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Kenya Institute for Public Policy
Research and Analysis

KIPPRA in Brief

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Abstract

This study explored gender dynamics in informal establishments in Kenya. The objective was to uncover the underlying factors that cause difference in productivity between men and women-owned establishments in Kenya's informal sector. Using a nationally representative sample from the 2016 Micro, Small and Medium Enterprises (MSMEs) Survey, the study employed Oaxaca-Blinder decomposition technique to identify contributors of gender productivity gap. From the findings, men-owned establishments have a higher productivity compared to women-owned establishments. The productivity gap between the two genders is largely attributed to differences in endowment of factors of production, establishment and entrepreneur characteristics. Firm size, number of working hours, startup capital and use of technology are key contributors to gender productivity gap exhibited in Kenya's informal sector. To bridge this gap in productivity, there is need for a gender targeted approach in business development trainings to enhance entrepreneurial mindset among women entrepreneurs and encourage them to compete with their male counterparts; foster formation of SACCOs among women entrepreneurs for ease of credit access, and ease time constraint faced by women to engage in economic activities by engaging men in child care provision. In addition, there is need to increase awareness and sensitization on technology adoption to informal establishments.

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1.   Introduction

1.1   Overview

Gender inequality in the labour market has led to gender productivity gap, which in turn causes a lag in economic development. However, research shows that when men and women are empowered equally to participate in economic activities, it enhances productivity, better performance by enterprises, which in turn leads to improved development outcomes (World Bank, 2019). Advancing gender equality makes economic sense and, increasingly, governments and other stakeholders are recognizing the potential of women entrepreneurs and are ensuring that gender mainstreaming policies and initiatives are clearly spelled out in national and international development goals.

For many developing countries, the informal economy plays a dominant role in employment generation. The informal economy refers to a number of non-agricultural economic activities that are excluded from the law, usually situated beyond regulation and taxation. The informal economy is made up of smallscale economic activities, which consist of self-employed persons, small enterprises with few workers that also hire family labour (ILO, 2012). Additionally, enterprise characteristics in the informal sector include little capital, use of low-level technology, and lack access to markets and formal institutions (ILO, 2012).

While the informal economy is a huge employer in most developing economies, informal enterprises are less productive compared to formal enterprises, and they are survivalists in nature with majority of them hardly transiting to formality (La Porta and Shleifer, 2008; 2014). However, Grimm et al. (2012) note that there is a segmentation of informal enterprises into three categories: top tier enterprises which are growth oriented, low tier enterprises that are survivalists in nature, and a middle category dubbed 'constrained gazelles'. The 'constrained gazelles' exhibit a high marginal return to capital, such as top tier enterprises and are more productive than low tier but operate with considerably lower capital stock. Nevertheless, they have a high potential to grow once the external constraints they face, such as low access to capital and productive infrastructure are reduced.

According to International Labour Organization, two billion of the world's employed population rely on the informal economy to make their living (ILO, 2018). In Kenya, the story is no different, with majority of the new jobs being created in the informal economy (Figure 1). In 2018, 840,600 new jobs were created, with 762,200 new jobs created in the informal sector; the informal sector accounting for 90.7 per cent of total employment (KNBS, 2019).

Figure 1: Trends in new jobs created in Kenya (2013-2017)
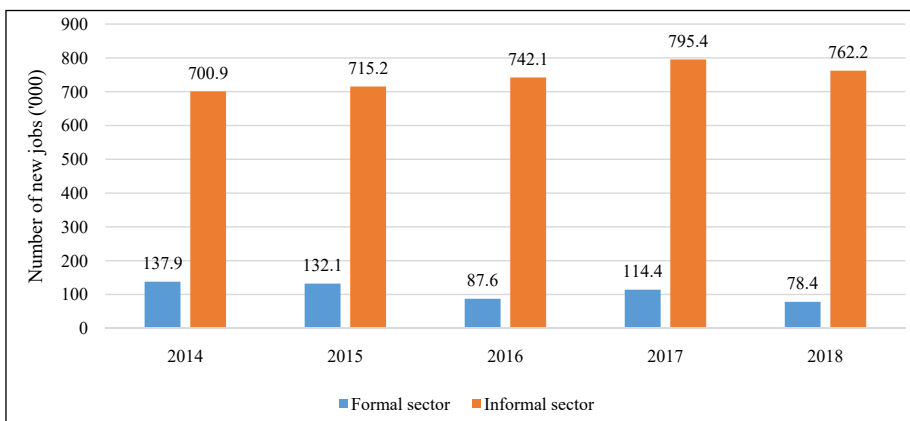
Source KNBS (2019), Economic Survey

Considering the upward trend of new jobs created in Kenya's informal sector and the goal of the Kenya Vision 2030 to attain a sustainable double-digit economy, spurring economic growth through entrepreneurship and enterprise development in the informal economy has been identified as a potential strategy that can lead to increased economic productivity (ILO, 2007)[1]. Entrepreneurship is said to be a great source of innovation, productivity growth and source of new jobs.

From empirical evidence, gender inequality in the labour markets is a reality in Kenya, and women have been left behind in terms of economic participation. This gender inequality is not only reflected in the low-productivity of the informal

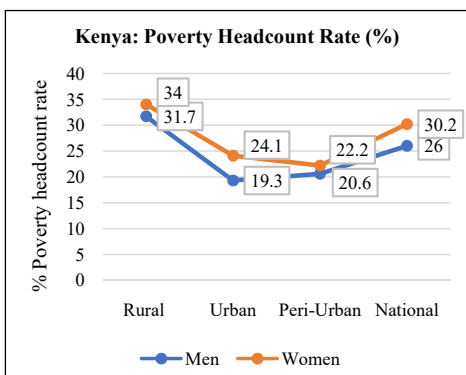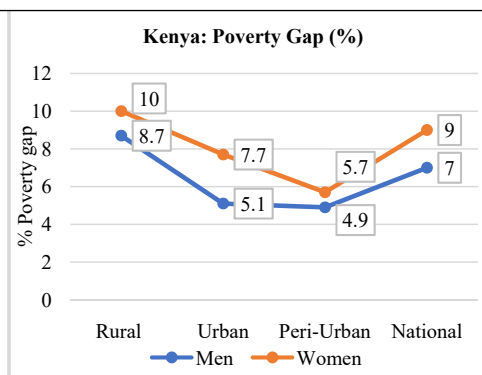**Figure 2: Gender poverty headcount in Kenya**

Figure 3. Gender poverty gap in Kenya

Source: KNBS, 2015/16 Kenya Integrated Household Budget Survey

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[1] https://www.ilo.org/empent/areas/entrepreneurship-and-enterprise-development/lang--en/index.htm

sector, it is also reflected in the poverty headcount and poverty gap statistics from the Kenya Integrated Household Budget Survey 2015/16.

