, 2002; Djankov, La Porta, Lopez-de-Silanes, & Shleifer, 2002; Klapper, Amit, Guillén, & Quesada, 2007; Straub, 2005). If the prevailing wage in formal employment is low, an informal firm may generate more income for an individual. Some prefer the informal sector because it offers greater independence and flexibility, not to mention the principal advantage of evading regulation and taxation. In countries that experience frequent economic shocks, the informal sector is better insulated from crisis and can function as a “safety net” for households (Looney, 2006; Wallace & Latcheva, 2006). Although there is a limit to the informal sector’s ability to absorb labor during a severe crisis (Galli & Kucera, 2003), in many countries it operates counter-cyclically as a source of employment during downturns (Loayza & Rigolini, 2011). Low levels of education or unequal access to information about credit can also encourage informality (La Porta & Shleifer, 2008; Maloney, 2004; Webster, 2005).

Notwithstanding the above, a range of negative consequences can result from situating one’s firm in the informal sector. Informal firms cannot benefit from property rights protection or contract enforcement laws provided by the state (Straub, 2005). Informal firms may be unable to access key public goods that enhance productivity, such as electrical power. Quantitative cross-national studies find that informal firms are substantially less productive than formal firms, even small-sized ones. This is likely explained by differences in human and physical capital. Formal firms tend to have better educated owners and better access to markets, services, and credit than informal firms (La Porta & Shleifer, 2008). In Ethiopia, very small informal firms have advantages over formal firms, but formal firms receive higher marginal returns to capital and overall profitability after controlling for capital stock (Siba, 2015). Furthermore, there may be a “lock-in” tendency among informal firms as their owners become more resistant to formalization over time.

While much of the quantitative work on the informal sector reveals its negative aspects, recent work in urban studies counters the commonly held association of informality with poverty and questions the utility of understanding economies as having an inherently dual nature (AlSayyad & Roy, 2004; Roy, 2009b). These scholars argue that informality is an ambiguous concept, one that is constantly in flux given the role of the state in defining what is informal and what is not (Roy, 2009a). Consequently, it is important to examine how government policymaking affects the nature of informality, and how different types of informality result. In many countries, such as India, the government pursues a strategy of economic development by taking certain economic activities and defining them as informal, and therefore “illegal” or “illegitimate” (Roy, 2009b). In this sense, the informal sector emerges not as an organic alternative to the formal sector but instead a direct outcome of the government’s strategies for planning and development.

Does gender shape an entrepreneur’s preference about formality? Are female entrepreneurs more likely to prefer the formal sector or the informal sector? Much of the extant research finds that women prefer the informal sector because it provides greater flexibility in terms of working hours, pace of work, proximity of the job to one’s home, and ease of entry and exit (Bahramitash & Salehi Esfahani, 2011; Chen, 2001; Manning, 1998; Poncela & Steiger, 1996). For instance, a study of Nicaragua maintains that “Women prefer the informal sector, and it prefers them” (Poncela & Steiger, 1996, p. 53). Researchers also emphasize that a preference for informality may result from the types of sectors to which women gravitate, as well as the smaller-than-average size of most female-owned firms (World Bank, 2009). In the developing world, women are usually found in labor-intensive service and trade sectors, which are less regulated than capital-intensive sectors such as manufacturing. Smaller firms with fewer or no employees and those based at home are harder to regulate than large, publicly visible ones. A study of the Dominican Republic found that female-owned firms were significantly smaller than male-owned firms (about half as many employees), more likely to operate out of the home, and more likely to be own-account enterprises (Grasmuck & Espinal, 2000).

Female entrepreneurs face barriers to the formal sector that can force them into the informal sector. Research shows that female entrepreneurs have less access to credit from banks and financial institutions than their male counterparts (Klapper & Parker, 2011). Other studies find that the difference between men and women in rates of formal entrepreneurship is less the result of legal and institutional barriers but more due to unequal access to finance (Estrin & Mickiewicz, 2009). Domestic responsibilities can impede entrepreneurial success for women, restricting the growth of their firms and forcing them to remain in the informal sector. Unequal access to education has a negative effect on women who eventually become entrepreneurs. Educational attainment is positively linked with income for entrepreneurs, with a slightly higher impact on women (Van der Sluis, Van Praag, & Vjiber, 2005).

The arguments and findings from the literature generate a number of theoretical predictions for our study. All else equal, female entrepreneurs who own informal firms should prefer to stay in the informal sector and not pursue formalization. This is especially the case for female-owned firms that engage in household enterprises and those that are open for a long period of time. Female entrepreneurs who are married should prefer to keep their firms informal, as this allows them greater flexibility to balance work with family responsibilities. Higher levels of education should be positively linked with a preference for the formal sector. Yet, the literature offers little insight into the role of age or the possibility of an urban–rural divide in preferences about formalization. Next, we discuss the
case of Indonesia and present evidence from semi-structured interviews that were conducted in East Java in 2012. We then test our theoretical predictions using the results of an original survey of entrepreneurs completed in East Java and North Sumatra in 2012.

