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Gender and Finance in Sub-Saharan Africa

Are Women Disadvantaged?

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Abstract

This paper assesses whether there is a gender gap in the use of financial services by businesses and individuals in Sub-Saharan Africa. The authors do not find evidence of gender discrimination or lower inherent demand for financial services by enterprises with female ownership participation or by female individuals when key characteristics of the enterprises or individuals are taken into account. In the case of enterprises, they explain this finding with selection bias—females are less likely to run sole proprietorships than men, and firms with female ownership participation are smaller, but more likely to innovate. In the case of individuals, the lower use of formal financial services by women can be explained by gender gaps in other dimensions related to the use of financial services, such as their lower level of income and education, and by their household and employment status.

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Gender and Finance in Sub-Saharan Africa: Are Women Disadvantaged?

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1. Introduction

Access to and use of financial services by both enterprises and households is of increasing concern to policy makers across Africa and the developing world. Recent data collection efforts on both the enterprise and household levels have enabled a more rigorous analysis (World Bank, 2007). One important dimension in the access to finance debate, which has been less analyzed, is the gender gap. Specifically, it has often been argued that lack of access to finance impedes female entrepreneurship and prevents women from participating in the modern market economy. Given the overall lack of financial service provision, with fewer than one in five households having access to formal financial services, this problem is potentially more pressing in Sub-Saharan Africa than in other developing regions of the world (Honohan and Beck, 2007).

As documented by an extensive and still growing literature, access to credit is important for firm growth, especially that of small firms (Beck, Demirguc-Kunt and Maksimovic, 2005), and for new business creation (Klapper, Laeven and Rajan, 2006). Country-specific studies and randomized field experiments confirm that access to capital can be critical for firm growth (Banerjee and Duflo, 2008; De Mel, McKenzie and Woodruff, 2008). However credit is not the only financial service that seems to matter. Recent evidence shows that access to savings services can also increase enterprise investment, especially among female entrepreneurs (Dupas and Robinson, 2009). Broad access to financial services is not only important for individuals, but also for the economy at large; credit constraints reduce the efficiency of capital allocation and intensify income inequality by impeding the flow of capital to poor individuals with investment opportunities with high expected returns (Galor and Zeira, 1993; Aghion and Bolton, 1997; Galor and Moav, 2004, Beck, Demirguc-Kunt and Levine, 2007; Lopez and Serven, 2009). Gender differences in

access to financial services can therefore have direct negative repercussions not only for female entrepreneurs and individuals but for the overall economy.

This paper analyzes gender differences in access to credit by enterprises and use of formal and informal financial services by individuals in Sub-Saharan Africa. Specifically, we use enterprise surveys to assess whether female entrepreneurs in Sub-Saharan Africa are less likely to rely on formal bank finance, compared to male entrepreneurs and compared to female entrepreneurs outside Sub-Saharan Africa. We also use recent FinScope and FinAccess surveys across nine countries in Southern and East Africa to assess gender differences in the use of formal and informal financial services by individuals.

This paper relates to a growing literature on the gender gap in access to credit (see Klapper and Parker, 2010, for a survey). Cross-country studies have shown that women are less likely to get financing from a formal financial institution or are charged higher interest rate than men (Muravyev, et al., 2007) and generally raise less formal and informal venture capital than men (Brush, et al., 2004). Bruhn (2009), on the other hand, does not find any evidence for Latin America of a gender gap in access to credit by enterprises. Richardson, Howarth and Finnegan (2004) find for Sub-Saharan Africa that women entrepreneurs are more likely than male entrepreneurs to rely on internal or informal financing. This gender gap is also reflected in higher financing obstacles reported by women. The literature has also explored the reasons behind such a gender gap. Buvinic and Berger (1990) find that female entrepreneurs struggle more with loan applications, while Lusardi and Tufano (2009) find lower overall financial literacy among women. However, behavioral differences might also be important, leading to taste rather than statistical discrimination (Beck, Behr and Madestam, 2011). Evidence from Africa shows that in many instances, only male heads of households are able to successfully receive formal credit (Johnson, 2004).

Among institutional factors explaining gender differences in access to credit might be property right restrictions for women. Such restrictions might include requirements for married women to obtain their husband's signature and approval for all banking transactions.[1] Women can also be affected by a husband's adverse credit history, which might require his wife to repay the debt or be denied credit (Naidoo and Hilton, 2006).

The observation of a gender gap has led many NGO supported microcredit institutions to focus on women rather than men. Given the limitations of microcredit, both in volume and in outreach, however, it is important to understand differences in the use of formal banking services (Honohan, 2004). In addition to formal financial services, many individuals and enterprises across the developing world use informal financial services, ranging from money lenders to ROSCAS. In our empirical work, we will therefore also consider the use of informal financial services by households.

The empirical findings of the enterprise analyses show that firms with female ownership participation do not seem to have worse access to credit than firms with purely male ownership, neither within Sub-Saharan Africa nor across the world. However, we do find that African enterprises are more financially constrained and that larger firms have more access to financial services. We argue that the apparently surprising results of lack of gender difference in access to finance can be actually explained by the existence of a selection process. First, female entrepreneurs are less likely to own sole proprietorships than men and face higher regulatory burden than men, especially in Africa. Second, enterprises with female ownership are smaller and therefore have less access to the financial markets, and women are less likely to be entrepreneurs. Third, female owned enterprises are more likely to innovate what could be explained by the fact that female entrepreneurs need to be especially capable in order to be able to enter the formal sector and in fact have characteristics that make them

[1] See Women, Business and the Law; "Improving the Legal Investment Climate for Women in Africa" (Hallward-Driemeier, 2011`) for more detailed information and broader coverage of countries in Sub-Saharan Africa.

more attractive for financial institutions. Finally, we find some limited support for the hypothesis of a "sectoral selection" as female ownership tend to be more prevalent in sectors that, on average across countries, tend to rely less on access to external finance. This is consistent with Gajigo and Hallward-Driemeier (2010) who find suggestive evidence, in four African countries, that there is a gender gap in capital at the start up. Although start-up capital gender difference is higher along sector than by gender, the median capital for male entrepreneurs is more than twice that of the female entrepreneurs. These selection biases might explain that once we focus on a sample of existing enterprises and control for firm size, sector and other firm characteristics we do not find any significant effect of female ownership participation.

The household analysis shows that while unconditional comparisons present a lower use of formal banking services by women, there is no significant gender difference once we control for other individual characteristics, including education, income, work status, geographic location, and education. While gender differences in the use of informal financial services vary across countries, women are not more or less likely to be excluded from any financial service than men, at least in our sample of nine countries. Lower income and education, a lower likelihood to be formally employed and their role within the household explain why, *prima facie*, women are less likely to use formal financial services. These barriers that women face as individuals to access formal financial services might also explain the selection bias among female entrepreneurs mentioned above, though we cannot formally test for it. On the other hand, we find that women in several countries are more likely to use informal financial services.

Our paper contributes to the literature on access to finance along several dimensions. First, while most studies so far have been limited to one country, this is a cross-country exploration of gender differences in access to and use of financial services, both across

enterprises and households.[2] Second, this paper considers access to and use of all financial services, not just credit as done in large parts of the literature. In addition, it also looks beyond formal financial services to informal financial services. Third, this paper contributes to the literature on gender differences in Sub-Saharan Africa. As rigorous analysis for Sub-Saharan African is often impeded by the lack of appropriate data, the data compilations used in this paper offer a unique opportunity to explore gender differences in the participation in formal and informal economies in Sub-Saharan Africa.

The remainder of this paper is organized as follows. The next section focuses on the gender gap in enterprise finance using a large cross-section of firm-level surveys. Section 3 presents results on the gender gap in the use of financial services by individuals and section 4 concludes.

2. Gender and Enterprise Access to Credit

This section assesses whether there is a gender gap in enterprises' access to and use of bank finance. Specifically, using firm-level survey data, we will assess whether businesses with female ownership participation (i) are less likely to use a formal financing channel (e.g. overdraft or loan), (ii) have a lower share of investment financed by financial institutions, and (iii) have a lower share of working capital financed by financial institutions. The section first describes the data and then turns to multivariate regressions.

2.1. Data

To explore the relationship between gender and enterprise access to credit, we use the World Bank-IFC Enterprise Surveys. The Enterprise Surveys have been conducted over the

[2] See World Bank (2007) for an overview of studies on access to finance.

past eight years in over 100 countries with a consistent survey instrument.[3] The surveys try to capture business perceptions on the most important obstacles to enterprise operation and growth, but also include detailed information on management and financing arrangements of companies. Sample sizes vary between 250 and 1,500 companies per country and data are collected using either simple random or random stratified sampling. The sample includes formal and informal enterprises of all sizes, different ownership types and across nine sectors in manufacturing, construction, services and transportation. Firms from different locations, such as capital city, major cities and small towns, are included. Our empirical work relies on data for formal enterprises from 37 African countries and 49 countries from the rest of the world covering in total 35,000 firms during 2006 to 2009 (Appendix Table A1).[4] In addition, we focus on informal mostly micro-firms for a sample of 25 African countries.

The Enterprise Surveys offer several advantages for our purpose. First, the surveys collect comparable information for several firm characteristics across all the countries. This comparability allows us to document cross-country and within-country profiles of firms that have female ownership participation. Second, the surveys collect information on financing at the firm level as well as several other relevant firm characteristics. These include the firm size and age, human capital composition of the workforce, measures of technology adoption and firms' international openness, i.e. export activity and sources of capital. In addition, there is also detailed information on the firm's geographical location and its sector of activity (3-digit-ISIC classification). Third, the surveys reach a substantial number of countries across all

[3] See www.enterpriseseurveys.org for more details. Similar surveys were previously conducted under the leadership of the World Bank and other IFIs in Africa (RPED), and world-wide in 2000 (World Business Environment Survey). Enterprise Surveys still go under different names in some regions, e.g. BEEPS in the Central Asia and Eastern European transition economies had first been launched in 1999 and was then modified to be comparable with the broader global initiative.

[4] We lose 25 countries when using the share of working capital financed with external finance, mostly in Eastern and Central Europe and East Asia. There are a total of 95 surveys but some countries enter the dataset in multiple years. Information collected is standardized across countries and covers formal establishments with 5 or more employees. However, Africa, East Europe and Central Asia, and Latin America include establishments with fewer than 5 employees. In Africa, there are an additional 25 standardized surveys covering micro-firms and targeting informal establishments.

the regions of the world. 30.4 percent of our formal sample is in Africa, 33.5 percent in Eastern and Central Europe, 32.4 percent in Latin America, and 3.7 percent in Asia. Thirty-six percent of sample firms have female ownership participation; 28 percent in Africa and 39 percent in the rest of the world.

Table 1 Panel A provides descriptive statistics of the variables used in the analysis. Thirty-six percent of firms in our sample have at least one female owner. Thirteen percent of formal firms across the sample have 5 or fewer employees, while in Africa, these represent 21 percent of the firms. In the overall sample, 30 percent of enterprises are sole proprietorships, 13 percent of firms export at least 10 percent of their sales and 10 percent have foreign owners holding at least 10 percent of capital. In terms of location, 40 percent are located in the capital or cities with populations of 1 million or more. The average age of firms is 16 years. We also find that enterprises finance, on average, 18 percent of their fixed asset investment with bank finance and 9 percent of their working capital needs with bank finance, while, on average, 55 percent of firms have a bank loan or overdraft facility.

Table 1 Panel B shows the sample distribution by gender and type of company. If we focus on formal companies we confirm that in Africa only 28 percent of companies have female ownership participation, while the percentage in the entire sample (including Africa) is 36 percent. The percentage of informal companies with female ownership participation in Africa is 33 percent.[5] Finally, when focusing on formal sole proprietorships (often micro and small ones) the difference in prevalence of female ownership participation between Africa and the entire sample is only three percentage points (24 percent in Africa versus 27.1 percent in the entire sample). In our multivariate analysis, we will present results for the whole sample as well as for a subsample of sole proprietorships, as this allows us to isolate enterprises that are completely run by a female owner, as opposed to other firms where some

[5] We cannot compare this to the rest of the world because informal sector surveys where not performed in other regions outside Africa.

but not necessarily all of the owners are female. As Hallward-Driemeier and Aterido (2010) show, up to half of the firms that have multiple owners of which at least one is female, do not have women among their prime decisions makers. So 'female participation in ownership' defines a wider circle of firms as 'female', and thus may lead to lower bound estimates on the extent to which gender may matter. Looking at sole proprietors does address the ownership-decision maker distinction, but the average size of the firm is smaller.

2.2. Multivariate Regression Results

We start from estimating the equation below where our outcome variable of interest is measured at the level of the firm *i* in country *c* belonging to sector *s* at time *t*.

$$y_{icst} = \beta_0 + \beta_1 Fem_{icst} + \beta_2 Afr_{icst} + \beta_3 Empl_{icst} + \beta_4 Afr_{icst} * Fem_{icst} + \beta_5 Empl_{icst} * Fem_{icst} + \beta_6 Empl_{icst} * Afr_{icst} + \beta_7 Empl_{icst} * Fem_{icst} * Afr_{icst} + \psi M_{ct} + \Theta I_s + \gamma X_{icst} + \varepsilon_{icst} \quad (1)$$

where *y* is one of our three financing variables – (i) a dummy variable that takes value one if the firm has access to a formal financing channel (e.g. overdraft or loan), (ii) the share of fixed asset investment financed by financial institutions, and (iii) the share of working capital financed by financial institutions. *Fem* is a dummy variable indicating female ownership participation, *Afr* is a dummy for countries in Sub-Saharan Africa, and *Empl* is the log of the number of employees, thus an indicator of enterprise size. In addition, we include industry and time fixed effects in order to control for industry characteristics and time- specific global shocks. We also include macroeconomic characteristics such as the inflation rate, GDP per capita and average growth of GDP in previous three years. In robustness tests, we add an additional array of firm characteristics; the age of the company, a dummy variable identifying location in a large city[6], a dummy variable identifying exporters and a dummy variable

[6] Defined as capital cities or with population of one million or more.

identifying foreign ownership. Standard errors are clustered at the country-year level, thus allowing for unobserved variables driving correlation in financing across enterprises in a specific survey. All models are estimated with OLS due to the difficulty of interpreting the marginal effects of interaction terms in non-linear models (Ai and Norton, 2003). However, re-estimating the model using a Tobit or Probit model generates qualitatively similar results (these results are available upon request).