The poverty gap between men and women is directly linked to their ability to be productive in the economic sphere. A 2013 World Bank survey on informal enterprises shows that men-managed enterprises have a higher productivity compared to women enterprises, with productivity gap being by Ksh 6,881 (World Bank, 2016). With the informal economy's characteristics of smallscale activities, less capital investment, limited job security (KNBS, 2018), coupled with patriarchal social values, women in the informal economy are most vulnerable situations, and have tended to be clustered in 'traditional women' oriented economic activities, which are faced with lower productivity and low income (ILO, 2018).

Various international and local policies on gender have been fronted over time to bridge the socio-economic gaps that exist between men and women. The Sustainable Development Goals (SDGs) goals 5 (Gender Equality) and goal 8 (Decent Work and Economic Growth)[2], coupled with the Constitution of Kenya (2010), call for society to move away from the traditional social constructs of gender that have created structural inequalities, so as to eliminate labour market inequalities, and instead enhance labour productivity.

If the factors contributing to the gender productivity are not critically assessed and addressed, the informal economy will continue to be dominantly characterized by underperforming enterprises, and women will continue to be vulnerable and sink deeper into poverty. Kenya's economy will not be able to achieve its development goal of achieving a sustainable economic growth rate of 10 per cent per annum (Kenya Vision 2030, 2008).

Therefore, bridging the productivity gap between men- and women-owned informal enterprises is of meaningful concern to fostering gender equality in Kenya's labour market, increasing productivity in the informal sector, and distribution of income across gender.

The overall objective of this paper is to uncover the underlying factors that cause difference in productivity between men- and women-owned informal enterprises in Kenya using a nationally representative sample from the 2016 Micro, Small and Medium Establishment (MSME) Survey.

The specific research questions this paper aims to address are:

(i)   How does gender inequality manifest itself in the informal sector?

(ii)   What factors are attributable to the gender productivity gap in informal enterprises?

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[2]   Sustainable Development Goals - https://sustainabledevelopment.un.org/sdgs

By exploring these issues, this paper contributes to knowledge on labour inequalities in the informal sector, which will be useful in informing policy makers of the context in which decisions are made to improve productivity in Kenya's informal sector, and attain the Sustainable Development Goals 5 and 8 on gender equality, and decent work and economic growth.

1.2   Review of Legal and Policy Framework on Affirmative Action

In Kenya, laws have evolved over time to address the double burden of reproductive and productive labour for women, recognizing various local and international human rights instruments. These rights have been expanded to recognize women's labour force participation as being inalienable, interdependent and indivisible human rights (Universal Declaration of Human Rights, 1948; Constitution of Kenya, 2010). Additionally, Kenya has committed to various instruments to guarantee women equal working conditions, not inferior to those enjoyed by men, with equal pay for equal work (International Covenant on Economic, Social and Cultural Rights, 1966; Convention on the Elimination of all Forms of Discrimination Against Women, 1979).

Despite the legal and policy frameworks on gender that seek to correct the inequalities that have historically been created, one of the setbacks in the governance of the informal economy is that it is challenging to trace how gender policies and standards are expressed and enforced within the informal sector, and thus makes it challenging to address rights deficits.

The real underlying issue in the inequalities faced between men and women is the differential access and control over resources. There are three categories of resources: productive resources, political resources, and time. Productive resources include: land, credit, cash income, and employment while political resources include education, political representation, leadership; and time has monetary value. Historically, women have had limited access and control over the resources aforementioned. To address the unequal access and control of these resources between men and women, various initiatives have been fronted over time to bridge the gap between men and marginalized groups.

1.3   Access to Political Resources

The Economic Recovery Strategy (ERS 2003-2007) policy agenda was to reverse decades of slow and stagnating economic growth, which had adversely undermined the well-being of Kenyans, particularly in the education sector. In line with this, Kenya adapted the Millennium Development Goals (MDGs), of which goal 3

focused on elimination of gender disparities in all levels of education by 2015, and this has been enhanced through universal access to primary and secondary education. These policies bridged the education gap between men and women and enhanced human capital in Kenya.

1.4   Access to Productive Resources

Despite the progress in education, gender inequalities were found to supersede the human capital aspect. With this, the Kenya Vision 2030 launched various affirmative action funds and initiatives that specifically target women, and other vulnerable group entrepreneurs, providing them with capital and business opportunities to enhance the productivity of their enterprises. The development plan outlines various flagship projects under the social pillar aimed at empowering women and other marginalized groups. Majority of the affirmative action plans are finance-related, with the exception of Access to Government Procurement Opportunities (AGPO). Public procurement opportunities have emerged as frontiers that provide jobs and opportunities especially for groups that are at most risk of exclusion from social and economic growth.