3. FEMALE ENTREPRENEURS IN INDONESIA AND INSIGHTS FROM INTERVIEWS IN EAST JAVA

Indonesia is the fourth largest country in the world and home to approximately 22 million female entrepreneurs. About 60% of all micro-, small-, and medium-sized firms in Indonesia are owned by women (Hani, Rachmania, Setyaningsih, & Putri, 2012, p. 276). In the informal sector, women are slightly more likely to be entrepreneurs than men. Forty-five percent of women working in the Indonesian informal sector are entrepreneurs as compared to 43% of men (International Labour Organization., 2009). Across both the informal and formal sectors, the percentage of women who are entrepreneurs (as a percentage of the female working population) has remained constant over the last two decades—about 30% are “entrepreneurs without employees.” Although the category of “entrepreneurs with employees” comprises a much smaller share of the female working population, this figure grew from 0.3% to 1.7% during 1990-2011 (BPS-Statistics Indonesia., 2014).

Most of the research on female entrepreneurs in Indonesia focuses on their activities in the informal sector and household enterprises, emphasizing a female entrepreneur’s role in supplementing her husband’s income. Evidence suggests that many women become entrepreneurs because they have a low level of education or no formal training and do not qualify for wage employment in the formal sector. Ismail’s (1996) study of household enterprises in Sumatra found that less than 9% of female entrepreneurs had completed college. A study of the handmade bags industry in Yogyakarta found that 60% of female entrepreneurs and workers have only an elementary school education and less than 8% completed high school (Purwandari, 2002; cited in Tambunan, 2009, pp. 198-199).

Female entrepreneurs in Indonesia and other Asian developing countries face a range of obstacles during start-up and throughout the day-to-day activities of running a firm. Obtaining credit, managing a business while fulfilling family responsibilities, and dealing with gender discrimination are the most frequently highlighted obstacles (Firdausy, 1999; Ismail, 1996; Singh, Reynolds, & Muhammad, 2001; Tambunan, 2009). In Indonesia, female entrepreneurs are often discriminated against when seeking credit and negotiating with customers. Many report being harassed by bureaucrats and private dealers (Tambunan, 2009, p. 211).

Ethnicity and cultural norms also matter. Turner (2003) demonstrates that the ethnicity of female entrepreneurs plays a central role in their decision-making about a range of issues, from labor recruitment to product specialization to networking. Cultural and religious influences can limit an Indonesian woman’s mobility outside of the home, affecting her ability to cultivate a network to support the firm’s activities. A survey in Malaysia, Thailand, and the Philippines found that 34% of female firm owners reported never interacting with business associations, as compared with 26% among male firm owners (Bollinger & Merchant-Vega, 2013). The inability to expand their business networks serves as a major constraint on the growth of female-owned firms and limits their ability to connect with clients and increase their customer base (UNESCAP, 2005, pp. 18-19).

In order to better understand the state of female entrepreneurship in Indonesia, we first conducted semi-structured, face-to-face interviews in East Java during June 2012. Interview locations were Surabaya City, Malang City, and rural areas east of Malang City. These locations provided access to a wide range of individuals with in-depth knowledge about our topic of research. In order to identify a representative sample of individuals, local consultants made contacts with the Ministry of Manpower and Transmigration, an employer’s association, and a trade union. In total, we interviewed 40 individuals (27 women and 13 men). Participants belonged to the following occupational strata: government officials, current or former female entrepreneurs, employed women, employed men, and unemployed women. Interviews helped to reveal an experience-based, first-person account of key aspects of our study. The quotations that appear were selected because they help provide a rich description, one of the advantages of using qualitative methods. The interviews played an instrumental role in informing the design of surveys that were subsequently administered in North Sumatra and East Java in the fall of 2012.

A common refrain during the interviews was the lack of access to credit and information about how to apply for credit. An unemployed woman in her mid-thirties, who graduated from high school, expressed a desire to open her own business but is “afraid to find out about credit… I don’t know how to apply for credit” (Interview 4, Surabaya, June 26, 2012). An unemployed woman in her forties said that she is hoping to open a small grocery, but she does not have any start-up capital. She was concerned about taking out a loan:

“I know about credit that is provided by banks but I am afraid to find out more because what if I can’t repay the loan? I know that I have to provide collateral, like a house or a moped, and I don’t want to lose that. In 2011, a friend got a loan but wasn’t successful in her business. She borrowed from elsewhere to pay it back” (Interview 3, Malang, June 28, 2012).

Government officials agreed that access to credit is an obstacle to boosting female entrepreneurship in Indonesia. An official from the Ministry of Manpower and Transmigration in Surabaya City said:

“The government has an entrepreneurship program as a way for women to ‘help themselves’ and reduce unemployment. The government wants to encourage entrepreneurs. The main issue is access to credit. The government wants to encourage financial institutions to set lower interest rates and have simpler requirements for accessing loans to start a business” (Interview 1, Surabaya, June 25, 2012).

Other women expressed more confidence about applying for a loan and starting a business. A woman in her mid-twenties, who graduated from high school, recently left her job to care for her infant child. She plans to open a food stand when her children are older:

“I want to open my own small business selling food… I like the idea of working for myself and managing the money daily. The national bank gives loans for female entrepreneurs and I am confident that I can get one. My neighbor, a man, got a loan without having any capital and now he has a small hotel.”