This flexible specification in regression (1) allows us to analyze several questions:

1. The coefficient β_1 indicates whether enterprises with female ownership participation are more financially constrained than other companies.
2. The coefficient β_4 indicates whether the financing situation of businesses with female ownership participation in Sub-Saharan Africa is different from that of businesses with female ownership participation in other parts of the world.
3. The coefficients $\beta_5$and β_7 indicate whether these effects are different for firms of different sizes across the world (β_5) and specifically in Africa (β_7).

Table 2 presents the results for the broad cross-country sample, while Tables 3 to 5 present results for African countries only. Given the cross-sectional nature of our results, they should not be interpreted in a causal manner as they only present conditional correlations.

The results, reported in Table 2, columns 1-4, show that, on average, there is no statistically significant difference in terms of access to finance between companies with and without female ownership participation, including in a subsample of sole proprietorships. This relationship does not vary between African and non-African countries, but it varies across firms of different size. In fact, size does not only matter for firms with female ownership participation, but it matters in general, as larger enterprises are more likely to have access to external finance. A ten percent increase in firm size translates into a 6 to 6.5 percent higher probability of accessing formal finance across all firms and 9.6 percent higher

probability for sole proprietorships. The economic effect is even bigger for firms in Africa compared to firms elsewhere, with firms in Africa facing a 46 percent lower likelihood of accessing formal finance. The size effect is larger for firms with female ownership participation and for firms in Africa as shown by positive interaction terms between the female dummy and employment and the Africa dummy and employment, respectively; however, the latter results does not hold for sole proprietorships. We do not find any differential effect of the size-Africa interaction across firms with and without female ownership participation. We also find that privately-owned firms with limited liability, older firms, companies located in larger cities, and exporting firms are more likely to access external finance, although many of these variables turn insignificant in the sub-sample of sole proprietorships.

The results in columns 5-8 of Table 2 show that, while on average there is no statistically significant difference in the share of investment financed by financial institutions between businesses with and without female ownership participation, this is not the case in Africa. In fact, the interaction between Africa and female ownership participation is positive and marginally significant. This is, at first sight surprising, however this result does not hold for a sample of sole proprietorships, suggesting that only those companies where a female is one among various owners tend to finance a larger share of their capital using bank finance, but that this is not the case for companies solely owned by a female. Similarly, we find there is no statistically significant difference in the share of working capital financed by financial institutions between businesses with and without female ownership participation (columns 9-12). There is some marginal evidence that female sole proprietorships use a higher share of working capital from financial institutions, though this is significant only at the 10 percent level (columns 11 and 12). However, one strong and robust finding is that Sub-Saharan African businesses appear to be less able to access formal financial institutions to finance

both investment and working capital, a remarkable difference between six and 14 percentage points compared to businesses in other parts of the world. Consistent with previous research (Beck, Demirguc-Kunt and Maksimovic, 2008), the results also show that larger companies have a significant advantage in terms of accessing financial institutions to finance both their investments and working capital; an increase in a firm's size by 10 percent is associated with a 17-18 percentage point increase in the share of its investment or working capital financed by financial institutions. These results, however, turn insignificant for the sample with sole proprietorship because within this sub-sample the size variation is much smaller as this type of companies tends to be characterized by a limited size. Furthermore, we show that companies located in a large city tend to finance a larger share of their investment and working capital with bank finance, potentially driven by supply of finance more available in larger cities as well as "demand" effects driven by the type of companies that locate in larger cities. The share of external finance for investment of companies located in a large city is – on average - eight percentage points larger than that of other companies, while it is just four percentage points larger when focusing on sole proprietorships. Similarly, the share of working capital financed externally for companies located in a large city is – on average - five percentage points larger for all firms, and 2.5 percentage points for sole proprietorships.

Having analyzed the results for the entire sample composed by companies in various regions, we focus on a sample of companies located in Africa. With this objective in mind we test a simpler model described by regression (2) below

$$y_{icst} = \beta_0 + \beta_1 Fem_{icst} + \beta_2 Empl_{icst} + \beta_3 Empl_{icst} * Fem_{icst} + \psi M_{ct} + \Theta I_s + \gamma X_{icst} + \varepsilon_{icst} \quad (2)$$

As before *Fem* is a dummy variable indicating female ownership participation, and *Empl* is the log of the number of employees. Similarly, as before, we include industry and time fixed effects, as well as macroeconomic control variables. In robustness tests, we add firm

characteristics, and always cluster the standard errors at the country-year level to account for autocorrelation. In addition, when focusing on African countries we are also able to separate the sample into formal versus informal enterprises. In the case of informal enterprises, however, we do not include firm size and its interaction with female, as only 2 percent (or 63 firms) of informal enterprises have more than five employees and the sample of informal enterprises presents thus very limited variation.

The results in Table 3 show the absence of a statistically significant difference in terms of accessing external finance between companies with and without female ownership participation in Africa. This result holds for both formal and informal companies, as well as for sole proprietorships. The significant positive coefficient in column 5 for informal firms turns insignificant once we control for other firm characteristics in a smaller sample. Furthermore, we confirm once again that larger companies, as well as older companies are more likely to access external finance. A ten percent increase in size translates into a 9.5 to 11 percent higher probability of accessing formal finance in the overall sample and a seven percent higher probability for sole proprietorships. The size effect is stronger for female sole proprietorships. Other firm-level characteristics do not enter consistently with a significant coefficient.

The results in Table 4 confirm that there is no statistically significant difference in terms of the share of external finance for investment between companies with and without female ownership participation. These results apply both to formal and informal companies, and are robust in the sub-sample of sole proprietorships. Additionally, as before we find that larger companies tend to be more likely to finance their investments with external resources; an increase in the size of a company by 10 percent is correlated with an increase in the use of external finance for investments by more than 20 percentage points and more than 13 percentage points in the case of sole proprietorships. Unlike in the case of Table 3, the size

effect does not vary across sole proprietors of different genders. None of the other firm characteristics enters significantly in Table 4.

The results presented in Table 5 confirm our previous findings that firms with female ownership participation use as much external finance for working capital as other firms in Africa, a result that is consistent across different sub-samples of formal and informal firms and of sole proprietorships. As before, we find that larger firms finance a significantly larger share of their working capital from financial institutions.

The result that companies with female ownership participation do not tend to be disadvantaged in accessing formal financing channels to cover the costs of investments, or working capital, seems at first rather surprising. One possible reason for this may be the existence of a selection bias. Such a selection bias would imply that females are discriminated against, *de facto or de jure,* when trying to establish and run a formal company in the first place, so that female entrepreneurs must be particularly capable or, in other words, must have characteristics that set them apart from male entrepreneurs owning companies with similar characteristics. Gajigo and Hallward-Driemeier (2010) find suggestive evidence in four African countries that there is gender differences in capital at the start up. Although differences are higher along sector than by gender, the median capital for male entrepreneurs is more than twice than female entrepreneurs. This is a suggestive indication that female entrepreneurs may face larger entry barriers than their male counterparts, but that once they enter, they do not face larger constraints. We assess the possibility of such a bias in four ways.

First, we analyze if indeed it is the case that African countries tend to be characterized by a degree of gender discrimination that is different from other regions. Figure 1 shows how African countries are ranked in terms of gender discrimination as measured by the *Women, Business and the Law index* with respect to other countries in the world. This index,

developed by the World Bank Group, varies between 0 and 1. It is constructed by averaging 9 dummy variables that have a value of 1 if there is gender equality in a specific area and a 0 if there is not; lower values indicate therefore more pronounced gender discrimination. The dimensions include equality in Law regarding ownership rights, inheritance, capacity before the law, rights of married men compared to married women, as well as a set of work related issues such as tax liability, industry or work hours discrimination, and within these issues, discrimination towards women who are pregnant or nursing. Figure 1 shows that the African countries have a *Women, Business and the Law index* substantially lower than that of the rest of the world, with the average index value for African countries being 0.5, while for the rest of the world it is 0.85.

Second, we evaluate to what extent females are likely to establish a formal business. For this purpose, Table 6 shows the share of female and male entrepreneurs across different legal ownership types. The share of female-owned firms is low in the case of sole proprietorships compared with other types of firms. Only 23 percent firms with female ownership participation are sole proprietorships compared to 34 percent of firms with male ownership participation. This seems to indicate that in our sample women are less likely to be entrepreneurs and more likely to be one of several owners of an enterprise.

Third, we test whether certain enterprise characteristics differ by gender ownership participation. While we cannot test for gender differences in inherent characteristics, we can test for observable differences, such as size or the tendency to innovate. We therefore estimate the following regression where the dependent variables are indicators of size, product innovation and process innovation.

$$X_{icst} = \beta_0 + \beta_1 Fem_{icst} + \beta_2 Afr_{icst} + \beta_3 Fem_{icst} * Afr_{icst} + \gamma Z_{icst} + \psi M_{ct} + \theta I_s + \\ + \varepsilon_{icst} \quad (3)$$

The results in Table 7 Panel A point to some significant differences across firms with and without female ownership participation in terms of size and tendency to innovate. The results in Columns 1-4 suggest that there are important differences between enterprises with and without female ownership participation in terms of size: all things equal, firms with female ownership participation tend to be significantly smaller, a result that holds both for the overall sample and the sub-sample of sole proprietorships.[7] Having female ownership participation reduces the number of employees, on average, between 8 and 14 percent. Having found that size is a key factor positively correlated to access to finance, this may explain how, by being small, enterprises with female ownership participation tend to be less likely to access finance, while at the same time, we do not find any statistically significant difference between businesses with and without female ownership participation once we control for size. Interestingly, African firms are, on average, not smaller, while sole proprietorships are smaller in Africa. The interaction of the African and female dummy variables is insignificant, suggesting that the smaller size of firms with female ownership participation is not more or less pronounced in Africa than in other parts of the world. In addition, the results in columns 5-12 show that enterprises with female ownership participation are significantly more likely to innovate than enterprises without female ownership participation, both with respect to product and process innovation. On average, firms with female ownership participation are three to six percent more likely to innovate than other firms. These results hold not only for the overall sample of enterprises, but also for the sub-sample of sole proprietorships, though the significance of the female dummy drops to 10 percent in the regressions of process innovation (columns 11 and 12). In addition, the interaction terms between the Africa and the female dummy variables enter negatively and significantly in the regressions for sole proprietorships, suggesting that female-owned

[7] Bruhn (2009) reports similar findings for a sample of Latin American countries.

sole proprietorships in Africa are not more likely to innovate than male sole proprietorships in Africa. We also find that, on average, firms in Africa are significantly less likely to innovate. It is important to interpret these findings with caution, though, as the sample for which we have information available on innovation is significantly smaller than our overall sample, both in terms of countries (31) and in the number of firms within these countries.

Finally, we test whether female entrepreneurs are more likely to be active in sectors with lower needs for external finance. Since the regressions in Tables 2 – 5 focus on intra-industry variation (as they include industry fixed effects), they are not able to pick up such a selection bias. We therefore run the following regression

$$Fem_{icst} = \beta Finance_s + \psi M_c + \varepsilon_{icst} \quad (4)$$

where – as above - *Fem* is a dummy variable indicating female ownership participation and Finance is the average of all firms in sector s across all sample countries: (i) a dummy variable that takes value one if the firm has access to a formal financing channel (e.g. overdraft or loan), (ii) the share of fixed asset investment financed by financial institutions, and (iii) the share of working capital financed by financial institutions. By using averages across countries, we are able to control for reverse causation to a certain extent. The coefficient β thus indicates whether enterprises with female ownership participation are more or less likely to operate in sectors that – on average – use more external finance. By including country fixed effects, we control for country differences in access to external finance.

The results in Table 7 Panel B indicate that firms with female ownership participation are indeed less likely to operate in sectors where a higher share of firms uses a loan or overdraft facility. This finding holds both across the complete sample and the subsample of sole proprietorships. On the other hand, firms with female ownership participation are not less likely to operate in sectors that use a higher share of external finance for investment or working capital.

We interpret the results of Tables 6 and 7 as, on the one hand, partially supporting our hypothesis of a selection bias among female entrepreneurs who have to be more capable than their male counterparts in order to be part of the formal enterprise universe. On the other hand, these results might point towards the fact that a key channel that may explain the apparent discrimination between businesses with and without female ownership participation could be size, with businesses with female ownership participation more likely to be smaller and therefore for this reason less likely to access formal external finance. Furthermore, firms with female ownership participation are more likely to operate in sectors where firms – on average across countries – are less likely to have a loan, which might point to demand side constraints.

Concluding, this section shows that while African companies are less likely to access formal financial institutions to finance their investments and working capital needs, enterprises with female ownership participation do not appear more financially constrained than firms without female ownership participation. However, we find that while companies in Africa tend to have substantially more limited access to external finance, larger businesses have systematically better access to external finance, and companies with female ownership participation tend to be smaller than their counterparts owned purely by males. In addition, we find some support towards the fact that this lack of difference in terms of accessing finance could be partially explained by the fact that the female entrepreneurs appear to be a "selected sample" with characteristics that may explain our findings. To start with, females tend to be less likely to be owners of a formal company, and once they are able to break this "glass ceiling" it is because female entrepreneurs appear to be significantly more likely to innovate both in terms of product and process.

3. Gender and Household Access to Financial Services

This section explores gender differences in the use of different financial services by individuals. Unlike in the previous section, we therefore focus more on savings and payments than credit services. We consider both formal and informal financial services. This section first discusses the data and simple comparisons in the use of financial services by men and women, before turning to multivariate regressions.

3.1. Data and Ocular Econometrics

To explore the relationship between gender and use of financial services, we use 11 household surveys across 9 Sub-Saharan African countries, co-branded as FinScope or FinAccess surveys. Specifically, we have data for Botswana, Kenya, Malawi, Namibia, Rwanda, South Africa, Tanzania, Uganda and Zambia. These surveys, first undertaken in South Africa in 2002, are surveys with up to 7,600 observations and sampled with cluster stratified probability. They are based on individuals rather than households. While this might reduce the accuracy in terms of financial services that the individual has indirect access to through other household members and might reduce the representativeness, it has the advantage that we can focus specifically on the gender gap (Cull and Scott, 2010). For this study, we have a total of 11 surveys available, with Kenya and Tanzania having undertaken surveys twice. While South Africa has undertaken yearly surveys, we only include the one from 2008. All surveys used in this section were undertaken between 2004 and 2009.