Table 1: Affirmative action initiatives in Kenya

Affirmative Action Initiatives	Women Enterprise Fund (2007)	Youth Enterprise Development Fund (2007)	Access to Government Opportunities (AGPO) (2013)	Uwezo Fund (2013)	National Government Affirmative Action Fund (2015)
Access to Finance	✓	✓	✗	✓	✓
Enterprise Business Development	✓	✓	✗	✗	✗
Marketing	✗	✓	✗	✗	✗
Entrepreneurial Training/Capacity Building	✗	✓	✗	✓	✗
Access to Government Procurement (30%)	✗	✗	✓	✗	✗
Mentorship	✗	✗	✗	✓	✗

Target Group(s)	Women Only	Youth: Men and Women	Women, Youth, and Persons with Disabilities	Women, Youth, and Persons with Disabilities	Women, Youth, Persons with Disabilities, Needy Children and Elderly
Target Sector(s)	Informal & Formal	Informal & Formal	Formal Only	Informal & Formal	Informal & Formal

From the affirmative action initiatives put in place, much emphasis has been put on access to finance. Enterprise business development and entrepreneurial training is offered by two funds, Women Enterprise Fund (WEF) and Youth Enterprise Development Fund (YEDF), which are both national funds. Access to market, both local and international, is offered by YEDF only to women, youth and persons with disabilities enterprises nationally while mentorship is offered by Uwezo Fund only, but this fund operates at the constituency level only. All the funds, with the exception of AGPO, are accessible to both formal and informal enterprises.

The affirmative action funds target women of all ages; women youth and women with disabilities are captured across all the funds, signalling their critical need for access to financial resources and support services. When we look at men, only men who are youth and men with disabilities have access to the funds, reflecting that men over 35 years of age could be marginalized in future.

AGPO is the only affirmative action initiative that does not offer access to finance and support services. Additionally, this initiative is only available to formal women, youth and persons with disability enterprises. This fund has set aside 30 per cent of government procurement contracts for women, persons with disability and the youth to boost their economic empowerment. However, the informal sector is barred from accessing these opportunities because they are not registered.

2.   Literature Review

2.1   Theoretical Foundation

Understanding gender from a theoretical perspective enables one to understand how gender dynamics have evolved and manifested in the social and economic spheres of society. It explains how structures of patriarchy form the basis of power and resource allocation. Additionally, it allows for one to analyse how gender is socially constructed and how it continues to manifest in the economic sphere.

Prior to the industrial revolution in 1760, the central unit of production was the home, where women played a very important role. However, the industrial revolution and capitalism shifted the unit of production outside the home, with men taking up paid jobs while women's work was confined to the private sphere, the home, where they were responsible for caring for the family (Beneria, 1979). The sexual division of labour during the Victorian Age socially constructed the role of men and women in society, men as the 'breadwinners' and women as 'home makers'; which continues to be experienced in the 21st century. Sociologist Emile Durkheim's Functionalist Theory (1863) would argue that the gender inequalities created by social structures and the sexual division of labour are a necessary evil in society because both private and public spheres must coexist and, therefore, the segmentation of women and men's work is an organic process (Perrin, 1995). However, this process of socialization has left women in a disadvantaged position because domestic work is not remunerated as it is private and outside the cash economy (Paltasingh et al., 2014). This sexual division of labour limits the time women have to participate outside the home in the labour market.

Over time, women's participation in work outside the home has increased to supplement the earnings of the 'breadwinner' to support the family. This undertone of women being the 'helper' has restricted their participation in the labour market, pushing them towards undesirable low-paying jobs in the informal sector (Goel et al., 2011). Socialist-feminist theory challenges the functionalism perspective presented earlier, arguing that the traditional division of labour has led to men having more access to resources and privileges in society, which puts them in a dominant position in socio-economic spheres of society (Eisenstein, 1977). Consequently, the long-standing social structures have created an unfair playing field for women as they still continue to engage in work inside and outside the home, which has led to low productivity outside the home due to the double burden.

The Dual Labour Market theory provides an explanation for the gender differences in earnings. It argues that there is a division among workers in the labour market, which results in difference in working environment, differences in wages and market

institutions. The theory postulates that political and economic factors encourage division of labour market into separate sub-segments of the labour market, which are marked with different labour market characteristics (Reich et al., 1973). The separate segments are characterized by different production conditions, terms of employment, productivity of employees, and the characteristics of the workers' jobs. This labour division is related to employee characteristics such as gender, age, and race that define their work environment and lifestyle (Klimczuk, 2016). The informal sector suits women entrepreneurs since it provides flexibility of working hours and proximity of workplaces to their homes (Chen, 2012; Babbitt et al., 2015).

Human capital theory attempts to explain earnings differential in the labour market. It argues that investment in human capital results to increased productivity. Individuals therefore invest in education to have a high return on investments in form of higher earnings. Years of work experience in an occupation is also a form of human capital accumulation (Rauch and Frese, 2000). The theory implies that human capital can be improved through training. While human capital theory represents an individual's view in improving earnings in the labour market, the dual labour market theory explains labour market conditions and restrictions that affect labour market outcomes such as productivity.

2.2   Empirical Literature Review

While gender differentials in wage earnings has been extensively examined in Africa's labour market (Agesa, 1999; Kabubo-Mariara, 2003 in Kenya), Siphambe and Thokweng-Bakwena, 2001 in Botswana), Temesgen, 2006 in Ethiopia and (Comblon, et al., 2017; Mbratana & Fotié, 2017) in Cameroon, analysis on gender productivity gap is relatively unexplored in Africa, save for the agricultural sector (Kinkingninhoun-Medagbe et al., 2010; Kilic et al., 2015; Oseni et al., 2015; Ali et al., 2016; de la O Campos et al., 2016). From the studies, women managed agricultural plots have less productivity compared with men managed plots. The difference in agricultural productivity between the two genders mostly stems from a difference in endowment of factors of production in favour of men.

However, Bardasi et al. (2007), find that in Africa, women-owned enterprises are as productive as men entrepreneurs when measured by value added per worker and total factor productivity, while controlling for the industry in which they work in. In advanced economies, studies show that there is parity in terms of performance in men- and women-owned enterprises. Robb and Watson (2012) while measuring firm's performance through return on assets and closure rate found no gap in performance of women and men-owned enterprises in the United States once gender differences in firm size and risk aversion are controlled for.