She added that she would rather have a food stand than return to her job at a supermarket, even though she would not receive benefits. She noted that her parents are small business owners and “they want me to be an entrepreneur, and prefer that to a supermarket or factory job.” She estimated that she could make more money operating an informal food stand than as a wage employee (Interview 5, Surabaya, June 27, 2012). Other women, even those currently employed at
One woman started an informal firm with two other women that sold clothing in rural areas. However, one of the partners left the firm after getting married and the remaining partners did not have enough capital of their own to continue the business. One of the partners reported that she preferred entrepreneurial venture to her current job at a cigarette factory because it was in the informal sector and, according to her, “less stressful and more creative.” She believed that it was possible to make more money in the informal sector, and talked about her plans to open a coffee shop: “I would leave the cigarette company if I could. I need five million rupiah to open a coffee shop. ... I don’t know if I can get a loan. I don’t know how to get information about a loan” (Interview 3, Malang, June 29, 2012).

Men held entrepreneurial aspirations for their spouses—but only after their children are older. For example, a cook in his mid-twenties said: “Once our child grows up, I want my wife to be an entrepreneur and have her own small business. This is more flexible than working for someone. So, I expect that it probably will not be in the formal sector” (Interview 4, Surabaya, June 25, 2012). A woman in her late twenties with a six-year-old son said that her husband, a truck driver, supports her plan to open a coffee shop one day (Interview 1, Malang, June 28, 2012). Another woman wants to open a food stand when her children are older, saying: “My husband is on board with this plan. He thinks it will be a good source of income and he will leave his job to help” (Interview 2, Surabaya, June 27, 2012).

Overall, interviews revealed deep entrepreneurial aspirations from many Indonesian women. However, most were concerned about barriers to accessing credit and potential difficulties in managing a firm alongside fulfilling family responsibilities. Government officials in Surabaya City agreed with these concerns, adding that the country’s culture and the low level of human capital among women also limited their opportunities (Interview 2, Surabaya, June 25, 2012; Interview 3, Surabaya, June 25, 2012). Unsurprisingly, a number of women expressed a preference for an enterprise they could manage from home or in a location close to home. Some former entrepreneurs indicated a preference to leave wage work to try again at running a small firm.

The high degree of interest in opening a firm may be the product of the rise in female entrepreneurship in Indonesia since the 2000s. The Global Entrepreneurship Monitor reports that the percentage of the female population (age 18–60) who are either nascent entrepreneurs or owner–managers of a new business increased from 18.7% to 25.1% during 2006–13. Compared with other Southeast Asian countries, Indonesia charted the most growth and had the highest overall percentage of female entrepreneurship during this period. Next, we discuss the methodology and provide descriptive statistics of an original survey designed to capture the relationship between gender and entrepreneurial preferences about formalization.

4. SURVEY DATA, METHODOLOGY, AND DESCRIPTIVE STATISTICS

Following the completion of semi-structured interviews, we conducted surveys in East Java and North Sumatra from September–October, 2012. Funding for the surveys was provided by the International Labour Organization and the Australian Agency for International Development (AusAID). Survey locations were identified using a multi-stage stratified sampling procedure developed by researchers at BPS-Statistics Indonesia. The probability of a household unit being selected was based on subnational population data. Ten households in each village were randomly selected. Students from Universitas Negeri Medan (North Sumatra) and University of Brawijaya (Malang, East Java) were trained as enumerators. By design, female respondents were oversampled given the focus of our study. All participants were required to be at least 18 years old. We identified a total of 141 individuals who are entrepreneurs with enterprises currently located in the informal sector. In the sample population, there are 85 female entrepreneurs and 56 male entrepreneurs. Figure 1 displays the survey locations in each province. The size of the dot is proportional to the number of respondents at each location. Table 1 displays descriptive statistics.

When asked the question “Do you want to formalize your business?” Fifty-five percent of female entrepreneurs responded “yes” and 48% of male entrepreneurs responded “yes.” Even though a slightly higher percentage of women prefer formalization, a Chi-squared test indicates that the difference between genders is not statistically significant ($P = 0.41$). Yet, this result is of considerable interest because it conflicts with the long-standing finding in the literature that female entrepreneurs should prefer the informal sector to the formal sector. In fact, a slight majority prefer the formal sector.

The average age, marital status, educational attainment level, and urban-to-rural ratio were nearly the same for female and male entrepreneurs in the sample population. The average age of female entrepreneurs was 38 years and the average age of male entrepreneurs was 40 years. About 84% of female entrepreneurs and 80% of male entrepreneurs were married. The average female and male entrepreneurs had nearly the same level of education: between one and two years of high school completed. About 73% of female and male entrepreneurs lived in rural areas and 27% in urban areas. Forty-five percent of entrepreneurs belonged to a non-Javanese ethnic minority group (e.g., Batak, Madurese, Chinese, Minang, Sundanese, etc.). Differences along gender lines emerged with respect to economic sectors and the nature of firms. While 55% of female entrepreneurs had a business that was categorized in the trade sector, just 20% of male entrepreneurs were in this category. As anticipated, a much higher percentage of women had enterprises based out of their home than men (48% to 25%). On average, male-owned firms were more established than female-owned firms. The average male-owned firm had been open for 4.8 years versus 3.3 years for a female-owned firm.

Next, we utilize the tools of logistic regression to uncover the determinants of an entrepreneur’s preference about formalization. The dependent variable, Formalize, is an entrepreneur’s preference about formalization of their currently informal firm (binary: yes/no). The independent variables comprise a range of individual- and firm-level factors. Female, Married, Urban, and Non-Javanese are binary variables indicating an entrepreneur’s gender, marital status, if they live in an urban area, and if they belong to a non-Javanese ethnic minority group. Age is a continuous variable, as is Education, which indicates the years of schooling completed. Trade Sector and Home-Based are binary variables indicating whether the firm is located in the trade sector and is based at home. Duration Open is a log transformed measure of the number of months that the firm has been open. Overall, the dataset is 98% complete. Given the nature of the data collection method,
we cluster the analysis by province and include a post-stratification weight due to the gender imbalance.