The FinScope surveys distinguish between four different population segments – (i) users of formal banking services, (ii) users of other formal services, such as insurance companies, mobile phone services and regulated MFIs, (iii) users informal financial services, including unregulated SACCOs, ASCAs and ROSCAs, and (iv) individuals excluded from any service. There are two ways to explore this differentiation; first, considering each strand

separately, i.e. users of formal banking, other formal and informal financial services and, second, considering the most formal strand. In the latter case, one takes into account that many users of formal financial services also use informal financial services and so focuses on the most formal form of financial service. In the following, we will follow the first approach, focusing on (i) users of formal banking services, (ii) users of informal financial services (who could also use formal banking services) and (iii) individuals excluded from formal and informal services.

Figure 2 shows that, on average, women are less likely to use formal financial services than men, while gender differences in the use of informal financial services vary across countries. Here, we graph the share of surveyed in each country that (i) uses formal banking services, (ii) uses informal services, and (iii) is excluded from any financial service, separately for men and women. All observations are weighted according to their representativeness.

Panel A shows that women are less likely to use formal banking services across all 11 surveys, although the gender differences vary across countries. In Botswana (2004), the gender gap is less than two percent and not significant, whereas in Kenya (2009), the gender gap is 11 percent, with 32 percent of men using formal banking services, but only 21 percent of women. The Panel A graphs also show the large cross-country variation in use of formal banking services, documented elsewhere, with almost 70 percent of surveyed in South Africa using formal banking services, while only 17 percent using formal banking services in Zambia (2005).

The Panel B graphs show that the gender gap in the use of informal financial services varies across countries. In Kenya (2006 and 2009), South Africa (2008) and Tanzania (2006 and 2009), women are more likely to use informal financial services than men, while the reverse holds in Namibia and Rwanda. The graphs also show the wide-spread variation in the

use of informal services across the nine sample countries, ranging from 50 percent in Kenya to only 1 percent in Namibia.

The Panel C graphs show that women are either as likely or more likely to be excluded from any financial service as men. Specifically, in Malawi, Namibia, Rwanda, Tanzania (2006), Uganda and Zambia, they are more likely to be excluded from any financial service, while in the other countries there is no significant difference between men and women. These graphs also indicate the high degree of financial exclusion across Southern and Eastern Africa, ranging from 80 percent in Zambia to 19 percent in South Africa.

These findings are consistent with the hypothesis of a gender gap in the use of formal banking services. However, they do not control for other individual characteristics. Next, we will therefore turn to multi-variate regressions to explore whether this unconditional differences still hold once we control for other factors that can explain the use of formal and informal financial services.

3.2. Multiavariate Results

We next turn to multivariate regression analysis to explore whether the gender differences in the use of financial services hold when we control for other characteristics of individuals and households. Specifically, we use probit regressions of the following form:

$$y_i = \beta_0 + \beta_1 Fem_i + \gamma X_i + \varepsilon_i \quad (5)$$

where *y* is access to financial services measured by the use of (i) formal banking services and (ii) informal financial services. In addition, we use (iii) a dummy variable that indicates whether a person is financially excluded, i.e. uses neither formal nor informal financial services. The regression is weighted and stratified on the rural-urban level. The coefficient of interest is β, which indicates whether women are more or less likely to use financial services. We run these regressions both survey-by-survey as well as a pooled version with

all available surveys and dummy variables for each survey. While the results from the pooled regressions gives us an indication of the average effect across surveys, they do not allow for slope differences across countries. In addition to using country-specific weights, we weight by the inverse of the respective population in each country in the case of the pooled regression.

We include a wide array of other individual characteristics that might explain variation in the use of financial services (see Table 8). Appendix Table A2 presents the descriptive statistics for all characteristics, for each country. First, we control for geographic location by including a dummy variable *Rural* indicating whether the individual lives in a rural district. Geographic barriers such as larger distance to the nearest bank office would suggest a negative relationship between *Rural* and use of formal financial services, while the use of informal financial services might not necessarily vary across different geographic areas. We control for the education level of individuals, by including dummy variables that indicate whether the individual has (i) no education or less than primary, (ii) primary completed, (iii) secondary level completed, and (iv) at least an undergraduate college degree. We expect individuals with higher levels of education to be more likely to use formal and informal financial services. We also include the *Age* of the individuals, in logs. While there might be a positive relationship between the age of individuals and the use of financial services, this relationship might be non-linear and turn negative at higher ages when individuals leave the labor market. We also include an income measure where available. With the exception of Kenya 2006 (no income), Kenya 2009 (individual expenses), and Uganda (household income), we include the log of individual monthly income.[8] We expect higher-income individuals to be more likely to be able to afford formal financial services, while the relationship of income with the use of informal financial services is not clear *a-*

[8] In the case of the pooled regression, we convert all income measures into USD, using average-year exchange rates.

priori. Finally, we include dummy variables indicating what the main income source of the individual is. Specifically, *Employed, Self-employed* and *Agriculture* are dummy variables indicating the employment status and sector, with the omitted category being dependent on pension or family. We also control for the ownership of a mobile phone, which might indicate stronger commercial needs and therefore demand for financial services. It might also indicate, however, openness to new technologies and therefore bank delivery channels.

We control for the personal circumstances of the individual by including dummy variables for being married**,** whether the survey respondent is head of household and – where available – whether the respondent is the main earner and decision taker. All four factors might increase the probability of using financial services, be they formal or informal, as being married and/or being head of household imply stronger economic responsibilities. Where available, we also include a variable indicating risk aversion, which is a positive response to the question: "do you disagree that to get ahead on life one need to take some risks?". We also include an indicator of numeracy, which measures the extent to which the respondent can solve simple calculus problems. We again expect respondents that score higher on numeracy are more likely to use financial services.

The results in Table 9 show that - on average – women are not significantly more or less likely to use formal financial services. We report first the pooled regression with survey dummies and then 11 survey-specific regressions. The pooled regression includes only variables that are available for all surveys. The regression in column 1 of Table 9 shows an insignificant coefficient on the female dummy. This is confirmed by considering the country-level regressions. Only in the 2008 survey for South Africa does the female dummy enter significantly and negatively, suggesting that females have a 12.2 percent lower probability of using formal financial services. Unlike in the univariate comparisons of Figure 2, we

therefore cannot find a gender gap in the use of formal banking services, once we control for other individual characteristics.

The use of formal banking services is correlated with an array of other individual factors. Individuals with higher income are more likely to use formal banking services, as are users of mobile phones. Even controlling for the fact that users of mobile phones have, on average, higher incomes, they are, on average across our sample countries, 32.1 percent more likely to use formal banking services. Formally employed individuals are more likely to use formal banking services, while there is no consistent relationship across countries in the case of self-employed and individuals working in agriculture. Perhaps surprisingly, rural individuals are less likely to use formal banking services only in Kenya, Malawi, South Africa, and Tanzania (2006), while there does not seem to be any urban-rural gap in the other countries, with rural inhabitants even more likely to use formal banking services in Botswana. Education is a strong predictor of the use of banking services, with the use increasing linearly in most countries – with the notable exception of South Africa -, from individuals with primary education to individuals with secondary education to individuals with tertiary education. Older individuals are more likely to use formal banking services in almost all countries. We find that married individuals are more likely to use formal banking services in Botswana and Namibia. With respect to the household status of individuals, we find that being the household head does not increase the probability of using formal banking services, except in Uganda. Risk aversion is not significantly correlated with the use of banking services except for Botswana where it is negatively correlated, while numeracy is positively associated with the use of formal banking services in most but not all countries; these two variables, however, are not available for all countries.

The survey dummies in the pooled regression provide evidence for the cross-country variation in the use of financial services beyond differences in population composition. We

find that relative to South Africa – the omitted country – all countries except for Namibia have lower levels of financial service use. The differences range from 41 percent in Zambia to 20 percent in Botswana. Individuals in Namibia are as likely to use formal banking services as individuals in South Africa.

The results in Table 10 show that – on average across the 11 surveys – women are more likely to use informal financial services. The effect is also economically large, with women being 3.7 percent more likely to use informal financial services than men. Looking behind the average effect across countries, we find that this is driven by Botswana and the East African countries in our sample, with the effect being especially strong in Kenya (14.7 percent in 2006 and 16.3 percent in 2009). On the other hand, there is no gender difference in the use of informal financial services in Malawi, Namibia, South Africa, and Zambia.

Many of the individual characteristics that explain the use of formal banking services also explain the use of informal financial services. The relationship between income and the use of informal financial services is positive in some but not all countries. In some countries owners of mobile phones are more likely to use informal financial services while in others it does not make a difference or they are less likely (Rwanda and Zambia). Maybe surprisingly, compared to individuals dependent on transfers, employed individuals are more likely to use informal finance in Botswana, Kenya, and Zambia as are self-employed in Kenya and Tanzania (2006), while individuals working in agriculture are only more likely to use informal financial services in Kenya. Rural people in Malawi, South Africa and Tanzania (2006) are more likely to use informal finance, while they are less likely to do so in Tanzania (2009). The relationship between education and the use of informal financial services is not consistent across countries. While in Botswana, Kenya, and Tanzania (2009), individuals with primary education are more likely to use informal financial services than individuals without any formal education, individuals with secondary or tertiary education are not more

likely to do so except for Botswana (and Uganda in the case of tertiary education). Older people are more likely to use informal finance only in Botswana, while they are less likely to do so in Rwanda and Tanzania (2009). Married individuals are more likely to use informal financial services in most, though not all, countries, with the exception of South Africa where they are less likely to do so. If individuals are the main earner in the household, they are more likely to use informal financial services in Tanzania (2009), but less likely in Malawi and Tanzania (2006). The main decision maker is more likely to use informal financial services only in Kenya (2009). There is no significant relationship between risk aversion and the likelihood of using informal financial services, while higher numeracy is positively associated with the use of informal financial services in Botswana, Malawi, and Tanzania (2006) and negatively in Uganda. The survey dummies in the pooled regression suggest that individuals in most countries are more likely to use to informal financial services than individuals in South Africa, while individuals in Namibia are less likely to do so and there is no significant difference in Zambia.

Table 11 shows that, on average, women are less likely to be excluded from financial services, with significant cross-country variation behind the result from the pooled regression. Specifically, women in Botswana, Kenya, Tanzania, and Uganda, are less likely to be excluded from financial services (note that women in these same countries are more likely to use informal financial services), while women in Rwanda and South Africa are more likely to be excluded, although this relationship is significant only on the 10 percent level. There is no significant gender gap in financial exclusion in the other countries.

The other individual characteristics that are significantly correlated with the use of formal and informal financial services are also significantly correlated with the likelihood of being excluded, though with the opposite sign. Higher income individuals are less likely to be excluded, and controlling for this income effect, owners of mobile phones are less likely to be

excluded. Self-employed are less likely to be excluded in Kenya, Namibia, Rwanda and Tanzania (2006), while agricultural workers are more likely to be excluded in Botswana and less likely in Kenya and Malawi. Individuals living in rural areas face a lower probability of exclusion in Malawi, while a higher probability in Tanzania (2009), with no geographic gap in other countries. Education is an important predictor of the likelihood of not being excluded, with the relationship between the likelihood of exclusion and educational attainment decreasing in a linear measure in all countries, except for South Africa. Older individuals are less likely to be excluded in many though not all countries, as are formally employed individuals. Married individuals are less likely to be excluded in most countries, while heads of household are no more or less likely to be excluded, with the exception of Kenya (2006) and Uganda, where the relationship is negative, and Malawi where the relationship is positive. Numeracy is negatively associated with the likelihood of exclusion in many though not all countries, while there seems to be an inconsistent relationship with risk aversion, negative in South Africa and positive in Zambia. The survey dummies in the pooled regression suggest that with the exception of Kenya (2006), where there is no significant difference, the probability of exclusion is higher in all countries compared to South Africa.

Table 12 explores why the significant variation in the use of formal financial services between men and women, shown in Figure 2, turns insignificant once we control for other individual characteristics. Here we present the differences in individual characteristics between men and women for each survey and the economic effect this has on the different use of formal banking services by men and women. Specifically, for the pooled regression and each individual survey regression of Table 9, we multiply the coefficient estimate on each explanatory variable with the sample difference between male and female individuals. The biggest effect seems to come from income differences between male and female

individuals, explaining between 0.9 percentage points in Uganda and 4.5 percentage points in Tanzania (2006). Another big effect stems from the lower level of education of women, which can explain why women are less likely to use formal banking services. Adding the economic effect of lower education across primary, secondary and tertiary education levels in the pooled regression, we find a total effect of 4.5 percentage points. Another large effect comes from women being less likely to be the household head, accounting for a 3.2 percentage point difference in the pooled regression. The employment status is another important factor explaining gender differences in the use of formal banking services. Women are less likely to be formally employed than men, with the economic effect being 3.1 percentage points in the pooled regression. Finally, the ownership of mobile phones seems a significant factor in explaining the univariate gender gap in use of formal banking services, adding another two percentage points.

Overall, the results in Table 12 suggest that the fact that women have lower income, are less formally educated, are less likely to be head of household and are less likely to be formally employed across the countries in our sample explains why they are less likely to use formal banking services. This suggests that it is not discrimination in the banking system or lower inherent demand by women that drives their lower use of banking services, but rather disadvantages in other areas. However, these results also suggest that some of the findings might be driven by the survey methodology of interviewing individuals rather than households; women might have indirect access to formal financial services through their formally employed husbands who function as household heads.