Similarly, Sabarwal and Terrell (2008) measuring performance in terms of profit per unit revenue, found no evidence of gender disparity in performance in 26 Eastern Europe and Central Asia countries.

In the informal sector, there are gender differences in the business activities carried out, with men-owned enterprises prevailing over enterprises owned by women (Chen, 2001; Klapper et al., 2016; Valodia, 2017). They explain that this productivity gap is due to the fact that enterprises owned by men and women are concentrated in different sectors; women entrepreneurs being represented in labour intensive sectors such as trade and services, and men in capital-intensive manufacturing industries (Klapper et al., 2016). Additionally, the gender productivity gap found in the informal sector has been attributed to some employment types, mainly casual wage worker and sub-contract worker where women are over-represented (Chen, 2001).

A study by Chirwa (2018) found no significant differences in profit margins between women-owned and men-owned enterprises. He asserts that women-owned enterprises tend to grow more rapidly in terms of employment than men-owned ones. The study also revealed that there are common factors that affect women-owned and men-owned enterprises. However, education was a critical differentiating factor for success. Productivity challenges in the informal sector include high illiteracy levels (Horn, 2014; Mugo, 2012; Huda et al., 2013), especially in the rural areas (Boateng and Josephine, 2012). Kamunge et al. (2014) also emphasize, like many studies, that access to business management information, finance, technology and infrastructure are key inputs that determine the performance of informal enterprises.

Access to finance is a critical factor of production that has the potential to positively affect the performance of informal sector enterprises (Kinyua, 2014). However, access to finance has been flagged as a major barrier to productivity in the informal sector (Huda et al., 2013; Kinyua, 2014; Valodia, 2017). Low access to credit facilities has been found to mostly affect women (Mugo, 2012), with lending terms, conditions and requirements for collateral as a key issue to access to finance.

Unfortunately, access to factors of production is skewed towards one gender. Studies have found that women continue to face many barriers in contributing to and benefiting from development (Boateng and Josephine, 2012). Access to business information such as financing, skills development and access to markets was found to impede women's productivity levels. Despite women being better educated than men, entry into self-employment has been found to be easier for men because they have easier access to basic information (Cowling and Taylor, 2018).

Additional studies have asserted that it is important to understand gender-related factors that influence women entrepreneurship. With this understanding, policy makers will be able to pinpoint the areas of potential and put in place incentive structures that promote women participation in the informal sector (Katwalo and Madichie, 2017). The gap in incentive structures has also been captured by Valodia (2017) who argues that social policies do not reach the 'survivalist' segment of small enterprises, which are mostly women-owned. The 'survivalist' segment of the informal sector emanates from various socio-cultural barriers that have historically affected women. However, Katwalo and Madichie (2017) argue that cultural factors cannot be conclusively used to explain any real or perceived gender differences in the performance of men versus women-owned informal enterprises. The gender productivity gap that exists has been blamed on government failure to put in place gender-specific enablers for them to start up and develop and grow their enterprises.

Other factors that have been found to affect the productivity of the informal sector are access to market and work sites. Studies by Chen (2001) and Huda et al. (2013) find that women are mostly home-based workers or street vendors and do not have access to work sites or access to finance to rent work space in strategic places. In addition, markets lack flexibility in terms of time, meaning that traders cannot operate late at night. Moreover, the insecurity makes it difficult for women to work at night (Kinyanjui, 2013). Kinyua (2014) on the other hand goes further to argue that number of years in operation increases the performance of informal sector enterprises.

The literature reviewed suggests that gender disparity in firm productivity is prevalent in developing economies rather than developed economies. Entrepreneur characteristics, firm characteristics and endowment to factors of production are identified as key determinants of a firm's productivity. In addition, an entrepreneur's risk appetite and the sector a firm's operates in are contributors of productivity gap between men and women. However, little knowledge exists on gender inequalities in the informal sector in the Kenyan context. This study therefore aims to fill that knowledge gap.

2.3   Conceptual Framework

Figure 4: Conceptual framework of informal enterprise productivity
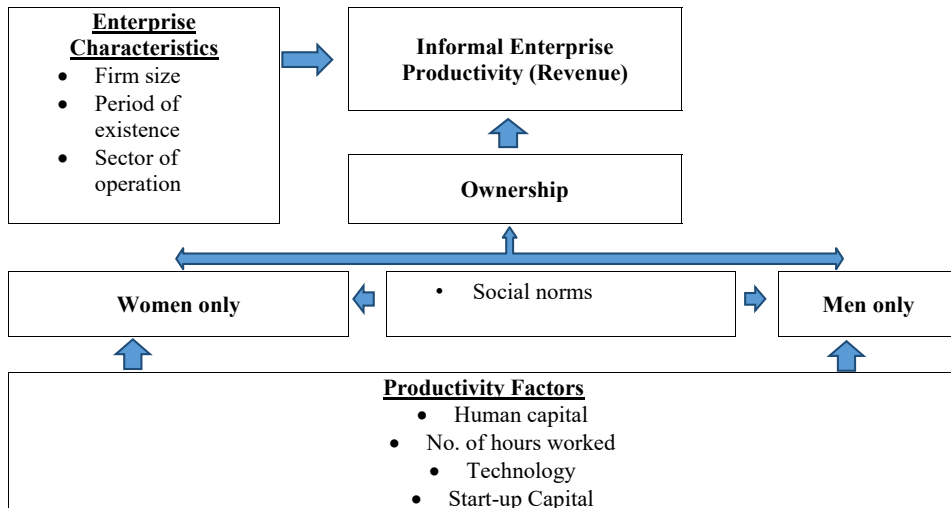
Source: Author's own composition

Figure 4 illustrates the conceptual framework that guides determinants of informal enterprise productivity. From the studies reviewed, revenue, sales and value added per worker have been used to proxy productivity of enterprises. In this paper, *productivity* is defined as the revenue generated from the sale of goods and services per worker in an enterprise. A number of firm and entrepreneur characteristics are commonly used in the literature to understand the determinants of firm productivity. Following the typical production function, the key factor inputs that are an important source of an enterprise productivity include capital, labour and level of technology employed in the enterprise. Employing high capital and more labour increases the productivity of a firm, assuming a constant return to scale for the factor inputs. Adoption of a greater level of technology boosts productivity by improving efficiency of a firm. However, endowment to these factors of production differs across gender due to social norms and legal framework.