In order to help explain the statistical findings, we examine the reasons that entrepreneurs provided to justify their preference. For those who preferred to formalize, the possible reasons to choose from are the following: access to credit/loans/finance; greater security over contracts; access to business associations; greater access to cooperatives; greater security to operate business; less informal fees (mafia, police, etc.); do not know; and no response. For those who preferred to remain informal, the possible reasons to choose from are the following: taxes and regulations; no benefits from formalization; prefer the informal economy; don’t know how; government does not allow to get a license; informal work provides higher income; do not know; and no response.

5. STATISTICAL ANALYSIS AND EMPIRICAL FINDINGS

Table 2 (first column) presents the results from a logistic regression model when the dependent variable is the preference to formalize and the independent variables are individual-level factors. As expected, education is positively associated with the preference to formalize. The coefficient indicates that a one-year increase in educational attainment is associated with a 14% increase in the odds of preferring to formalize. Married entrepreneurs are two-and-a-half times less likely to prefer formalizing their firms. All else equal, belonging to an ethnic minority group has no association with the preference to formalize. Female entrepreneurs are neither more nor less likely to prefer formalizing their firms after controlling for other factors.

Once firm-level variables are added to the model in the second column, the individual-level variables remain statistically significant and hold their magnitude. Owners whose firms engage in a trade-based activity or are home-based are more likely to prefer formalization. Overall, the full model suggests that highly educated, unmarried owners of trade- and home-based informal firms are most likely to prefer formalization.

Although the gender variable, Female, is not a significant predictor of Formalize, we have a number of reasons to believe that their association is conditional on other factors.
instance, the existing literature tells us that female entrepreneurs tend to have narrow business networks compared to men. Women based in urban areas, therefore, may have an easier time cultivating business networks than those based in rural areas, and may have different preferences about formalization. We also know that running a business from home allows an entrepreneur to better coordinate activities with family responsibilities. Thus, women with home-based firms may be less likely to prefer formalization. To be sure, a number of other conditional arguments can be made. The larger point, and what the writings on gender and intersectionality tell us, is that we have reasons to believe an association between gender and \textit{Formalize} is conditional on the value of other factors. That is, a woman’s gender is not the only facet of her identity that shapes her experiences, attitudes, and behavior. However, the writings on gender and the informal sector have traditionally focused on gender-class or gender-class-race dynamics (Chant & Pedwell, 2008, p. 9). In this study, we argue that other axes of identification are equally likely to be important, such as a female entrepreneur’s age, location (urban versus rural), marital status, and the nature of her firm’s activities.

\begin{table}
\centering
\caption{Descriptive statistics}
\begin{tabular}{lcccccc}
\hline
 & Obs & Mean & SD & Min & Max \\
\hline
Formalize & 141 & 0.525 & 0.501 & 0 & 1 \\
Age & 141 & 38.972 & 11.621 & 18 & 73 \\
Education & 140 & 10.821 & 4.171 & 0 & 27 \\
Urban & 140 & 0.229 & 0.421 & 0 & 1 \\
Married & 141 & 0.823 & 0.383 & 0 & 1 \\
Female & 141 & 0.603 & 0.491 & 0 & 1 \\
Non-Javanese & 141 & 0.454 & 0.5 & 0 & 1 \\
Duration Open* & 140 & 3.851 & 1.415 & 0 & 6.176 \\
Trade Sector & 141 & 0.475 & 0.501 & 0 & 1 \\
Home-Based Firm & 141 & 0.39 & 0.49 & 0 & 1 \\
Female*Age & 141 & 22.972 & 20.556 & 0 & 73 \\
Female*Education & 140 & 6.529 & 6.104 & 0 & 20 \\
Female*Urban & 140 & 0.136 & 0.344 & 0 & 1 \\
Female*Married & 141 & 0.504 & 0.502 & 0 & 1 \\
Female*Non-Javanese & 141 & 0.281 & 0.451 & 0 & 1 \\
Female*Duration Open* & 140 & 2.217 & 2.099 & 0 & 6.176 \\
Female*Trade Sector & 141 & 0.333 & 0.473 & 0 & 1 \\
Female*Home-Based Firm & 141 & 0.291 & 0.456 & 0 & 1 \\
Greater security & 74 & 0.473 & 0.503 & 0 & 1 \\
Access to credit & 74 & 0.27 & 0.447 & 0 & 1 \\
Taxes and regulations & 67 & 0.164 & 0.373 & 0 & 1 \\
\hline
\end{tabular}
\end{table}

\begin{table}
\centering
\caption{The preference to formalize among entrepreneurs in the informal sector located in North Sumatra and East Java, Indonesia}
\begin{tabular}{lccc}
\hline
 & Mean & SD & Min \\
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Formalize & 0.525 & 0.501 & 0 \\
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Note: A superscript of “a” indicates log transformation of the variable.