In sensitivity tests not shown[9], we also explored whether the relationship between education, income, household head and married, on the one hand, and the use of financial services, on the other hand, varied between men and women. Few of the interaction terms,

[9] Results available upon request

however, enter significantly, and mostly with differing signs across surveys. Overall, there seems little evidence that education and marital status are differently related with use of financial services across genders. We also differentiated according to the financial service individuals are or are not using – credit, savings, insurance and transaction services. Here we follow the definition by Porteous (2007) that captures both formal and semi-formal financial service providers. We find that females in Malawi and Tanzania (2006) are more likely to use transaction services, while there is no significant difference at the 5 percent level in other countries. Females in Botswana, Kenya and Zambia are more likely to use savings services, while they are less likely to use them in Rwanda. There are no significant gender differences in credit and insurance services[10].

4. Conclusions

This paper assesses gender differences in the use of financial services by enterprises and households in Sub-Saharan Africa. We find little if any evidence for a gender gap, either for enterprises or households. Enterprises with female ownership participation in Sub-Saharan Africa use as much external financing as enterprises without female ownership participation and female individuals are as likely to use formal financial services as male individuals, once we control for an array of other characteristics. While this might seem surprising, our results suggest that one has to look beyond simple gender comparisons and explore the reasons why we find a lower financial market participation of women. In the case of enterprises, there is evidence of selection bias, i.e., female entrepreneurs have to overcome higher barriers in the first place, as evidenced by their higher tendency to innovate and higher legal burden in African countries compared to their male peers. Further, firms with female ownership participation tend to be of smaller size, and smaller firms have, on average, less

[10] Results available upon request.

access to external finance. Additionally, we find some limited evidence that females owned business tend to enter more likely sectors that, on average, are characterized by more limited use of external finance (i.e. average number of companies with bank accounts). In the case of individuals, univariate comparisons show a lower formal financial sector participation rate of females as they score lower on many other dimensions related to the use of financial services, including income, education and formal employment, but also personal life factors such as not being head of household. These barriers that women face as individuals to access formal financial services might also explain the selection bias among female entrepreneurs that we found in the first part of the paper.

Are women disadvantaged in access to financial services? Yes, but the reasons are not within the financial sector, they lie in other dimensions related to female participation in the modern market economy. Policies to expand access to financial services by women have to address these other dimensions if women are to reap the benefit of financial services as much as men.

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Table 1. Panel A. Summary Statistics Enterprise Surveys

Variable	Variable description	n. obs.	share	st.dev.	min	max
Female	At least 1 principal owner is female	35,135	0.36	0.48	0	1
Africa	Firm is in an Africa country	35,135	0.30	0.46	0	1
Micro	1-5 employees	35,135	0.13	0.33	0	1
Small	6-10 employees	35,135	0.23	0.42	0	1
Medium	11-49 employees	35,135	0.38	0.49	0	1
Large	50 or more employees	35,135	0.27	0.44	0	1
public	Government ownership	35,135	0.05	0.22	0	1
private, limited	Private, limited ownership	35,135	0.55	0.50	0	1
sole proprietor	Sole proprietor	35,135	0.30	0.46	0	1
partnership	Partnership ownership	35,135	0.07	0.26	0	1
other	Other ownership	35,135	0.02	0.14	0	1
Fin_Formal	1 if overdraft or checking/saving account or creditline or loan	35,135	0.55	0.50	0	1
Fin_inv	% New investments paid w/ (priv or gvmt) banks or fin.inst.	18,807	17.54	33.04	0	100
Fin_wkcap	% Working capital paid w/ (priv or gvmt) banks or fin.inst.	24,791	9.18	21.36	0	100
logEmployment	Number of permanent workers -log	35,135	3.13	1.38	0	9.94
Innov_prod	Firm improved products in last 3yrs	9,375	0.61	0.49	0	1
Innov_proc	Firm improved production process in last 3yrs	9,385	0.57	0.49	0	1
lgCity	Firm is in the capital or city w/ population of 1Mn or more	35,135	0.40	0.49	0	1
Age	Age of firm -log	34,827	2.46	0.85	0	5.74
Exporter	Firm exports directly at least 10% of total sales	35,086	0.13	0.34	0	1
Foreign	at least 10% of firm is owned by foreign private sector	35,032	0.10	0.31	0	1
Index Women-Business&Law[1]	1=equality; 0=no equality;	79	0.71	0.26	0.13	1

[1] average: property, inheritance, law, work all industries; same night hrs; married women; tax liability; pregnant, nursing women

Table 1.Panel B. Distibution of Companies with some Female Ownership

	All Countries			Africa		
	Male	Female	Total	Male	Female	**Total**
Sole Proprietors						
n. obs	7,714	2,861	**10,575**	4,648	1,447	**6,095**
%	72.95	27.05	**100**	76	24	**100**
Formal						
n. obs	22,602	12,533	**35,135**	7,724	2,984	**10,708**
%	64.33	35.67	**100**	72	28	**100**
Informal						
n. obs				1,388	678	**2,066**
%				67.18	32.82	**100**
Total						
n. obs	**22,602**	**12,533**	**35,135**	**9,112**	**3,662**	**12,774**
%	**64.33**	**35.67**	**100**	**71.33**	**28.67**	**100**

Table 2: Explaining Share of Investment and Working Capital Financed by External Financial Institution (Formal Companies)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Access to formal Finance				Share Investment Financed Externally				Share Work. capital Financed Externally			
	Formal		Sole Proprietor		Formal		Sole Proprietor		Formal		Sole Proprietor	
Female	-0.026	-0.028	-0.091	-0.086	-0.928	-0.706	-1.373	-1.502	1.833	1.653	5.982	6.082
	[0.033]	[0.032]	[0.055]	[0.053]	[1.959]	[1.827]	[4.562]	[4.437]	[1.232]	[1.198]	[3.342]*	[3.309]*
Africa	-0.464	-0.456	-0.306	-0.293	-13.183	-14.533	-13.950	-13.636	-7.342	-7.572	-6.942	-6.467
	[0.054]***	[0.054]***	[0.051]***	[0.051]***	[3.293]***	[3.148]***	[3.607]***	[3.588]***	[2.882]**	[2.611]***	[2.352]***	[2.339]***
Employment	0.065	0.060	0.096	0.096	1.705	1.796	1.282	1.303	1.882	1.774	1.239	1.432
	[0.007]***	[0.006]***	[0.020]***	[0.018]***	[0.357]***	[0.403]***	[1.104]	[1.090]	[0.471]***	[0.470]***	[1.210]	[1.183]
Female*Africa	0.074	0.076	0.066	0.067	4.761	4.777	-0.104	0.823	-0.407	-0.283	-4.638	-4.563
	[0.045]	[0.043]*	[0.061]	[0.060]	[2.562]*	[2.424]*	[5.572]	[5.390]	[1.594]	[1.524]	[3.500]	[3.503]
Female*Employment	0.013	0.012	0.032	0.029	0.299	0.252	-0.142	-0.125	-0.404	-0.372	-2.429	-2.506
	[0.005]**	[0.005]**	[0.016]**	[0.016]*	[0.445]	[0.413]	[1.542]	[1.502]	[0.436]	[0.399]	[1.337]*	[1.308]*
Afr*Employment	0.067	0.061	-0.015	-0.021	1.155	1.033	-0.021	-0.425	-0.383	-0.628	-0.374	-0.757
	[0.017]***	[0.016]***	[0.027]	[0.024]	[1.432]	[1.496]	[1.255]	[1.205]	[0.861]	[0.844]	[1.190]	[1.163]
Female*Africa*Employment	-0.009	-0.009	-0.010	-0.010	-0.508	-0.653	1.198	0.810	0.084	0.005	1.888	1.849
	[0.015]	[0.015]	[0.020]	[0.021]	[0.926]	[0.912]	[2.188]	[2.128]	[0.602]	[0.565]	[1.414]	[1.405]
private-limited	0.093	0.095			6.096	5.555			1.701	1.698		
	[0.020]***	[0.021]***			[1.944]***	[1.778]***			[1.294]	[1.174]		
sole-proprietors	-0.029	-0.026			3.032	2.864			-1.244	-0.974		
	[0.029]	[0.029]			[1.820]	[1.706]*			[1.455]	[1.348]		
partnership	0.020	0.024			4.979	4.605			-0.280	-0.056		
	[0.023]	[0.021]			[2.394]**	[2.095]**			[1.442]	[1.335]		
legal-status_other	0.008	0.008			9.454	9.495			5.265	5.155		
	[0.036]	[0.035]			[3.706]**	[3.690]**			[1.772]***	[1.847]***		
age		0.024		0.020		-0.118		1.167		0.538		0.398
		[0.007]***		[0.007]***		[0.384]		[0.572]**		[0.305]*		[0.316]
lgcity		0.056		0.043		8.348		4.227		5.349		2.458
		[0.027]**		[0.026]		[2.511]***		[1.908]**		[1.466]***		[1.195]**
exporter		0.070		0.031		2.623		-0.330		2.761		-0.606
		[0.029]**		[0.029]		[1.649]		[1.632]		[1.359]**		[1.217]
foreign		-0.036		-0.047		-4.026		1.804		-2.362		-1.097
		[0.020]*		[0.049]		[1.332]***		[2.736]		[0.874]***		[1.190]
industry fe	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
country controls[1]	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Constant	0.452	0.361	0.340	0.263	11.665	6.414	16.705	12.315	16.682	11.994	13.848	11.512
	[0.085]***	[0.089]***	[0.066]***	[0.075]***	[4.153]***	[3.703]*	[4.416]***	[4.252]***	[3.926]***	[3.579]***	[3.200]***	[3.188]***
Observations	35135	34684	10575	10505	18807	18604	4469	4446	24791	24615	9242	9203
R-squared	0.24	0.26	0.25	0.26	0.05	0.06	0.08	0.09	0.09	0.11	0.08	0.09

* significant at 10%; ** significant at 5%; *** significant at 1%

Notes: cols 1-4 dprobit; cols 5-12 OLS; omitted category public; se clustered at the country level

[1] controls include GDP per capita, GDP growth previous 3 years and inflation

Table 3: Explaining Access to Formal Financing (Africa Only)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Formal Firms				Informal			
	All Formal		Sole Proprietor		All Informal		Sole Proprietor	
Female	0.034	0.032	-0.028	-0.024	0.041	0.007	0.030	-0.003
	[0.030]	[0.028]	[0.022]	[0.023]	[0.018]**	[0.016]	[0.017]	[0.026]
Employment	0.110	0.095	0.073	0.067				
	[0.015]***	[0.015]***	[0.017]***	[0.015]***				
Fem*Employment	0.005	0.005	0.022	0.020				
	[0.012]	[0.011]	[0.010]**	[0.011]*				
private-limited	0.031	0.035			0.192			
	[0.041]	[0.044]			[0.038]***			
sole-proprietors	-0.109	-0.102			0.153	-0.112		
	[0.054]*	[0.055]*			[0.030]***	[0.066]		
partnership	-0.039	-0.030			0.214	-0.028		
	[0.045]	[0.043]			[0.028]***	[0.058]		
legal-status_other	-0.026	-0.020						
	[0.113]	[0.108]						
age		0.028		0.021		0.036		0.030
		[0.004]***		[0.006]***		[0.007]***		[0.012]*
lgcity		0.017		0.014		-0.073		-0.058
		[0.023]		[0.023]		[0.027]*		[0.022]*
exporter		0.129		0.069		0.166		-0.066
		[0.023]***		[0.032]**		[0.087]		[0.067]
foreign		-0.030		0.002		-0.105		-0.030
		[0.026]		[0.023]		[0.056]		[0.057]
industry fe	yes	yes	yes	yes	yes	yes	yes	yes
country controls[1]	yes	yes	yes	yes	yes	yes	yes	yes
Constant	0.061	-0.008	0.052	0.006	-0.011	0.073	0.109	0.085
	[0.103]	[0.096]	[0.116]	[0.119]	[0.088]	[0.189]	[0.083]	[0.148]
Observations	10708	10670	6095	6081	1962	604	1575	483
R-squared	0.25	0.26	0.11	0.11	0.03	0.07	0.02	0.05

Robust standard errors in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Notes: se clustered at the country level

Table 4: Explaining Share of Investment Financed by External Financial Institutions (Africa Only)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Formal				Informal			
	All formal		Sole Proprietor		All Informal		Sole Proprietor	
Female	3.045	2.785	-0.866	-0.665	-0.555	-2.806	-1.345	-2.040
	[1.742]*	[1.699]	[3.328]	[3.189]	[1.852]	[2.420]	[1.448]	[1.455]
Employment	2.347	2.022	1.373	1.319				
	[0.867]**	[0.844]**	[0.566]**	[0.578]**				
Fem*Employment	-0.187	-0.087	0.896	0.789				
	[0.818]	[0.802]	[1.581]	[1.514]				
private-limited	1.238	1.214			14.987	5.173		
	[3.954]	[4.125]			[8.245]*	[5.477]		
sole-proprietors	-4.637	-4.338			5.730	-5.861		
	[4.320]	[4.462]			[4.476]	[2.833]		
partnership	-2.223	-2.061			9.727			
	[3.651]	[3.818]			[4.463]**			
legal-status_other	-7.730	-7.020						
	[4.666]	[4.794]						
age		-0.363		0.010		2.809		1.824
		[0.534]		[0.620]		[1.198]*		[0.927]
lgcity		-0.085		1.829		-10.564		-0.241
		[1.969]		[1.596]		[3.233]**		[1.975]
exporter		4.147		-2.281		-3.249		-0.486
		[2.799]		[1.858]		[2.650]		[0.817]
foreign		1.225		3.706		3.280		-1.952
		[2.201]		[2.970]		[5.958]		[1.587]
industry fe	yes	yes	yes	yes	yes	yes	yes	yes
country controls[1]	yes	yes	yes	yes	yes	yes	yes	yes
Constant	9.715	9.758	7.128	6.276	-7.171	32.481	1.175	8.959
	[9.021]	[9.237]	[8.752]	[8.516]	[4.532]	[11.654]**	[0.845]	[3.714]*
Observations	4749	4733	2426	2421	604	211	484	173
R-squared	0.07	0.07	0.03	0.04	0.04	0.23	0.04	0.09

Robust standard errors in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Notes: se clustered at the country level