Different sectors exhibit different levels of productivity, with labour-intensive sectors such as trade and services being less productive compared to capital intensive manufacturing industries (Klapper et al., 2016).

Besides the factors of production, other factors, including human capital variables (level of education and gender) have also been found to influence a firm's productivity. Gollin et al. (2011) acknowledged education as an important source

of labour productivity. Higher level of education is associated with increased skills/ adoption of efficient practices that in turn increase productivity (Horn, 2014).

Several studies show that women are disadvantaged in entrepreneurship. There are gender differences in the business activities carried out in the informal sector, with men-owned enterprises prevailing over enterprises owned by women (Chen, 2001; Klapper et al., 2016; Valodia, 2017). Access to business information such as financing, skills development and access to markets was found to impede women's productivity levels. Brixiová and Kangoye (2016) note that women entrepreneurs in Swaziland had less startup capital compared to their men counterparts, which in turn affected their entrepreneurial performance. However, Robb and Watson (2012) argue that there is no difference in firm's performance across gender in United States when important demographics such as sector of operation, experience and hours worked are controlled for.

2.4   Analytical Framework

Decomposing gender productivity gap in the informal sector

This paper employs the Oaxaca-Blinder (OB) decomposition technique (Oaxaca, 1973; Blinder, 1973) to identify the contributors of gender productivity gap. The OB decomposition technique is widely used to analyse the contribution of different factors that determine an outcome gap in the labour market (Baye et al., 2016; Fortin et al., 2017; Hara, 2018; Mbratana and Fotié, 2017; Vuluku et al., 2013).

The paper explores productivity gap across women-owned establishments and men-owned establishments. Productivity outcome is measured as the log of an establishment's revenue. The following equation is estimated:

$$Y_i = \beta X_i + \gamma G_i + \varepsilon_i \dots \dots \dots (1)$$

Where Y_i, the dependent variable, is log of revenue for establishments i, X_i is a vector of covariates including establishments' characteristics (gross worth of business, sector of economic activity, period of existence), factor inputs (initial capital, technology), entrepreneur's human capital (years of schooling), hours worked and G_i, a binary variable to control for gender of the establishment's owner. Inclusion of gender dummy variable in the equation is meant to avoid a distortion of decomposition results due to residual group difference reflected in coefficients β.

The OB decomposition technique consists of estimating the equations of productivity for the pooled sample and each gender group, with determinants of an establishment productivity being entrepreneur's characteristics, establishment characteristics and factors inputs. The estimated coefficients from the equations

represent the contribution of covariates in determining productivity of each gender group.

The productivity gap is then decomposed into a component attributed to endowment effect (the portion of productivity gap explained by differences in the mean level of covariates between the two genders). Secondly, it disintegrates productivity gap attributed to structural effect (the portion of the gender productivity gap caused by difference in estimated coefficient of men and women sample from the average return of the pooled sample, respectively).

Taking the equation estimating productivity of an establishment as:

$$Y = \alpha_k^* + \sum_{k=1}^{K} \beta_k^* X_k + \mathcal{E} \dots \dots \dots (2)$$

Gender productivity gap "D" is the mean outcome difference between men and women-owned establishments:

$$D = E(Y_M) - E(Y_F) \dots \dots \dots (3)$$

But the estimated productivity of men and women-owned establishment are given by equations (4) and (5), respectively:

$$E(Y_M) = \alpha_M + \sum_{k=1}^{K} \beta_{Mk} X_{Mk} \dots \dots \dots (4)$$

$$E(Y_F) = \alpha_F + \sum_{k=1}^{K} \beta_{Fk} X_{Fk} \dots \dots \dots (5)$$

Substituting equations (4) and (5) in equation (3):

$$D = \alpha_M + \sum_{k=1}^{K} \beta_{Mk} X_{Mk} - \alpha_F - \sum_{k=1}^{K} \beta_{Fk} X_{Fk} \dots \dots \dots (6)$$

Taking as the vector of coefficients that is obtained from a regression of *Y* that is based on the pooled sample, equation (6) can be rearranged as:

$$D = \sum_{k=1}^{K} \beta_k^* \left[X_{Mk} - X_{Fk} \right] + \left(\propto_M - \propto_k^* \right) + \sum_{k=1}^{K} \left[\beta_k^* - \beta_{Mk} \right] X_{Mk}$$

| Endowment effect | Men structural advantage |

$$+ \left(\propto_F - \propto_k^* \right) + \sum_{k=1}^{K} \left[\beta_{Mk} - \beta_k^* \right] X_{Fk} \dots \dots \dots (7)$$

Women structural advantage

D is the productivity gap decomposed into endowment effect and structural effect, which is broken down further into men and women structural advantage. A structural advantage is exhibited when the coefficients, that is, the returns to the covariates of men and women-owned establishments, are higher than coefficients of the pooled sample.

3.   Data and Descriptive Statistics

This paper used data from the 2016 national Micro, Small and Medium Enterprises (MSME) Survey conducted by the Kenya National Bureau of Statistics (KNBS). The survey included MSMEs both in the formal and informal sector. In the survey, an establishment is regarded to be informal if it is not registered with the Registrar of Companies.

The survey data captures ownership characteristics, enterprise characteristics including licensing and registration, and MSME sectoral economy activity classification according to the International Standards of Industrial Classification (ISIC).

The sample for unlicensed establishments was drawn from a household-based master sampling frame maintained by KNBS. 11,071 household enterprises were successfully interviewed out of a sample size of 14,400 household enterprises, implying a 92.6 per cent response rate.