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Note: * sig. at 10%; ** sig. at 5%; *** sig. at 1%. Results are from a logistic regression model with cluster-robust standard errors and post-stratification weights. The dependent variable is coded “1” if the respondent indicated they prefer to formalize their informal firm; “0” if they prefer to remain informal.
We employ interaction terms in order to test for conditional relationships between gender and Formalize. Table 3 presents the findings when Female interacts with the other independent variables. While a number of the interaction terms emerge as highly statistically significant, it is important to recognize that we cannot ascertain anything meaningful about the sign, size, or significance of an interaction coefficient when it is used in a logistic regression (Ai & Norton, 2003). The general recommendation is to provide visualizations that allow us to properly ascertain the marginal effects, conditional effects, and standard errors (Brambor, Clark, & Golder, 2005; Mitchell & Chen, 2005).

Figure 2 contains four plots when Female is interacted with the binary variables: Urban, Married, Trade, and Home-Based. The probability of preferring to formalize is calculated as contingent on the contribution of the other covariates in the full model, per the approach by Mitchell and Chen (2005). Each covariate's contribution is held at its median value. The upper left-hand plot indicates that the probability of preferring to formalize clearly diverges along gender and regional lines. Rural women have a 20% higher probability of preferring to formalize than urban women. Urban female entrepreneurs have a 38% lower probability of preferring to formalize than urban male entrepreneurs. Yet, rural female entrepreneurs have a 20% higher probability of preferring to formalize than rural male entrepreneurs.

What reason did rural women provide for preferring to formalize? The modal choice was that formalization would assist them with access to credit (36%). Indeed, this is consistent with the broader literature on female entrepreneurship. The modal choice among urban men is that formalization would give them greater security to operate their business (67%). Among rural men who preferred to remain informal, many did not provide a reason for their preference or declined to answer the question. Among those who provided a reason, 40% did not believe there were any benefits from formalization.

Gender differences arise with respect to the marital status of entrepreneurs, as indicated in the upper right-hand plot of Figure 2. Whereas single men are substantially more likely to prefer formalization than married men, marital status has no effect on female entrepreneurs. Nearly all single women who preferred to formalize provided the reason of greater security to operate their business. Among married women, 38% justified formalization as assisting with access to credit, and 35% justified it as providing greater security to operate their business. Of the married men who provided a reason to

Table 3. The preference to formalize among entrepreneurs (with interaction terms)

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>z-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>-1.798***</td>
<td>(0.688)</td>
<td>-2.56</td>
<td>0.0101</td>
</tr>
<tr>
<td>Age</td>
<td>-0.49</td>
<td>(0.045)</td>
<td>-1.1</td>
<td>0.27</td>
</tr>
<tr>
<td>Education</td>
<td>0.141**</td>
<td>(0.064)</td>
<td>1.92</td>
<td>0.054</td>
</tr>
<tr>
<td>Urban</td>
<td>0.3</td>
<td>(0.674)</td>
<td>0.53</td>
<td>0.59</td>
</tr>
<tr>
<td>Married</td>
<td>-0.696**</td>
<td>(0.139)</td>
<td>-3.67</td>
<td>0.0018</td>
</tr>
<tr>
<td>Non-Javanese</td>
<td>-0.067</td>
<td>(0.452)</td>
<td>-1.45</td>
<td>0.15</td>
</tr>
<tr>
<td>Duration Open</td>
<td>0.026</td>
<td>(0.027)</td>
<td>1.34</td>
<td>0.18</td>
</tr>
<tr>
<td>Trade Sector</td>
<td>0.045</td>
<td>(0.048)</td>
<td>1.65</td>
<td>0.10</td>
</tr>
<tr>
<td>Home-Based Firm</td>
<td>0.255</td>
<td>(0.162)</td>
<td>1.58</td>
<td>0.117</td>
</tr>
<tr>
<td>Female*Age</td>
<td>0.052**</td>
<td>(0.012)</td>
<td>2.59</td>
<td>0.0098</td>
</tr>
<tr>
<td>Female*Education</td>
<td>-0.115</td>
<td>(0.175)</td>
<td>-0.67</td>
<td>0.50</td>
</tr>
<tr>
<td>Female*Urban</td>
<td>-1.778***</td>
<td>(0.615)</td>
<td>-3.29</td>
<td>0.0007</td>
</tr>
<tr>
<td>Female*Married</td>
<td>2.308**</td>
<td>(0.974)</td>
<td>2.37</td>
<td>0.018</td>
</tr>
<tr>
<td>Female*Non-Java</td>
<td>-0.471</td>
<td>(0.349)</td>
<td>-1.38</td>
<td>0.17</td>
</tr>
<tr>
<td>Female*Duration</td>
<td>-0.129***</td>
<td>(0.024)</td>
<td>-4.04</td>
<td>0.0001</td>
</tr>
<tr>
<td>Female*Trade</td>
<td>-1.006</td>
<td>(1.555)</td>
<td>-0.65</td>
<td>0.52</td>
</tr>
<tr>
<td>Female*Home</td>
<td>-0.429</td>
<td>(0.608)</td>
<td>-0.71</td>
<td>0.47</td>
</tr>
<tr>
<td>Constant</td>
<td>0.716</td>
<td>(2.047)</td>
<td>0.35</td>
<td>0.727</td>
</tr>
<tr>
<td>Observations</td>
<td>137</td>
<td>137</td>
<td>1.00</td>
<td>0.31</td>
</tr>
<tr>
<td>Pseudo R²</td>
<td>0.13</td>
<td>0.13</td>
<td>1.00</td>
<td>0.31</td>
</tr>
</tbody>
</table>

Note: * sig. at 10%; ** sig. at 5%; *** sig. at 1%. Results are from a logistic regression model with cluster-robust standard errors and post-stratification weights. The dependent variable is coded “1” if the respondent indicated they prefer to formalize their informal firm; “0” if they prefer to remain informal.
prefer the informal sector, 36% did not believe there were any benefits from formalization.