[1] controls include GDP per capita, GDP growth previous 3 years and inflation

Table 5: Explaining Share of Working Capital Financed by External Financial Institutions (Africa Only)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Formal				Informal			
	All formal		Sole Proprietor		All Informal		Sole Proprietor	
Female	1.503	1.423	1.221	1.272	1.185	0.800	0.560	-0.115
	[0.976]	[0.947]	[0.884]	[0.921]	[0.982]	[1.451]	[0.854]	[0.383]
Employment	1.442	1.267	1.049	1.023				
	[0.510]***	[0.467]**	[0.339]***	[0.318]***				
Fem*Employment	-0.295	-0.281	-0.450	-0.480				
	[0.389]	[0.385]	[0.417]	[0.440]				
private-limited	-0.075	-0.165			1.328			
	[1.932]	[2.032]			[0.902]			
sole-proprietors	-3.015	-3.090			1.684	-1.088		
	[2.070]	[2.174]			[0.621]**	[1.093]		
partnership	-2.662	-2.685			4.591	4.670		
	[1.991]	[2.071]			[1.519]***	[2.296]		
legal-status_other	-2.692	-2.693						
	[2.973]	[3.011]						
age		0.065		0.125		0.932		0.467
		[0.213]		[0.163]		[0.402]*		[0.170]*
lgcity		0.812		0.396		-3.930		-3.114
		[1.068]		[0.741]		[1.723]*		[2.263]
exporter		2.520		-0.162		0.136		0.108
		[1.044]**		[0.663]		[0.444]		[0.886]
foreign		-0.669		-0.461		-0.597		0.113
		[0.928]		[0.575]		[0.310]		[0.270]
industry fe	yes	yes	yes	yes	yes	yes	yes	yes
country controls[1]	yes	yes	yes	yes	yes	yes	yes	yes
Constant	6.799	6.373	2.612	2.270	-1.071	4.064	0.977	4.160
	[3.018]**	[3.271]*	[2.598]	[2.589]	[2.228]	[3.722]	[1.391]	[1.871]*
Observations	10696	10658	6091	6077	1953	604	1570	483
R-squared	0.06	0.06	0.03	0.03	0.02	0.24	0.02	0.14

Robust standard errors in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Notes: se clustered at the country level

[1] controls include GDP per capita, GDP growth previous 3 years and inflation

Table 6. Distribution Legal Ownership

status		Male	Female	Total
public	obs	969	887	1,856
	%	4.29	7.08	5.28
private, limited	obs	11,994	7,469	19,463
	%	53.07	59.59	55.39
sole proprietor	obs	7,714	2,861	10,575
	%	34.13	22.83	30.10
partnership	obs	1,516	1,022	2,538
	%	6.71	8.15	7.22
other	obs	409	294	703
	%	1.81	2.35	2.00
Total	**obs**	**22,602**	**12,533**	**35,135**
	%	**100**	**100**	**100**

Table 7. Panel A: Characteristics of Formal Enterprises

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Dep var	Log-Employment				Product Innovation				Process Innovation			
	All		Sole Proprietor		All		Sole Proprietor		All		Sole Proprietor	
Female	-0.083	-0.078	-0.110	-0.139	0.060	0.058	0.070	0.080	0.036	0.034	0.046	0.050
	[0.031]***	[0.038]**	[0.048]**	[0.059]**	[0.019]***	[0.018]***	[0.031]**	[0.028]***	[0.015]**	[0.016]**	[0.027]*	[0.025]*
Africa	-0.146	-0.198	-0.270	-0.371	-0.108	-0.114	-0.095	-0.088	-0.192	-0.198	-0.203	-0.206
	[0.096]	[0.109]*	[0.115]**	[0.133]***	[0.038]***	[0.042]**	[0.056]	[0.061]	[0.036]***	[0.038]***	[0.051]***	[0.051]***
Female*Africa	-0.020	-0.050	-0.007	0.008	-0.006	-0.005	-0.088	-0.094	0.015	0.017	-0.081	-0.082
	[0.049]	[0.053]	[0.075]	[0.085]	[0.032]	[0.030]	[0.041]**	[0.042]**	[0.029]	[0.028]	[0.038]**	[0.037]**
age	0.324		0.157		0.022		0.001		0.016		0.003	
	[0.022]***		[0.017]***		[0.008]**		[0.012]		[0.007]**		[0.015]	
lgcity	-0.004		0.090		0.029		0.070		0.019		0.049	
	[0.057]		[0.054]		[0.021]		[0.031]**		[0.021]		[0.031]	
exporter	0.791		1.040		0.133		0.224		0.133		0.139	
	[0.052]***		[0.106]***		[0.035]***		[0.058]***		[0.029]***		[0.039]***	
foreign	0.577		0.597		0.021		0.067		0.021		0.001	
	[0.055]***		[0.127]***		[0.022]		[0.077]		[0.020]		[0.094]	
private-limited	-0.737	-0.940			0.003	-0.019			-0.048	-0.070		
	[0.083]***	[0.093]***			[0.033]	[0.036]			[0.023]**	[0.025]***		
sole-proprietors	-1.519	-1.923			-0.130	-0.188			-0.175	-0.230		
	[0.100]***	[0.100]***			[0.042]***	[0.053]***			[0.029]***	[0.037]***		
partnership	-1.031	-1.330			-0.077	-0.125			-0.155	-0.203		
	[0.099]***	[0.104]***			[0.065]	[0.074]			[0.041]***	[0.047]***		
legal-status_other	-0.827	-1.011			-0.005	-0.022			-0.086	-0.101		
	[0.126]***	[0.144]***			[0.057]	[0.061]			[0.035]**	[0.038]**		
industry fe	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
country controls[1]	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Constant	3.244	4.561	2.000	2.578	0.501	0.644	0.522	0.584	0.579	0.696	0.578	0.628
	[0.144]***	[0.144]***	[0.173]***	[0.170]***	[0.062]***	[0.058]***	[0.090]***	[0.099]***	[0.070]***	[0.053]***	[0.054]***	[0.059]***
Observations	34684	35135	10505	10575	9294	9392	2964	2984	9303	9402	2966	2986
R-squared	0.35	0.25	0.22	0.13	0.06	0.05	0.05	0.03	0.07	0.06	0.05	0.05

Robust standard errors in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

omitted category public; se clustered at the country level;

[1] controls include GDP per capita, GDP growth previous 3 years and inflation

Table 7. Panel B: Industry Specific Access to Finance of Female Formal Enterprises

Probit	(1)	(2)	(3)	(4)	(5)	(6)
Dep. Var.: Female	All formal			Sole Proprietor		
Fin_Formal_s	-0.634			-1.491		
	[0.180]***			[0.318]***		
Fin_inv_s		-0.006			-0.013	
		[0.004]			[0.009]	
Fin_wkcap_s			0.002			-0.004
			[0.005]			[0.014]
country fe	yes	yes	yes	yes	yes	yes
Constant	-0.764	-0.992	-1.100	-0.517	-1.038	-1.197
	[0.090]***	[0.059]***	[0.036]***	[0.148]***	[0.118]***	[0.083]***
Observations	36877	36877	36877	11363	11363	11363
Pseudo-Rsq	0.04	0.04	0.04	0.05	0.05	0.05

Robust standard errors in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

se clustered at the country level

Table 8. Summary Statistics Household Surveys

Variable	Variable description	n. obs.	mean	st.dev.	min	max
Banking	uses now banking services	43908	0.23	0.42	0	1
Informal	uses now unregistered financial services	43908	0.27	0.45	0	1
Excluded	not banked; not formal or informal financial institutions	43908	0.57	0.49	0	1
Female	1 if respondent female	43908	0.53	0.50	0	1
Married	1 if married	43905	0.59	0.49	0	1
HH_head	1 if household head	43897	0.46	0.50	0	1
No-education	less than primary	43240	0.29	0.45	0	1
Primary	primary complete (and) less than secondary complete	43240	0.47	0.50	0	1
Secondary	secondary or vocational training complete (and) less than tertiary compl	43240	0.20	0.40	0	1
Tertiary	tertiary complete or more	43240	0.03	0.16	0	1
Numeracy	does not know what inflation is	35590	0.41	0.49	0	1
Owns_mobile	owns/uses pre-paid or contract cell phone	43883	0.33	0.47	0	1
Age_log	age (years) -log	43736	3.51	0.40	2.77	4.65
Employed	(main) source of income is from a wage (company or individual)	43908	0.18	0.39	0	1
Self_employed	(main) source of income is from own business	43908	0.17	0.38	0	1
Agriculture	(main) source of income is from selling agricultural, livestock or fishing p	40008	0.40	0.49	0	1
Riskaverse	disagree that 'to get ahead on life one need to take some risks'	13257	0.24	0.43	0	1
Rural	lives in a rural area	43908	0.65	0.48	0	1
Earner	1 if household main earner	25962	0.69	0.46	0	1
Decision_mkr	makes financial decisions (self or with spouse)	25859	0.74	0.44	0	1
log_income	log individual monthly income -LCU (ALL in USD)	31151	2.93	3.47	-9.10	9.37
region	number identifying different regions	43908	8.0	11.1	1	55
weight	weights	42708	3189.2	4806.8	0.026	122826

Table 9. Use of Banking Services

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	ALL	Botswana	Kenya06	Kenya09	Malawi	Namibia	Rwanda	SouthAfrica	Tanzania06	Tanzania09	Uganda	Zambia
Female	0.017	0.029	0.039	-0.015	0.026	-0.015	-0.002	-0.122	-0.004	-0.003	-0.018	-0.001
	[0.018]	[0.041]	[0.042]	[0.030]	[0.018]	[0.040]	[0.022]	[0.051]**	[0.010]	[0.008]	[0.025]	[0.003]
Rural	0.001	0.174	-0.142	-0.069	-0.057	-0.045	-0.016	-0.066	-0.024	-0.003	-0.004	0.004
	[0.020]	[0.084]**	[0.038]***	[0.029]**	[0.022]***	[0.049]	[0.020]	[0.038]*	[0.013]*	[0.009]	[0.029]	[0.003]
Primary	0.186	0.250	0.020	0.152	-0.013	0.095	0.112	0.205	0.043	0.025	0.086	0.010
	[0.026]***	[0.061]***	[0.036]	[0.034]***	[0.018]	[0.068]	[0.021]***	[0.059]***	[0.025]*	[0.010]**	[0.028]***	[0.007]
Secondary	0.437	0.370	0.333	0.338	0.144	0.232	0.421	0.312	0.105	0.174	0.308	0.118
	[0.026]***	[0.067]***	[0.046]***	[0.041]***	[0.032]***	[0.071]***	[0.098]***	[0.055]***	[0.026]***	[0.037]***	[0.066]***	[0.052]**
Tertiary	0.655	0.521	0.704	0.563	0.614		0.846	0.257	0.641	0.682	0.399	0.572
	[0.022]***	[0.079]***	[0.060]***	[0.069]***	[0.102]***		[0.064]***	[0.027]***	[0.206]***	[0.102]***	[0.171]**	[0.207]***
Age	0.256	0.198	0.226	0.200	0.051	0.105	0.072	0.255	0.024	0.044	-0.017	0.021
	[0.030]***	[0.083]**	[0.046]***	[0.040]***	[0.022]**	[0.070]	[0.025]***	[0.075]***	[0.012]**	[0.011]***	[0.038]	[0.011]*
Income		0.077		0.146	0.036	0.046	0.033	0.026	0.031	0.010	0.036	0.004
		[0.010]***		[0.017]***	[0.005]***	[0.009]***	[0.014]**	[0.008]***	[0.006]***	[0.003]***	[0.008]***	[0.001]***
Employed	0.404	0.115	0.185	0.130	0.134	0.374	0.125	0.153	0.024	0.095	0.010	0.052
	[0.019]***	[0.055]**	[0.046]***	[0.038]***	[0.034]***	[0.049]***	[0.076]*	[0.054]***	[0.016]	[0.035]***	[0.044]	[0.026]**
Self_employe	0.227	-0.018	0.120	0.074	-0.005	0.189	0.191	0.042	-0.009	-0.013	-0.051	0.008
	[0.027]***	[0.070]	[0.057]**	[0.039]*	[0.027]	[0.061]***	[0.081]**	[0.087]	[0.011]	[0.010]	[0.034]	[0.007]
Agriculture		-0.202	0.185	0.068	0.051	-0.029	0.038		-0.021	-0.045	-0.092	0.001
		[0.075]***	[0.079]**	[0.037]*	[0.022]**	[0.097]	[0.033]		[0.012]*	[0.013]***	[0.035]***	[0.004]
Owns_mobile	0.321	0.198	0.308	0.297	0.183	0.306	0.085	0.110	0.041	0.123	0.293	0.026
	[0.021]***	[0.044]***	[0.039]***	[0.024]***	[0.020]***	[0.046]***	[0.053]	[0.056]**	[0.016]**	[0.018]***	[0.033]***	[0.015]*
Married	0.099	0.125	0.031	-0.035	-0.018	0.149	0.021	-0.032	0.005	0.009	-0.006	0.003
	[0.020]***	[0.063]**	[0.037]	[0.030]	[0.020]	[0.051]***	[0.021]	[0.051]	[0.010]	[0.008]	[0.023]	[0.003]
HH_head	0.081	-0.013	-0.014	0.026	-0.005	0.040	0.005	-0.027	-0.004	0.002	0.042	-0.000
	[0.021]***	[0.061]	[0.036]	[0.036]	[0.020]	[0.050]	[0.022]	[0.058]	[0.010]	[0.009]	[0.025]*	[0.005]
Earner		0.113			0.014	0.030			-0.916	-0.022		-0.001
		[0.058]*			[0.031]	[0.046]			[0.097]***	[0.021]		[0.005]
Decision_taker				0.112	0.027		0.053		0.011	-0.004		
				[0.033]***	[0.019]		[0.027]*		[0.010]	[0.007]		
Riskaverse		-0.087				0.027		0.017			0.003	-0.004
		[0.045]*				[0.043]		[0.047]			[0.027]	[0.003]
Numeracy		0.061		0.101	0.141	0.128	0.032		0.017	0.020	0.121	0.006
		[0.045]		[0.026]***	[0.037]***	[0.059]**	[0.021]		[0.010]*	[0.008]**	[0.036]***	[0.004]
Botswana	-0.196											
	[0.041]***											
Kenya06	-0.290											
	[0.015]***											
Kenya09	-0.326											
	[0.022]***											
Malawi	-0.306											
	[0.012]***											
Namibia	-0.009											
	[0.042]											
Rwanda	-0.257											
	[0.020]***											
Tanzania06	-0.304											
	[0.011]***											
Tanzania09	-0.302											
	[0.011]***											
Uganda	-0.292											
	[0.014]***											
Zambia	-0.410											
	[0.020]***											
regional f.e.	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	43044	974	4237	6589	4712	1065	1894	3345	3097	5864	1587	3152
pseudo-r2	0.42	0.37	0.38	0.46	0.36	0.47	0.33	0.27	0.31	0.41	0.41	0.58