Ownership of the establishments by gender is grouped in four categories: establishments solely owned by a man, establishments solely owned by a woman, establishments owned by more than one person of the same gender, that is men-men or women-women, and establishments owned by more than one person of the different gender, that is men-women. Taking cognizance that an establishment could have employees of different gender and thus pose a challenge in decomposing gender productivity gap, this paper restricted its sample to sole proprietorships, that is establishments owned and operated by one person. After imposing restrictions above, the final sample was 4,802 informal establishments representing nearly half of the informal establishments in the survey. Of the 4,802 establishments, 2,450 are owned by men, representing 51 per cent of the sample. On the other hand, 2,352 are owned by women, accounting for 49 per cent of the sole-proprietor enterprises. Figure 5 illustrates the distribution of the sole-proprietor enterprises by gender.

Figure 5: Sole proprietors by gender

■ Male ■ Female
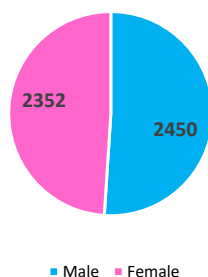
Source: 2016 MSME Survey

The men-owned and women-owned enterprises operate in various sectors: manufacturing, trade, services and agri-business. Out of all the sectors, there were more men-owned enterprises when compared to women-owned in two out of four sectors. Trade recorded 67.3 per cent, the highest sector that enterprises were operating in, with more women-owned enterprises than men-owned enterprises. The services sector followed with 18.6 per cent, with more men-owned enterprises compared to women-owned enterprises. Manufacturing followed closely behind by 13.8 per cent, with more men-owned enterprises compared to women-owned enterprises. Agri-business was the lowest at 0.3 per cent, and there were no gender disparities in terms of number of enterprises.

Figure 6: Sector of operation by gender
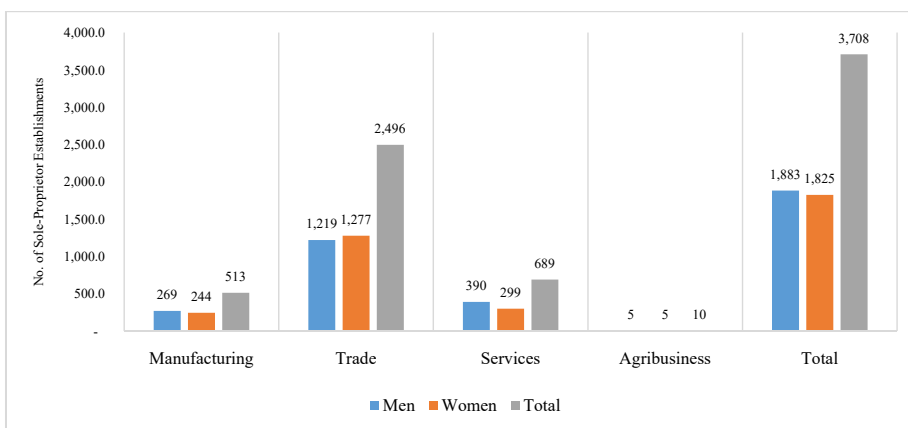
Source: 2016 MSME Survey

The variables used in equation 2 that estimate the effect of determinants of informal enterprises productivity of the pooled sample are defined in Table 2 below, with the dependent variable being revenue of an informal enterprise in log form.

Table 2. Definition of variables

Variable	Definition
Revenue	It is the average net income earned from an enterprise in a month. The unit of measurement is Kenya shillings. It is a proxy of enterprise productivity.
Startup capital	It is the amount of money used to start an enterprise. It is measured in Kenya shillings.
Firm size	It is the current worth of a business measured in Kenyan shillings.
Years of schooling	This is the number of years that an enterprise owner completing his/her highest level of formal education.

Hours worked	It is the number of hours that an enterprise operates in a month. It is derived by multiplying the number of hours an enterprise in a day by the number of days it operates in the week times the number of days it is in operation in a month.
Period of existence	This variable captures the age of an enterprise. It is derived as the difference between an enterprise establishment and the date when MSME data was collected. The period of existence is stated in months.
ICT	This is a binary variable indicating whether an enterprise has an ICT equipment or otherwise. It is a proxy for enterprise adoption of technology.
Sector	This variable captures an enterprise sector of operation. It is constructed through the use of ISIC classification of business activity. The sectors of operation are manufacturing, service, trade and agribusiness,
Gender	It is a binary variable that captures an enterprise owner's gender. An enterprise owner's is either men or women.

From the descriptive statistics in Table 3, the average period of existence of the sampled enterprises was 7.5 years (89.9 months); the mean revenue was 15,534.6; the initial capital sought to start the business was 55,860.7; the mean firm size, based on gross worth, was 191,231.9; the mean years of schooling of the sole-proprietor was 12.5 years; and the average number of hours worked in a month by the enterprises was 256.9 hours.

Table 3: Descriptive statistics

Variable	Observation	Mean	Std Dev	Min	Max
Revenue (Ksh)	3,708.0	15,534.6	19,531.4	0	200,000.0
Initial Capital (Ksh)	3,708.0	55,860.7	102,305.0	200.0	2,200,000.0
Firm size (Gross worth)	3,708.0	191,231.9	297,564.5	500.0	2,500,000.0
Years of schooling	3,708.0	12.5	5.5	0	26.0
Hours worked	3,708.0	256.9	73.5	48.0	476.0
Period of Existence (months)	3,708.0	89.9	82.5	2.0	700.0

Source: Author's computation

From the correlation matrix (Table 4 below), period of existence, initial capital, firm size, hours worked, the sector of operation and gender are statistically significantly correlated to revenue of establishments operating in the informal sector.