Female entrepreneurs involved in a trade sector have an 18% higher probability of preferring to formalize than those in a non-trade sector (bottom-left-hand plot of Figure 2). But overall, men involved in a trade sector are more likely than women to prefer formalization. Much like the woman interviewed in East Java who once ran a clothing business, female entrepreneurs in the trade sector may believe that they can earn more if they stay informal. Among women in non-trade sectors who preferred to formalize, the modal reason selected was access to credit (36%). Of the men who owned trade-based firms and preferred formalization, a very high majority (67%) said formalization would provide them with greater security to operate their business.

Although men who run home-based firms are more likely to prefer formalization, this variable has no effect on the preferences of female entrepreneurs (bottom-right-hand plot of Figure 2). This finding comes as a surprise, given that the existing literature suggests that women who work at home should prefer the informal sector to the formal sector. For male owners of home-based firms, the preference for formalization may be an aspiration to expand a family business given that this is likely to be a household’s primary source of income. The male owner may have encountered difficulties in securing wage employment and if they are married it is very likely that other family members (spouse, children, etc.) contribute to the business. Security of operation was a major concern for male owners of home-based firms—about 63% chose this reason for preferring to formalize. For women, security of operation was the modal category but this reason represented a lower share (44%).

Figure 3 illustrates that there are gender differences in the probability of preferring to formalize when we vary an entrepreneur’s age and the length of time that the firm has been open. But gender differences are statistically significant only at certain values. For age, the gender difference is statistically significant only above 43 years and insignificant below that value (left-hand plot). As age increases, female entrepreneurs have a higher probability of preferring formalization than male entrepreneurs. The gender difference with respect to duration open is statistically significant only when the firm has been open for less than 7.4 months (right-hand plot). As the length of time open increases beyond 7.4 months, any difference between men and women according to duration open disappears. Overall, women with newly established informal firms are more likely to prefer formalization than men with newly established informal firms.

Female entrepreneurs provide different reasons for preferring to formalize based on how long their firm has been open. For women who run newer firms (those open for less than the mean of 3.9 years), 20% preferred to formalize because of access to credit and 56% preferred to do so because of security of operation. Yet, this is the reverse for women who run older firms (open for more than 3.9 years). Here, 45% of them preferred to formalize because of access to credit whereas just 23% selected security of operation. These patterns reveal that female entrepreneurs become increasingly aware of the lack of credit access the longer they are in business. And it is important to point out that this problem is specific only to female entrepreneurs. Just 8% of male owners of well-established firms said that access to credit was a motivator to pursue formalization.

Logistic regression techniques are employed to analyze an entrepreneur’s reason for preferring to formalize versus remaining informal. Table 4 (first column) presents the individual- and firm-level determinants of selecting “Greater security to operate business” as the reason for preferring to formalize. This was the modal choice for all entrepreneurs who preferred to formalize (35%). The results show that Education and Urban are positively associated with seeking greater security of operation. Female has no association.
Non-Javanese entrepreneurs are more likely than Javanese entrepreneurs to justify formalization due to “greater security to operate business.” This may reflect a belief that formalization will help counter the discrimination they face in the business environment. The urban/rural finding is also of interest. Urban entrepreneurs are likely to be concerned about “flying under the government’s radar,” given that state enforcement tends to be better in cities than in rural areas.

The statistical analysis above, coupled with the interview data cited earlier, revealed that female entrepreneurs were more likely to have problems accessing credit. The results in the second column of Table 4 strongly confirm this. Female is positively associated with selecting “access to credit, loans/finance” as the reason for preferring to formalize. Older entrepreneurs are less likely to select this reason, perhaps an indication that older entrepreneurs have already developed a