Robust standard errors in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Uganda06: household income; Kenya09: expenses; pooled regresions log-income (USD)

Table 10. Use of Informal Services

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	ALL	Botswana	Kenya06	Kenya09	Malawi	Namibia	Rwanda	SouthAfrica	Tanzania06	Tanzania09	Uganda	Zambia
Female	0.037	0.115	0.147	0.163	-0.012	-0.000	-0.084	0.012	0.127	0.063	0.058	0.003
	[0.006]***	[0.034]***	[0.041]***	[0.029]***	[0.018]	[0.000]	[0.038]**	[0.012]	[0.026]***	[0.019]***	[0.027]**	[0.002]
Rural	0.009	-0.072	0.010	0.002	0.191	0.000	0.008	0.043	0.079	-0.051	0.018	0.001
	[0.007]	[0.065]	[0.037]	[0.031]	[0.017]***	[0.001]	[0.039]	[0.015]***	[0.036]**	[0.025]**	[0.036]	[0.003]
Primary	0.016	0.183	0.098	0.075	-0.009	-0.001	-0.034	-0.011	-0.009	0.074	0.029	0.004
	[0.008]**	[0.051]***	[0.042]**	[0.030]**	[0.017]	[0.002]	[0.030]	[0.012]	[0.037]	[0.021]***	[0.027]	[0.003]
Secondary	0.015	0.178	-0.135	-0.040	-0.048	-0.001	-0.156	-0.035	-0.015	-0.004	-0.005	-0.004
	[0.009]*	[0.063]***	[0.051]***	[0.038]	[0.025]*	[0.001]	[0.047]***	[0.013]***	[0.039]	[0.037]	[0.048]	[0.003]
Tertiary	0.043	0.267	-0.063	-0.221	-0.139	-0.000		-0.031	-0.045	-0.193	0.296	-0.004
	[0.023]*	[0.105]**	[0.093]	[0.066]***	[0.037]***	[0.000]		[0.005]***	[0.106]	[0.029]***	[0.151]**	[0.004]
Age	0.045	0.354	-0.059	-0.044	0.007	-0.000	-0.083	0.005	-0.042	-0.071	-0.000	-0.000
	[0.009]***	[0.063]***	[0.048]	[0.035]	[0.021]	[0.001]	[0.043]*	[0.012]	[0.032]	[0.026]***	[0.034]	[0.004]
Income		0.024		0.031	0.006	0.000	0.006	-0.000	0.037	0.006	0.011	0.001
		[0.009]***		[0.013]**	[0.003]**	[0.000]	[0.010]	[0.001]	[0.011]***	[0.004]*	[0.008]	[0.000]**
Owns_mobile	0.033	0.143	0.009	0.074	-0.023	0.000	-0.112	-0.017	0.056	-0.004	0.056	-0.006
	[0.008]***	[0.038]***	[0.046]	[0.027]***	[0.018]	[0.000]	[0.043]***	[0.010]	[0.033]*	[0.022]	[0.029]*	[0.003]**
Employed	0.097	0.236	0.183	0.142	-0.021	-0.000	-0.073	0.016	0.068	-0.097	-0.089	0.030
	[0.011]***	[0.050]***	[0.052]***	[0.033]***	[0.027]	[0.000]	[0.061]	[0.015]	[0.041]*	[0.044]**	[0.049]*	[0.014]**
Self_employe	0.050	0.053	0.216	0.136	-0.007		0.046	-0.016	0.152	0.054	-0.088	0.008
	[0.012]***	[0.066]	[0.051]***	[0.034]***	[0.025]		[0.081]	[0.007]**	[0.040]***	[0.034]	[0.050]*	[0.006]
Agriculture		-0.007	0.131	0.118	0.030		0.016		0.000	0.032	-0.004	0.002
		[0.077]	[0.054]**	[0.029]***	[0.019]		[0.073]		[0.035]	[0.029]	[0.052]	[0.004]
Married	0.049	0.104	0.068	0.063	-0.022	0.003	-0.029	-0.016	0.048	0.024	0.099	0.001
	[0.008]***	[0.050]**	[0.039]*	[0.028]**	[0.018]	[0.003]	[0.034]	[0.008]**	[0.026]*	[0.019]	[0.025]***	[0.002]
HH_head	0.013	-0.048	0.090	0.003	-0.025	0.000	-0.016	-0.009	-0.011	0.002	0.071	-0.013
	[0.007]*	[0.047]	[0.047]*	[0.034]	[0.020]	[0.000]	[0.040]	[0.013]	[0.027]	[0.019]	[0.028]**	[0.005]**
Earner		0.081			-0.068				-0.331	0.099		0.005
		[0.049]			[0.037]*				[0.152]**	[0.028]***		[0.003]
Decision_taker				0.108	-0.034		-0.007		-0.018	-0.002		
				[0.030]***	[0.021]		[0.037]		[0.029]	[0.019]		
Riskaverse		0.044				-0.000		0.020			-0.010	-0.003
		[0.040]				[0.000]		[0.015]			[0.031]	[0.002]
Numeracy		0.072		-0.004	0.063	0.000	-0.014		0.053	-0.017	-0.089	-0.002
		[0.039]*		[0.027]	[0.034]*	[0.000]	[0.035]		[0.025]**	[0.020]	[0.031]***	[0.003]
Botswana	0.282											
	[0.036]***											
Kenya06	0.611											
	[0.049]***											
Kenya09	0.397											
	[0.044]***											
Malawi	0.221											
	[0.046]***											
Namibia	-0.077											
	[0.011]***											
Rwanda	0.359											
	[0.052]***											
Tanzania06	0.344											
	[0.051]***											
Tanzania09	0.388											
	[0.052]***											
Uganda	0.242											
	[0.046]***											
Zambia	-0.009											
	[0.012]											
regional f.e.	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	43044	974	4377	6589	4712	228	1894	3345	3097	5864	1587	2824
pseudo-r2	0.36	0.29	0.13	0.09	0.07	0.3	0.05	0.19	0.1	0.08	0.06	0.23

Robust standard errors in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Uganda06: household income; Kenya09: expenses; pooled regresions log-income (USD)

Table 11. Excluded from Financial Services

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	ALL	Botswana	Kenya06	Kenya09	Malawi	Namibia	Rwanda	SouthAfrica	Tanzania06	Tanzania09	Uganda	Zambia
Female	-0.073	-0.129	-0.106	-0.087	0.013	0.015	0.072	0.056	-0.117	-0.075	-0.084	0.000
	[0.019]***	[0.040]***	[0.037]***	[0.023]***	[0.024]	[0.040]	[0.042]*	[0.033]*	[0.030]***	[0.023]***	[0.038]**	[0.009]
Rural	0.009	-0.069	0.047	0.024	-0.158	0.033	0.025	-0.004	-0.048	0.074	-0.000	-0.012
	[0.021]	[0.078]	[0.031]	[0.025]	[0.028]***	[0.050]	[0.045]	[0.024]	[0.040]	[0.030]**	[0.048]	[0.010]
Primary	-0.137	-0.238	-0.037	-0.064	0.033	-0.112	-0.081	-0.139	0.015	-0.118	-0.079	-0.027
	[0.024]***	[0.052]***	[0.035]	[0.022]***	[0.022]	[0.068]*	[0.036]**	[0.042]***	[0.042]	[0.025]***	[0.037]**	[0.014]*
Secondary	-0.338	-0.295	-0.076	-0.124	-0.136	-0.251	-0.217	-0.183	-0.083	-0.250	-0.326	-0.190
	[0.025]***	[0.061]***	[0.041]*	[0.028]***	[0.036]***	[0.071]***	[0.071]***	[0.040]***	[0.044]*	[0.044]***	[0.061]***	[0.034]***
Tertiary	-0.505	-0.399	-0.306	-0.182	-0.467		-0.481	-0.138	-0.587	-0.481	-0.351	-0.705
	[0.020]***	[0.038]***	[0.018]***	[0.039]***	[0.041]***		[0.044]***	[0.019]***	[0.055]***	[0.069]***	[0.133]***	[0.117]***
Age	-0.259	-0.283	-0.043	-0.093	-0.072	-0.130	0.015	-0.195	0.001	-0.011	0.017	-0.049
	[0.028]***	[0.079]***	[0.041]	[0.027]***	[0.028]***	[0.069]*	[0.050]	[0.055]***	[0.036]	[0.031]	[0.051]	[0.014]***
Income		-0.052		-0.087	-0.026	-0.044	-0.060	-0.016	-0.084	-0.025	-0.053	-0.009
		[0.009]***		[0.012]***	[0.004]***	[0.009]***	[0.018]***	[0.005]***	[0.013]***	[0.005]***	[0.012]***	[0.001]***
Employed	-0.405	-0.190	-0.208	-0.099	-0.108	-0.380	-0.055	-0.141	-0.096	-0.231	0.094	-0.149
	[0.018]***	[0.053]***	[0.039]***	[0.024]***	[0.037]***	[0.049]***	[0.086]	[0.037]***	[0.044]**	[0.059]***	[0.075]	[0.032]***
Self_employe	-0.202	-0.007	-0.218	-0.080	-0.013	-0.209	-0.254	-0.015	-0.108	-0.041	0.117	-0.023
	[0.024]***	[0.072]	[0.036]***	[0.027]***	[0.033]	[0.058]***	[0.078]***	[0.056]	[0.043]**	[0.039]	[0.066]*	[0.016]
Agriculture		0.201	-0.139	-0.084	-0.045	-0.003	-0.026		0.056	0.047	0.074	0.005
		[0.096]**	[0.039]***	[0.021]***	[0.025]*	[0.095]	[0.087]		[0.037]	[0.036]	[0.065]	[0.012]
Owns_mobile	-0.290	-0.190	-0.162	-0.171	-0.168	-0.303	-0.100	-0.052	-0.118	-0.221	-0.311	-0.063
	[0.020]***	[0.042]***	[0.036]***	[0.025]***	[0.022]***	[0.046]***	[0.070]	[0.039]	[0.036]***	[0.027]***	[0.039]***	[0.020]***
Married	-0.154	-0.178	-0.129	-0.040	0.042	-0.145	-0.095	0.042	-0.057	-0.069	-0.097	-0.021
	[0.019]***	[0.053]***	[0.034]***	[0.023]*	[0.024]*	[0.052]***	[0.039]**	[0.039]	[0.030]*	[0.024]***	[0.034]***	[0.009]**
HH_head	-0.061	-0.018	-0.083	-0.004	0.045	-0.046	-0.034	0.007	0.021	-0.016	-0.111	0.012
	[0.021]***	[0.059]	[0.041]**	[0.027]	[0.027]*	[0.050]	[0.045]	[0.039]	[0.031]	[0.025]	[0.039]***	[0.016]
Earner		-0.081			0.037	-0.026			0.606	-0.099		-0.008
		[0.056]			[0.042]	[0.046]			[0.071]***	[0.041]**		[0.016]
Decision_taker				-0.080	-0.009		-0.007		-0.019	0.015		
				[0.028]***	[0.027]		[0.047]		[0.033]	[0.023]		
Riskaverse		0.027				-0.029		-0.061			0.002	0.016
		[0.046]				[0.043]		[0.024]**			[0.040]	[0.009]*
Numeracy		-0.140		-0.054	-0.211	-0.166	-0.029		-0.098	-0.021	-0.048	-0.016
		[0.044]***		[0.021]***	[0.040]***	[0.057]***	[0.042]		[0.029]***	[0.024]	[0.043]	[0.010]
Bostwana	0.191											
	[0.048]***											
Kenya06	0.024											
	[0.051]											
Kenya09	0.120											
	[0.044]***											
Malawi	0.315											
	[0.033]***											
Namibia	0.158											
	[0.045]***											
Rwanda	0.098											
	[0.047]**											
Tanzania06	0.263											
	[0.034]***											
Tanzania09	0.176											
	[0.040]***											
Uganda	0.297											
	[0.034]***											
Zambia	0.548											
	[0.023]***											
regional f.e.	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	43044	974	4377	6589	4712	1065	1894	3345	3097	5864	1587	3152
pseudor2	0.39	0.35	0.2	0.25	0.11	0.48	0.11	0.31	0.16	0.19	0.18	0.5

Robust standard errors in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Uganda06: household income; Kenya09: expenses; pooled regresions log-income (USD)