Table 4: Correlation matrix for the pooled sample

Pooled Sample	Revenue	Initial Capital	Firm Size	Years of Schooling	Hours worked	Period of Existence	Sector	Gender
Revenue	1.00							
Initial Capital	0.24***	1.00						
Firm Size	0.37***	0.46***	1.00					
Years of Schooling	0.02	-0.01*	-0.01	1.00				
Hours worked	0.17***	0.04**	0.09***	-0.03*	1.00			
Period of Existence	0.03*	-0.09***	0.05*	-0.13*	-0.02	1.00		
Sector	0.04**	0.02	-0.01	0.08***	0.18***	-0.09***	1.00	
Gender	-0.12***	-0.12***	-0.12*	0.02	-0.12***	-0.05***	0.07*	1.00

*** statistically significant at 1%, ** statistically significant at 5%, * statistically significant at 10%

Table 5: Mean value of enterprise and entrepreneur characteristics by gender

Variable	Pooled	Men	Women	Mean difference
Revenue	15,726.0	18,306.0	13,260.0	5,046***
Initial capital	55,267.0	65,610.0	45,377.0	20,233***
Firm size	197,367.0	227,353.0	168,690.0	58,663***
Years of schooling	13.4	13.3	13.5	(0.2)
Hours worked	257.0	267.0	248.0	19***
Period of existence	87.0	92.0	81.0	11***

***statistically significant at 1%

From the reviewed literature, productivity gap is attributed to differences in factor endowments, entrepreneur and establishments characteristics. Looking closer at the mean difference of the enterprises and entrepreneurs characteristics by gender, men-owned enterprises have been in existence longer than women-owned

enterprises by 11 months, and also operate for 19 hours more than women-owned enterprises. Both the mean differences on period of existence and working hours are statistically significant. Revenue of men-owned enterprises is higher than women-owned enterprises by 5,046, with the mean difference being statistically significant as well. The initial capital and firm size (gross worth) of men-owned enterprises are also higher by Ksh 20,233 and Ksh 58,663, respectively. When it comes to the years of schooling, women entrepreneurs registered 0.2 more years of schooling compared to their men counterparts. However, the difference is not statistically significant.

Table 6: Regression results (Dependent variable: log of revenue)

	Pooled Sample	Men-owned establishment	Women-owned establishment
Firm size	0.349***	0.338***	0.359***
	(0.061)	(0.03)	(0.027)
Period of existence	0.019	0.032	0.073***
	(0.021)	(0.031)	(0.027)
Sector of operation (manufacturing)			
Trade	0.334***	0.331***	0.338***
	(0.061)	(0.095)	(0.074)
Service	0.231***	0.137	0.341***
	(0.073)	(0.114)	(0.091)
Agri-business	0.822**	0.242	0.999***
	(0.367)	(0.352)	(0.36)
Initial capital	0.298**	0.3*	0.166**
	(0.017)	(0.024)	(0.023)
Technology (Firm has no ICT equipment)			
Firm has an ICT equipment	0.188***	0.153**	0.208***
	(0.043)	(0.063)	(0.058)

Years of schooling of owner	0.163**	0.122	0.228***
	(0.065)	(0.097)	(0.085)
Hours worked	0.459***	0.432***	0.5***
	(0.068)	(0.11)	(0.079)
Gender (men)			
Women	-0.155***	-	-
	(0.0394)		
Constant	1.766***	2.218***	1.151**
	(0.411)	(0.658)	(0.49)
N	3402	1716	1686
R²	0.297	0.272	0.307

Standard errors in parentheses

***$p < 0.01$, **$p < 0.05$

The table above shows the coefficients of estimated regression of equations 2, 4 and 5 that express the determinants of informal enterprise productivity for the pooled sample of informal enterprises, male-owned informal enterprises and female-owned informal enterprises, respectively. The equations take a semi-log form with the dependent variable and continuous independent variables in the equation being transformed into natural log; that is firm size, initial capital, period of existence, years of schooling and hours worked. Estimated coefficients of the logged continuous variables are interpreted as elasticities.

Estimates of the pooled regression model indicate that gender has a negative and significant effect (-0.155), implying that the productivity of an enterprises reduces by 15.5 per cent as you shift from a man-owned enterprise to a woman-owned enterprise.

An establishment's firm size measured by its gross worth is positively and significantly related to enterprise revenue for both the pooled sample and gender specific sample. A percentage increase in a firm's size increases its productivity by 0.349 per cent for the pooled sample, 0.338 per cent and 0.359 per cent for men-owned and women-owned establishments respectively. A possible explanation to this is that large firms enjoy economies of scale and low variable cost, thus enjoy a price competitive advantage against smaller firms and have higher sales.

An enterprise's period of existence is positively related to enterprise productivity. However, it only has a significant effect in women-owned enterprises. A percentage

increase in an enterprise age owned by a woman increases its productivity by 0.073 per cent other factors held constant. This points to the fact that productivity of the informal sector is low compared to the formal sector because of the survivalist nature of informal firms which are less likely to survive in their nascent stage.

Enterprises with high startup capital have a high return to revenue for both the pooled sample and gender specific sample. A percentage increase in an enterprise startup capital increases its productivity by 0.298 per cent for the pooled sample, 0.3 per cent and 0.166 per cent for men-owned and women-owned establishments, respectively. This finding backs the argument by Grimm et al. (2012) that firms that unlock financial constraints also unlock the potential of high potential informal firms to be more productive and increase their chances of formalization.

Education level, proxied by years of schooling of an enterprise owner is positively and significantly related to enterprise productivity. A percentage increase in year of schooling increases the productivity of an enterprise by 1.63 per cent for the pooled sample. This finding is similar to Kabubo-Mariara (2003) and Baye et al. *(*2016) and is consistent with the human capital theory that postulates that investing in education increases returns in the labour market. However, years of schooling among the male entrepreneurs' sample has no statistically significant effect on their firm's productivity. A possible explanation for this finding could be that the nature of business that men in the informal sector engage in requires gaining of knowledge through apprenticeship, which was not included in determining one's years of schooling in the survey.