<table>
<thead>
<tr>
<th>DV = Reason for preferring to formalize: “Greater security to operate business”</th>
<th>DV = Reason for preferring to formalize: “Access to credit, loan/finance”</th>
<th>DV = Reason for preferring to remain informal: “Taxes and regulations”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>$-0.519$</td>
<td>$0.842^{***}$</td>
</tr>
<tr>
<td>(1.055)</td>
<td>(0.272)</td>
<td>(1.269)</td>
</tr>
<tr>
<td>Age</td>
<td>$-0.012$</td>
<td>$-0.038^{***}$</td>
</tr>
<tr>
<td>(0.045)</td>
<td>(0.008)</td>
<td>(0.027)</td>
</tr>
<tr>
<td>Education</td>
<td>$0.227^{***}$</td>
<td>$-0.046$</td>
</tr>
<tr>
<td>(0.044)</td>
<td>(0.109)</td>
<td>(0.173)</td>
</tr>
<tr>
<td>Urban</td>
<td>$1.556^{***}$</td>
<td>$-0.054$</td>
</tr>
<tr>
<td>(0.052)</td>
<td>(0.445)</td>
<td>(0.544)</td>
</tr>
<tr>
<td>Married</td>
<td>$-0.737$</td>
<td>$2.362^{**}$</td>
</tr>
<tr>
<td>(0.523)</td>
<td>(0.954)</td>
<td>(0.369)</td>
</tr>
<tr>
<td>Non-Javanese</td>
<td>$1.168^{**}$</td>
<td>$-0.051$</td>
</tr>
<tr>
<td>(0.571)</td>
<td>(0.17)</td>
<td>(0.184)</td>
</tr>
<tr>
<td>Duration Open</td>
<td>$0.149$</td>
<td>$0.036$</td>
</tr>
<tr>
<td>(0.345)</td>
<td>(0.166)</td>
<td>(0.212)</td>
</tr>
<tr>
<td>Trade Sector</td>
<td>$1.551^{*}$</td>
<td>$-0.672$</td>
</tr>
<tr>
<td>(0.864)</td>
<td>(0.921)</td>
<td>(1.554)</td>
</tr>
<tr>
<td>Home-Based Firm</td>
<td>$0.44$</td>
<td>$-1.466$</td>
</tr>
<tr>
<td>(0.317)</td>
<td>(1.046)</td>
<td>(0.676)</td>
</tr>
<tr>
<td>Constant</td>
<td>$-3.939^{***}$</td>
<td>$-0.883$</td>
</tr>
<tr>
<td>(1.845)</td>
<td>(3.989)</td>
<td>(0.054)</td>
</tr>
<tr>
<td>$N$</td>
<td>73</td>
<td>73</td>
</tr>
<tr>
<td>Pseudo $R^2$</td>
<td>0.25</td>
<td>0.18</td>
</tr>
</tbody>
</table>

Note: * sig. at 10%; ** sig. at 5%; *** sig. at 1%. Results are from a logistic regression model with cluster-robust standard errors and post-stratification weights.
network of credit sources or are preferred by lenders. Married entrepreneurs were more likely to select this reason, perhaps a reflection of deeper concerns from those with families that they need credit to build their business faster.

Many of the writings on informality hold that the principal motivation for staying in the informal sector is to evade taxes and regulation. Quantitative research ties the size of the informal economy to the degree of regulatory barriers to formal market entry (Djankov et al., 2002). The third column of Table 4 displays the results when the dependent variable is “taxes and regulation” as the entrepreneur’s reason for remaining informal. Age and Urban have positive associations, but Married, Duration Open, and Home-Based have negative associations. On the one hand, it is logical to suppose that older entrepreneurs are more aware of the bureaucratic burdens of the formalization process than young entrepreneurs. Alternatively, older entrepreneurs may not have recent information about regulation and taxation and are simply concerned about dealing with an avalanche of rules. In Indonesia, there is ample justification for such concerns. According to the World Bank’s Doing Business dataset (2014), Indonesia has exceptionally high barriers to formal market entry compared to other developing countries. The country is ranked 175th out of 189 economies in terms of the ease of starting a business. Indonesia performs somewhat better in terms of access to credit (ranked 86th), but it is ranked very low with respect to paying taxes (137th).

Given the fact that urban residents tend to experience state bureaucracy more often than rural residents, they may similarly view the tax and regulatory constraints associated with running a formal business as overly burdensome. It may be more difficult to fly under the government’s radar as an urban informal firm, and consequently evading taxes and regulations are the primary concern. The decision to open a firm in one’s home is generally made because of the type of enterprise or due to the advantages of being able to coordinate work with one’s family responsibilities—not because of a desire to evade taxes and regulation. Indeed, for owners of home-based firms, the modal reason to remain informal was not to evade taxes and regulation but because they perceived no benefits from formalization (35%).

Overall, the analysis revealed a range of nuanced differences between men and women as well as among female entrepreneurs. Urban women are much less likely than urban men to prefer formalization, whereas rural women are more likely than rural men to prefer formalization. For rural women, formalizing one’s firm is largely understood as a ticket to better credit access. Marital status has no effect on women (contrary to what the literature would suggest), but it has a substantial effect on men as marriage renders a male entrepreneur less likely to want to pursue formalization. Women and men have opposing preferences about formalization according to whether or not their firm is in the trade sector. Older women and those who own newly established informal firms are more likely to prefer formalization. The longer a woman owns her business, the more aware she becomes of the credit-related benefits of the formal sector. For male entrepreneurs, however, access to credit is not a prime motivator for pursuing the formal sector. Instead, they view formalization as a means of achieving greater security over their business operations.

Our findings speak to the emerging literature on gender and intersectionality by opening up new axes of identification in understanding entrepreneurial preferences about formalization. For one, the role of age has received relatively little attention in the research on gender differences and intersectionality (see Hopkins & Pain, 2007). In our study, we find that gender and age interact, such that gender differences become more important as the age of the entrepreneur increases. Additionally, there is little comparative research on urban–rural differences among female entrepreneurs given that most studies focus on one location or the other. Our study finds considerable difference between urban and rural women with respect to preferences about formalization. Furthermore, these preferences directly contrast with those of urban and rural men. Another axis of identification, marital status, emerges in our study as a non-significant factor in determining a female entrepreneur’s preferences about formalization—yet it is a significant factor for male entrepreneurs.

6. CONCLUSION

Achieving greater formalization of the informal sector is routinely highlighted as an important goal for developing countries. In 2005, the Summit of the Organization of American States sought to promote targets for formalization, as did the International Labour Organization’s Hemispheric Agenda for the Americas, 2006–2015. How this is best achieved is still being debated by development practitioners and scholars. Yet, certain reforms are more likely than others to have an impact. Reducing the regulatory barriers to formality and improving labor standards to protect a wider range of workers are some of the ways to help promote formalization. Increasing education and training for entrepreneurs can also promote greater awareness of the benefits of formality (International Labour Organization, 2007).