Table 12. Economic Effect of Gender Gaps in the Use of Formal Finance

	ALL			Botswana			Kenya06			Kenya09			Malawi			Namibia		
	Gap	tstat	Gap*beta	Gap	tstat	Gap*beta	Gap	tstat	Gap*beta	Gap	tstat	Gap*beta	Gap	tstat	Gap*beta	Gap	tstat	Gap*beta
Rural	0.01	-1.60*	0.0000	-0.01	0.28	**-0.0013**	0.04	-2.61***	**-0.0052**	0.01	-1.07	**-0.0008**	0.01	-0.55	**-0.0003**	0.01	-0.37	-0.0005
Primary	-0.03	6.10***	**-0.0055**	0.07	-2.58***	**0.0178**	-0.06	4.24***	-0.0012	0.00	-0.03	**0.0001**	0.00	0.12	**0.0000**	0.02	-0.67	0.0018
Secondary	-0.05	13.96***	**-0.0236**	-0.01	0.45	**-0.0044**	-0.08	6.19***	**-0.0261**	-0.08	7.71***	**-0.0273**	-0.05	4.89***	**-0.0067**	-0.05	1.76**	**-0.0115**
Tertiary	-0.01	7.78***	**-0.0077**	-0.04	3.05***	**-0.0213**	-0.02	5.09***	**-0.0163**	-0.02	4.64***	**-0.0092**	0.00	0.2	**-0.0005**	-0.01	0.68	
Age	-0.05	13.33***	**-0.0132**	0.01	-0.32	**0.0014**	-0.05	4.28***	**-0.0120**	-0.06	5.59***	**-0.0118**	-0.07	5.91***	**-0.0034**	0.02	-0.99	**0.0022**
Income	-0.53	13.44***		-0.32	1.50*	**-0.0248**				-0.2	7.45***	**-0.0294**	-0.39	4.81***	**-0.0142**	-0.69	3.07***	**-0.0316**
Employed	-0.08	20.93***	**-0.0311**	-0.12	4.43***	**-0.0141**	-0.12	9.19***	**-0.0219**	-0.12	11.94**	**-0.0160**	-0.04	3.95***	**-0.0053**	-0.09	3.37***	**-0.0354**
Self_employed	0.00	-0.14	**0.0001**	0.04	-2.12**	-0.0006	0.02	-1.71**	**0.0025**	0.01	-0.53	**0.0004**	0.00	-0.34	0.0000	0.01	-0.83	**0.0028**
Agriculture	-0.02	4.07***		-0.02	1.17	**0.0032**	-0.02	1.38*	**-0.0037**	-0.03	2.29**	**-0.0018**	-0.01	0.54	**-0.0004**	-0.01	1.19	0.0004
Owns_mobile	-0.06	13.69***	**-0.0197**	0.04	-1.27	**0.0070**	-0.1	7.07***	**-0.0293**	-0.12	9.93***	**-0.0365**	-0.03	2.47***	**-0.0060**	-0.07	2.63***	**-0.0225**
HH_head	-0.4	90.59***	**-0.0321**	-0.16	5.84***	0.0021	-0.39	28.76***	**0.0054**	-0.48	43.84**	-0.0125	-0.55	46.07***	**0.0027**	-0.07	2.39***	-0.0027
Married	-0.05	10.12***	**-0.0047**	-0.01	0.4	**-0.0012**	-0.06	3.73***	-0.0017	-0.06	4.95***	0.0021	-0.1	8.39***	0.0019	-0.03	1.21	**-0.0045**
Decision_tak	-0.05	8.54***								-0.04	3.18***	**-0.0040**	-0.09	7.87***	-0.0024			
Earner	-0.19	33.36***		-0.12	4.03***	**-0.0131**							-0.06	9.73***	-0.0009	0.05	-1.95**	0.0014
Riskaverse	0.03	-3.70***		0.08	-3.47***	**-0.0070**										-0.02	0.8	-0.0006
Numeracy	-0.08	15.71***		-0.07	2.74***	-0.0046				-0.15	12.76**	**-0.0156**	-0.02	2.00**	**-0.0023**	-0.01	0.61	**-0.0018**

	Rwanda			SouthAfrica			Tanzania06			Tanzania09			Uganda			Zambia		
	Gap	tstat	Gap*beta	Gap	tstat	Gap*beta	Gap	tstat	Gap*beta	Gap	tstat	Gap*beta	Gap	tstat	Gap*beta	Gap	tstat	Gap*beta
Rural	0.00	-0.07	0.0000	0.00	-0.31	**-0.0003**	0.04	-2.96***	**-0.0010**	-0.08	8.21***	0.0002	-0.07	4.16***	0.0003	0.00	-0.17	0.0000
Primary	-0.05	2.22**	**-0.0058**	0.03	-1.62*	**0.0053**	-0.06	4.38***	**-0.0027**	-0.06	5.07***	**-0.0014**	-0.04	1.91**	**-0.0033**	0.00	0.29	0.0000
Secondary	-0.02	2.13**	**-0.0101**	-0.04	2.57***	**-0.0124**	-0.03	2.59***	**-0.0034**	-0.02	2.69***	**-0.0030**	-0.05	3.71***	**-0.0144**	-0.08	5.47***	**-0.0089**
Tertiary	-0.01	2.14**	**-0.0097**	0.00	0.05	**-0.0001**	-0.01	2.41***	**-0.0048**	-0.01	4.12***	**-0.0053**	-0.01	2.54***	**-0.0054**	-0.01	3.71***	**-0.0073**
Age	-0.03	1.55*	**-0.0021**	0.01	-0.42	**0.0014**	-0.08	6.85***	**-0.0019**	-0.09	10.28**	**-0.0039**	-0.03	2.00**	**0.0005**	-0.1	8.39***	**-0.0021**
Income	-0.46	6.24***	**-0.0153**	-0.23	1.92**	**-0.0059**	-1.43	12.44***	**-0.0445**	-0.66	9.27***	**-0.0066**	-0.25	3.58***	**-0.0091**	-1.93	8.73***	**-0.0077**
Employed	-0.06	4.72***	**-0.0081**	-0.11	7.18***	**-0.0169**	-0.07	7.51***	**-0.0018**	-0.02	4.88***	**-0.0021**	-0.05	4.02***	**-0.0005**	-0.07	5.81***	**-0.0038**
Self_employed	-0.02	1.31*	**-0.0037**	-0.02	2.30**	-0.0008	-0.03	2.70***	0.0003	-0.02	2.23**	0.0003	0.03	-1.93**	**-0.0016**	0.03	-2.25**	0.0002
Agriculture	0.07	-3.50***	0.0028				-0.05	4.10***	**0.0011**	-0.05	4.74***	**0.0024**	-0.03	1.49*	0.0025	-0.08	6.06***	-0.0001
Owns_mobile	0	0.2	**-0.0002**	0.03	-2.43***	**0.0038**	-0.08	7.58***	**-0.0035**	-0.08	7.72***	**-0.0095**	-0.07	4.42***	**-0.0213**	-0.04	2.80***	**-0.0009**
HH_head	-0.44	20.80***	**-0.0022**	-0.28	18.56***	0.0077	-0.21	15.78***	0.0008	-0.49	48.90**	-0.0010	-0.48	29.88***	**-0.0201**	-0.42	29.71***	0.0000
Married	-0.13	5.73***	-0.0028	-0.09	5.62***	0.0028	-0.1	7.41***	-0.0005	0.03	-2.86**	0.0003	-0.03	1.65**	0.0002	-0.04	2.48***	-0.0001
Decision_take	0.01	-0.37	**0.0004**				-0.04	3.39***	-0.0005	-0.04	3.55***	**0.0001**						
Earner							-0.11	7.77***	**0.0975**	-0.07	9.62***	0.0015				-0.4	27.72***	0.0004
Riskaverse				0.04	-3.17***	0.0007							0.00	0.05	0.0000	0.03	-2.55***	-0.0001
Numeracy	-0.06	3.06***	-0.0019				-0.13	9.41***	**-0.0023**	-0.12	11.29**	**-0.0024**	-0.07	5.57***	**-0.0089**	-0.07	5.65***	-0.0004

note: bold if beta siginificant at 10% (table 9)

Table A1. Sample for Enterprise Analysis

country	*obs*	*country*	*obs*
Albania2007	294	Kyrgyz Republic2009	230
Albania2009	172	Lao PDR2009	360
Angola2006	423	Latvia2009	256
Argentina2006	1,025	Lithuania2009	269
Armenia2009	371	Macedonia, FYR2009	360
Azerbaijan2009	374	Mali2007	610
Belarus2008	262	Mauritania2006	237
Bhutan2009	250	Mexico2006	1,415
Bolivia2006	598	Moldova2009	356
Botswana2006	342	Mongolia2009	360
Brazil2009	1,185	Mozambique2007	479
Bulgaria2007	1,002	Namibia2006	322
Bulgaria2009	282	Nepal2009	368
Burkina Faso2006	133	Nicaragua2006	469
Burundi2006	268	Nigeria2007	2,309
Cameroon2006	153	Panama2006	581
Cape Verde2006	96	Paraguay2006	597
Chile2006	994	Peru2006	625
Colombia2006	993	Poland2009	422
Congo, Dem. Rep.2006	339	Romania2009	501
Croatia2007	615	Russian Federation2009	969
Croatia2009	157	Rwanda2006	209
Czech Republic2009	238	**Senegal2007**	**505**
Ecuador2006	647	Serbia2009	381
El Salvador2006	676	Slovak Republic2009	258
Estonia2009	254	Slovenia2009	270
Gambia, The2006	174	SouthAfrica2007	925
Georgia2008	363	Swaziland2006	305
Ghana2007	494	Tajikistan2008	351
Guatemala2006	511	Tanzania2006	413
Guinea-Bissau2006	159	Turkey2008	1,134
Honduras2006	430	Uganda2006	563
Hungary2009	281	Ukraine2008	806
Kazakhstan2009	533	Uruguay2006	582
Kenya2007	654	Zambia2007	596
		Total	**35,135**

Table A2. Summary Statistics Household Surveys by Country

	Bostwana 2004					Kenya 2006					Kenya 2009					Malawi 2008					Namibia 2004					Rwanda 2008				
Variable	*Obs*	*Mean*	*Std. Dev.*	*Min*	*Max*	*Obs*	*Mean*	*Std. Dev.*	*Min*	*Max*	*Obs*	*Mean*	*Std. Dev.*	*Min*	*Max*	*Obs*	*Mean*	*Std. Dev.*	*Min*	*Max*	*Obs*	*Mean*	*Std. Dev.*	*Min*	*Max*	*Obs*	*Mean*	*Std. Dev.*	*Min*	*Max*
Banking	1200	0.43	0.50	0	1	4418	0.19	0.39	0	1	6598	0.25	0.44	0	1	4993	0.19	0.39	0	1	1200	0.53	0.50	0	1	2000	0.14	0.35	0	1
Informal	1200	0.31	0.46	0	1	4418	0.50	0.50	0	1	6598	0.50	0.50	0	1	4993	0.25	0.43	0	1	1200	0.01	0.08	0	1	2000	0.26	0.44	0	1
Excluded	1200	0.46	0.50	0	1	4418	0.39	0.49	0	1	6598	0.36	0.48	0	1	4993	0.55	0.50	0	1	1200	0.46	0.50	0	1	2000	0.53	0.50	0	1
Transactions	1200	0.58	0.49	0	1	4418	0.32	0.47	0	1	6598	0.49	0.50	0	1	4993	0.40	0.49	0	1	1200	0.58	0.49	0	1	2000	0.21	0.40	0	1
Savings	1200	0.51	0.50	0	1	4418	0.39	0.49	0	1	6598	0.53	0.50	0	1	4993	0.36	0.48	0	1	1200	0.52	0.50	0	1	2000	0.38	0.49	0	1
Credit	1200	0.20	0.40	0	1	4418	0.22	0.41	0	1	6598	0.22	0.41	0	1	4993	0.19	0.39	0	1	1200	0.10	0.30	0	1	2000	0.24	0.43	0	1
Insurance	1200	0.29	0.45	0	1	4418	0.07	0.25	0	1	6598	0.09	0.29	0	1	4993	0.05	0.22	0	1	1200	0.18	0.38	0	1	2000	0.81	0.39	0	1
Female	1200	0.51	0.50	0	1	4418	0.56	0.50	0	1	6598	0.59	0.49	0	1	4993	0.52	0.50	0	1	1200	0.50	0.50	0	1	2000	0.64	0.48	0	1
Married	1197	0.21	0.40	0	1	4418	0.61	0.49	0	1	6598	0.60	0.49	0	1	4993	0.74	0.44	0	1	1200	0.25	0.43	0	1	2000	0.55	0.50	0	1
HH_head	1199	0.41	0.49	0	1	4418	0.38	0.48	0	1	6598	0.49	0.50	0	1	4993	0.50	0.50	0	1	1200	0.38	0.48	0	1	2000	0.51	0.50	0	1
No-education	1200	0.27	0.44	0	1	4402	0.43	0.50	0	1	6598	0.43	0.50	0	1	4993	0.18	0.39	0	1	1200	0.14	0.34	0	1	2000	0.42	0.49	0	1
Primary	1200	0.36	0.48	0	1	4402	0.36	0.48	0	1	6598	0.32	0.46	0	1	4993	0.55	0.50	0	1	1200	0.44	0.50	0	1	2000	0.50	0.50	0	1
Secondary	1200	0.32	0.47	0	1	4402	0.23	0.42	0	1	6598	0.23	0.42	0	1	4993	0.13	0.34	0	1	1200	0.40	0.49	0	1	2000	0.06	0.24	0	1
Tertiary	1200	0.06	0.23	0	1	4402	0.02	0.15	0	1	6598	0.02	0.14	0	1	4993	0.02	0.15	0	1	1200	0.03	0.16	0	1	2000	0.01	0.12	0	1
Numeracy	1200	0.34	0.48	0	1	0					6598	0.40	0.49	0	1	4993	0.09	0.29	0	1	1200	0.20	0.40	0	1	2000	0.78	0.41	0	1
Owns_mobile	1200	0.38	0.48	0	1	4393	0.27	0.45	0	1	6598	0.47	0.50	0	1	4993	0.33	0.47	0	1	1200	0.37	0.48	0	1	2000	0.07	0.25	0	1
Age_log	1200	3.48	0.39	2.89	4.47	4418	3.51	0.41	2.77	4.50	6597	3.57	0.42	2.77	4.65	4993	3.51	0.40	2.89	4.58	1198	3.45	0.37	2.77	4.48	2000	3.55	0.40	2.89	4.51
Employed	1200	0.37	0.48	0	1	4418	0.24	0.43	0	1	6598	0.22	0.42	0	1	4993	0.15	0.36	0	1	1200	0.40	0.49	0	1	2000	0.10	0.30	0	1
Self_emplo~d	1200	0.10	0.29	0	1	4418	0.20	0.40	0	1	6598	0.20	0.40	0	1	4993	0.15	0.35	0	1	1200	0.11	0.31	0	1	2000	0.11	0.31	0	1
Agriculture	1200	0.06	0.23	0	1	4418	0.35	0.48	0	1	6598	0.34	0.47	0	1	4993	0.46	0.50	0	1	1200	0.05	0.21	0	1	2000	0.72	0.45	0	1
Riskaverse	1200	0.21	0.41	0	1	0					0					0					1200	0.35	0.48	0	1	0				
Rural	1200	0.67	0.47	0	1	4418	0.68	0.47	0	1	6598	0.71	0.45	0	1	4993	0.81	0.39	0	1	1200	0.55	0.50	0	1	2000	0.75	0.44	0	1
Earner	1154	0.40	0.49	0	1	0					0					4968	0.95	0.23	0	1	1200	0.24	0.43	0	1	2000	0.36	0.48	0	1
Decision_mkr	0					0					6598	0.73	0.44	0	1	4993	0.80	0.40	0	1	0					2000	0.77	0.42	0	1
log_income	1023	4.70	3.44	-0.69	10.13	0					0					4737	7.85	2.82	-0.69	14.22	1091	4.63	3.71	-0.69	10.82	1894	8.60	1.57	-0.69	14.91
log_incomehh	737	6.86	2.31	-0.69	11.00	0					0					0					816	6.84	2.98	-0.69	12.21	0				
log_expenses	0					0					6590	8.90	1.09	3.00	13.61	0					0					0				
region	1200	3.41	1.08	1	4	4418	5	2	1	8	6598	4.30	2.12	1	8	4993	2.31	0.76	1	3	1200	7.27	3.56	1	13	2000	3.31	1.38	1	5
weight	1200	1.00	0.33	0.56	5.09	4418	4127	2778	33.294	25576	6598	1.00	0.80	0.03	9.02	4993	1212.33	726.71	197.68	3844.6	0					2000	1846.9	1235.7	100.7	9377.4

	SouthAfrica 2008					Tanzania 2006					Tanzania 2009					Uganda 2006					Zambia 2005					All				
Variable	*Obs*	*Mean*	*Std. Dev.*	*Min*	*Max*	*Obs*	*Mean*	*Std. Dev.*	*Min*	*Max*	*Obs*	*Mean*	*Std. Dev.*	*Min*	*Max*	*Obs*	*Mean*	*Std. Dev.*	*Min*	*Max*	*Obs*	*Mean*	*Std. Dev.*	*Min*	*Max*	n. obs.	mean	st.dev.	min	max
Banking	3900	0.70	0.46	0	1	4962	0.10	0.31	0	1	7680	0.11	0.32	0	1	2959	0.16	0.37	0	1	3998	0.14	0.35	0	1	43908	0.23	0.42	0	1
Informal	3900	0.08	0.28	0	1	4962	0.24	0.43	0	1	7680	0.27	0.44	0	1	2959	0.21	0.41	0	1	3998	0.03	0.17	0	1	43908	0.27	0.45	0	1
Excluded	3900	0.19	0.39	0	1	4962	0.66	0.47	0	1	7680	0.57	0.49	0	1	2959	0.62	0.48	0	1	3998	0.83	0.38	0	1	43908	0.57	0.49	0	1
Transactions	3900	0.75	0.43	0	1	4962	0.26	0.44	0	1	7680	0.15	0.36	0	1	2959	0.39	0.49	0	1	3998	0.26	0.44	0	1	43908	0.36	0.48	0	1
Savings	3900	0.41	0.49	0	1	4962	0.54	0.50	0	1	7680	0.68	0.46	0	1	2959	0.72	0.45	0	1	3998	0.23	0.42	0	1	43908	0.49	0.50	0	1
Credit	3900	0.32	0.47	0	1	4962	0.20	0.40	0	1	7680	0.17	0.37	0	1	2959	0.29	0.45	0	1	3998	0.05	0.21	0	1	43908	0.20	0.40	0	1
Insurance	3900	0.52	0.50	0	1	4962	0.06	0.24	0	1	7680	0.06	0.24	0	1	0					3998	0.06	0.25	0	1	40949	0.16	0.36	0	1
Female	3900	0.50	0.50	0	1	4962	0.47	0.50	0	1	7680	0.53	0.50	0	1	2959	0.52	0.50	0	1	3998	0.50	0.50	0	1	43908	0.53	0.50	0	1
Married	3900	0.38	0.49	0	1	4962	0.59	0.49	0	1	7680	0.73	0.44	0	1	2959	0.55	0.50	0	1	3998	0.51	0.50	0	1	43905	0.59	0.49	0	1
HH_head	3900	0.48	0.50	0	1	4962	0.34	0.47	0	1	7672	0.54	0.50	0	1	2957	0.55	0.50	0	1	3998	0.42	0.49	0	1	43897	0.46	0.50	0	1
No-education	3900	0.06	0.24	0	1	4798	0.23	0.42	0	1	7666	0.27	0.44	0	1	2485	0.44	0.50	0	1	3998	0.26	0.44	0	1	43240	0.29	0.45	0	1
Primary	3900	0.46	0.50	0	1	4798	0.51	0.50	0	1	7666	0.64	0.48	0	1	2485	0.43	0.50	0	1	3998	0.47	0.50	0	1	43240	0.47	0.50	0	1
Secondary	3900	0.37	0.48	0	1	4798	0.25	0.44	0	1	7666	0.09	0.28	0	1	2485	0.11	0.31	0	1	3998	0.26	0.44	0	1	43240	0.20	0.40	0	1
Tertiary	3900	0.11	0.31	0	1	4798	0.01	0.11	0	1	7666	0.01	0.08	0	1	2485	0.02	0.13	0	1	3998	0.01	0.11	0	1	43240	0.03	0.16	0	1
Numeracy	0					4962	0.50	0.50	0	1	7680	0.69	0.46	0	1	2959	0.16	0.36	0	1	3998	0.22	0.41	0	1	35590	0.41	0.49	0	1
Owns_mobile	3900	0.73	0.44	0	1	4962	0.19	0.39	0	1	7680	0.26	0.44	0	1	2959	0.28	0.45	0	1	3998	0.20	0.40	0	1	43883	0.33	0.47	0	1
Age_log	3900	3.56	0.41	2.77	4.60	4959	3.48	0.41	2.77	4.60	7680	3.52	0.38	2.77	4.60	2801	3.49	0.37	2.89	4.55	3990	3.34	0.37	3	4	43736	3.51	0.40	2.77	4.65
Employed	3900	0.37	0.48	0	1	4962	0.14	0.34	0	1	7680	0.04	0.20	0	1	2959	0.15	0.35	0	1	3998	0.19	0.40	0	1	43908	0.18	0.39	0	1
Self_emplo~d	3900	0.07	0.26	0	1	4962	0.20	0.40	0	1	7680	0.18	0.38	0	1	2959	0.28	0.45	0	1	3998	0.17	0.38	0	1	43908	0.17	0.38	0	1
Agriculture	0					4962	0.28	0.45	0	1	7680	0.60	0.49	0	1	2959	0.46	0.50	0	1	3998	0.26	0.44	0	1	40008	0.40	0.49	0	1
Riskaverse	3900	0.24	0.43	0	1	0					0					2959	0.21	0.41	0	1	3998	0.25	0.43	0	1	13257	0.24	0.43	0	1
Rural	3900	0.24	0.43	0	1	4962	0.45	0.50	0	1	7680	0.77	0.42	0	1	2959	0.71	0.45	0	1	3998	0.68	0.47	0	1	43908	0.65	0.48	0	1
Earner	0					4962	0.62	0.48	0	1	7680	0.89	0.31	0	1	0					3998	0.45	0.50	0	1	25962	0.69	0.46	0	1
Decision_mkr	0					4588	0.78	0.41	0	1	7680	0.69	0.46	0	1	0					0					25859	0.74	0.44	0	1
log_income	3345	5.80	3.42	-0.69	11.04	3427	9.08	3.43	-0.69	12.43	5886	9.94	2.76	-0.69	14.22	0					3158	8.67	6.27	-1	16					
log_incomehh	3307	7.14	2.42	-0.69	11.04	2604	10.10	2.58	-0.69	12.43	5230	11.13	1.14	-0.69	14.22	1956	10.10	1.56	5.12	19.62	2292	12.07	3.97	-1	16	31151	2.93	3.47	-9.10	9.37
log_expenses	0					0					0					0					0									
region	3900	4.88	2.54	1	9	4962	23.3	20.5	1	55	7680	13.8	12.8	1	55	2959	3.3	1.3	1	5	3998	5	3	1	9	43908	8.0	11.1	1	55
weight	3900	8201.1	8439.0	21.9	59288	4962	4259.6	5333.7	149.1	31201	7680	5457.8	5254.8	130.0	122826	2959	4452.2	2685.9	332	25309	3998	1	1	0.16	3.09	42708	3189.2	4806.8	0.026	122826

Figure 1: Women, Business and Law index across the world.

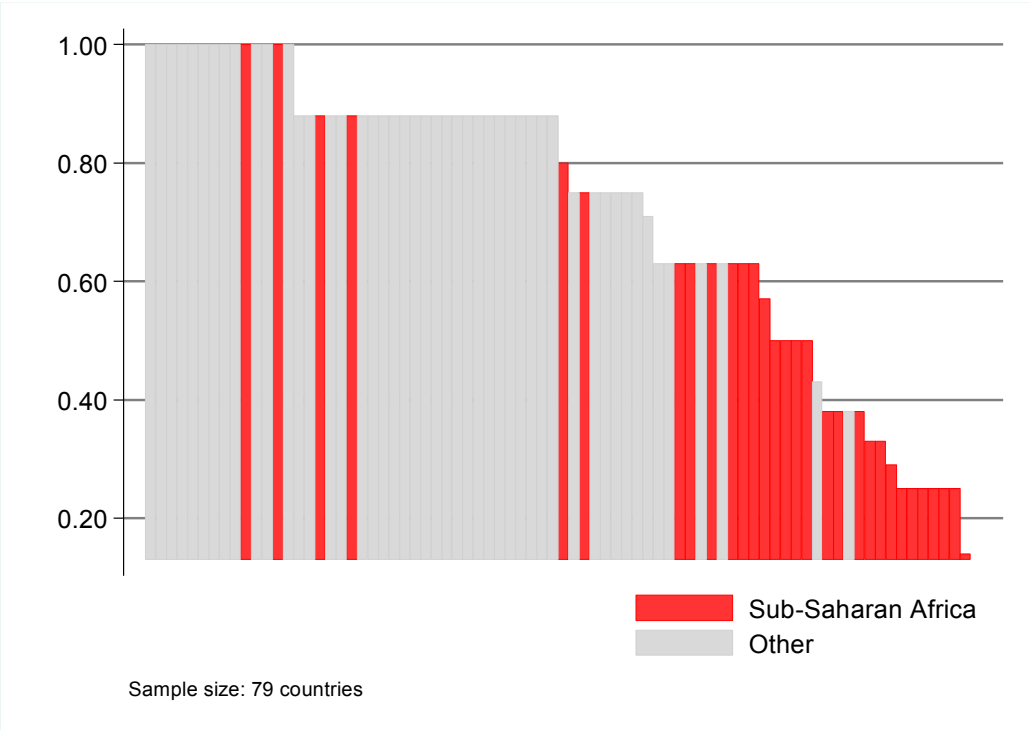
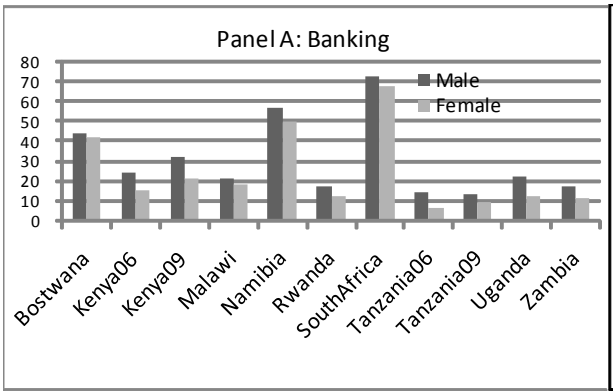
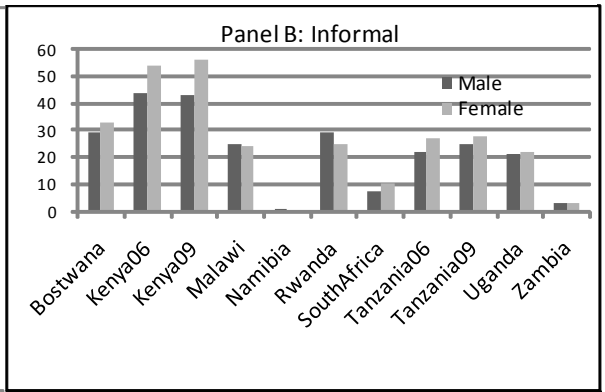
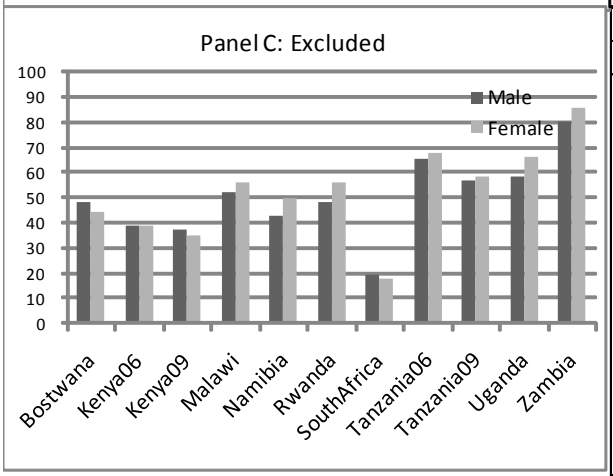


Figure 2. Gender Gap in the Use of Finacial Services







	Banking		Informal		Excluded	
country	Gap	tstat	Gap	tstat	Gap	tstat
Bostwana	-2	0.89	4	-1.31	-4	1.33
Kenya06	-9	7.73	10	-6.55	0.00	0.38
Kenya09	-11	10.99	13	-10.7	-2	1.17
Malawi	-3	2.21	-1	0.89	4	-2.84
Namibia	-7	2.48	-1	2.11	7	-2.48
Rwanda	-5	2.6	-4	1.76	8	-3.77
SouthAfrica	-4	3.06	3	-3.02	-1	0.4
Tanzania06	-8	9.3	5	-4.65	3	-2.03
Tanzania09	-4	5.3	3	-3.09	1	-1.06
Uganda	-10	7.33	1	-0.16	8	-4.05
Zambia	-6	5.37	0	-1.24	6	-4.83
ALL	-7	17.31	6	-14.1	1	-2.23