Our study suggests that any policy strategy that seeks to boost formalization needs to first take into consideration the gender-based differences in the preferences of entrepreneurs. From here, it is essential to go beyond gender and examine differences that emerge along other axes of identification. As the writings on gender and intersectionality remind us, a woman who is uneducated and lives in a rural area is likely to have a “substantively distinct experience” from a woman who is highly educated and lives in an urban area (see Association for Women’s Rights in Development, 2004). Put simply, it is critical to unpack the differences between female entrepreneurs that emerge along multiple and layered identities. From a policymaking perspective, this is important because not all female (or male) entrepreneurs are likely to respond positively to formalization initiatives spurred by the government. As Chant and Pedwell (2008, p. 9) maintain, when we discuss women’s “empowerment” in the informal economy we need to ask “which women and where?” In Indonesia, female entrepreneurs hold different preferences according to their age, location (urban versus rural), and the nature of their firm’s activities—and these preferences are considerably different from those of male entrepreneurs.

Our study also revealed that the lack of credit for female entrepreneurs is an issue of paramount concern in Indonesia—as it is in other countries. Although creating programs that fund female entrepreneurs through micro-credit or other initiatives is a common way to deal with this problem, the types of firms that most women open in developing countries (small-scale, low-technology, and labor-intensive) are generally low on the list of priorities for a country like Indonesia. Consequently, these firms fail to link up with the rest of the economy. Specific programs that seek to target female “micro-entrepreneurs” often have a limited timeframe and carry a degree of tokenism. Economic exigencies or political cycles can threaten funding and render these programs ineffective. The reality is that a finance-driven approach to dealing
with the credit problem for female entrepreneurs does not address the larger and more long-term developmental problem at hand: the presence of gender-based inequities in credit-lending practices. Without a serious examination of how banks and financial institutions systematically underfund female-owned enterprises, the informal sector will continue to serve as the place for women to become entrepreneurs.

NOTES


2. Sixteen interviews were conducted in Surabaya City, 15 interviews were conducted in Malang City, and nine interviews were conducted in rural areas outside Malang City. No individual self-identified as ethnic Chinese. None of these individuals appeared in the sample population for the surveys conducted afterward.

3. Malaysia dropped from 11.1% to 5.5%, the Philippines dropped from 22.5% to 18%, Singapore increased from 3.7% to 8.2%, and Thailand increased from 14.2% to 17.3% (GEM, 2014).

4. Contact the authors for additional details about the sampling methodology.

5. The target was a female-to-male ratio of 70:30. This informed the allocation of sample groups, which was based on 2010 Census (Sensus Penduduk) data on the number of women residing in each village. For each household selected, enumerators received instructions to interview a woman or a man.

6. In North Sumatra, surveys were conducted in the following regencies/cities: Asahan, Batu Bara, Deli Serdang, Karo, Labuhan Batu, Labuhan Batu Selatan, Labuhan Batu Utara, Langkat, Mandailing Natal, Medan, Nias, Serdang Bedagai, Simalungun, Tapanuli Selatan, Tapanuli Tengah, and Toba Samosir. Seventy-nine percent of survey locations in North Sumatra were in rural areas and 21% in urban areas. In East Java, surveys were conducted in the following regencies/cities: Bangkalan, Banyuwangi, Gresik, Jombang, Kendal, Lumajang, Malang, Mojokerto, Nganjuk, Ngawi, Pamekasan, Pasuruan, Ponorogo, Sampang, Sidoarjo, Situbondo, Sumenep, Surabaya, and Tugenjanger. Seventy-six percent of survey locations in East Java were in rural areas and 24% in urban areas.

7. In Bahasa Indonesian: Apakah anda ingin menjadikan usahalbnis anda formal?

8. BPS-Statistics Indonesia established the methodology for defining areas as urban or rural. Urban areas satisfy specific criteria in terms of population density, percentage of agricultural households, and the number of urban facilities (roads, education, health services, etc.). Areas that do not satisfy these criteria are labeled rural.

9. Researchers highlight the role of ethnicity in shaping decision-making among entrepreneurs in Indonesia (Hitchcock, 2000; Koning, 2007; Turner, 2003). Entrepreneurs who belong to a non-Javanese ethnic minority group were equally likely to prefer formalization than remain informal (49% versus 51%). Although Javanese entrepreneurs appeared more likely to prefer formalization than remain informal (57% versus 43%), the statistical results in Table 3 consistently show that an entrepreneur’s ethnic group is not a predictor of the preference to formalize (this also holds for an analysis of only female entrepreneurs). Note that Chinese entrepreneurs comprised 1.4% of our sample population, thus we cannot make any meaningful statements regarding their preferences about formalization.

10. These results are when the other covariates are set to define the entrepreneur as rural, Javanese, married, and completed eight years of formal education. Their firm is non-trade, home-based, and has been open for 16 months (25th percentile value).

11. These results are when the other covariates are set to define the entrepreneur as rural, Javanese, married, 30 years old, and completed 10 years of formal education. Their firm is non-trade and home-based. Note that Duration Open is log transformed.

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Purwadari, I. (2002). The role of industry on women’s working opportunity and household income [in Indonesian], mimeographed. Yogyakarta: Faculty of Agriculture.