The number of hours worked by a sole proprietor is positively and significantly related to enterprise revenue. A percentage increase in working hours a month increases the productivity of an enterprise by 0.459 per cent for the pooled sample, 0.432 per cent and 0.5 per cent for men-owned and women-owned establishments, respectively. This is consistent with findings by Baye et al. (2016) and Mbratana and Fotié (2017). Mbratana and Fotié, (2017) argue that women bare the burden of unpaid work, which constraints them from undertaking economic activities thus contributing to gender pay gap in self employment. According to a World Bank report, women experience 'time poverty' due to the non-market activities they engage, in which are time and labour intensive, and as a result this reduces the availability of time for women to engage in more economically productive activities (World Bank, 2006). The consequence of 'time poverty' is that women are less likely to take full advantage of economic activities to participate in income-generating activities, and it impedes women's ability to expand their capabilities through education and skills development.

Adoption of technology, proxied by an enterprise ownership of ICT equipment, is positively and significantly related to enterprise productivity for both the pooled

sample and gender specific sample. The productivity of an enterprise increases by 18.8 per cent as it shifts from being without an ICT equipment to having an ICT equipment for the pooled sample.

Relative to informal enterprises in the manufacturing sector, those in trade, services and agribusiness have higher productivity in both the pooled sample and women-owned enterprises only, similar to findings by Mbratana and Fotié (2017). Only men-owned enterprises in trade sector have a 33.1 per cent higher productivity compared to those in the manufacturing sector. These findings point to productivity disparities across different informal sectors.

Table 7: Oaxaca-Blinder decomposition of productivity by gender of establishment owner

Panel A: Aggregate decomposition	Coefficient	
Men group value of revenue (log)	9.272*** (0.024)	
Women group value of revenue (log)	8.998*** (0.024)	
Raw gap in value of revenue	0.274*** (0.034)	
Panel B: Detailed decomposition		
	Explained	Structural
Firm size	0.115*** (0.016)	-0.021 (0.339)
Period of Existence	0.005 (0.003)	-0.304** (0.129)
Sector of operation	0.008 (0.004)	-0.134 (0.106)
Initial Capital	0.0157** (0.007)	0.2 (0.028)
Technology	-0.009** (0.004)	-0.001 (0.019)
Years of schooling	-0.001 (0.003)	-0.635** (0.277)
Hours worked	0.044*** (0.008)	-0.091 (0.504)
Constant	-	1.123***
	-	(0.597)
	Explained gap	Unexplained gap
Total	0.16	0.114
% of raw gap	58.4	41.6

Standard errors in parentheses

***$p < 0.01$, **$p < 0.05$

Table 7 shows the Oaxaca-Blinder decomposition of productivity gap of informal enterprises as expressed in equation 7. This approach decomposes the raw productivity gap between men and women-owned enterprises into a component accounting for differences in endowment of covariates and a structural component reflecting differences in returns to endowment for women and men-owned enterprises. The aggregate contribution of endowments is equal to the difference between the raw productivity gap and the remaining gap, once all characteristics in the decomposition are accounted for. This term can be interpreted as the change in the value of revenue that would occur if women-owned enterprises had the same values of endowments as men-owned enterprises. The aggregate unexplained contribution or structural effect is equal to the remaining gap. The sum of unexplained gap is interpreted as the change in revenue of women-owned enterprises that would occur if men and women-owned enterprises had the same returns to endowments.

Men-owned enterprises have a higher productivity at 9.272 (log of revenue) as compared to women-owned enterprises at 8.998. The men-women gap in predicted productivity is 0.274 and the total explained men-women productivity gap is 0.16, which is 58.4 per cent of the raw gap. This suggests that enterprise, entrepreneur and factor inputs characteristics are key in explaining the gender gap in productivity of informal establishments. 41.6 per cent of the gap is unexplained and, therefore, determined by differences in returns to endowments between men and women-owned enterprises. Closing the gap in factor endowments would thus significantly reduce gender differences in informal enterprise productivity.

Raw gender gaps are positive by construction because they are computed as the difference between a "high group" and a "low group". In this study sample, women-owned enterprises correspond to the "low group" because of their low mean in revenue while men-owned enterprises correspond to the "high group". The positive sign of the terms related to explained productivity gap suggests that these differences in endowments are favourable to men than to women. Firm size (0.115) and number of hours worked (0.044) are the biggest contributors to differences in productivity gap followed by startup capital (0.0157). The difference in hours worked across gender in the informal enterprises is likely to be as a result of child care penalty where women have a systematic disadvantage in labour participation due to their primary care giving role (Muizon, 2018). The negative value of technology (-0.009) indicates that women-owned enterprises have an advantage in technology endowment over men-owned enterprises in this sample. Women entrepreneurs have slightly higher years of schooling; however, the advantage does not significantly explain the productivity gap.

From the results, it is worth noting that the negative values in the structural effect under the detailed decomposition signify that women-owned enterprises have a higher return to endowments compared to men-owned enterprises. However, only the returns on an enterprise period of existence and the entrepreneur's years of schooling are significant attributes to productivity gap. This means that women-owned enterprises are more efficient than men-owned enterprises, given the same endowments.

4.   Conclusion and Policy Recommendations

The informal sector is a major employer of new labour market entrants in Kenya. Data shows that new jobs are increasingly created in the informal sector compared to the formal sector. Even though the informal sector creates a buffer for the unemployed to engage in economic livelihoods, its low productivity compared to the formal sector has raised concerns about its potential to boost economic growth. Furthermore, the World Bank report on informal enterprises in Kenya reveals that there exists a gender productivity gap in Kenya's informal enterprises in favour of men.

This paper therefore sought to identify gender dynamics that affect productivity in Kenya's informal sector. Using the 2016 MSME Survey data, productivity factors of the informal sector were identified and the productivity gap between men and women-owned enterprises was decomposed using the Oaxaca Blinder decomposition technique. From the findings, men-owned enterprises have a higher productivity compared to women-owned enterprises. 52 per cent of the gender gap is attributed to endowment effect while the remaining 48 per cent is due to structural effect. The gap in productivity is mostly attributed to differences in endowments of factors of production and enterprise characteristics. Men-owned enterprises have longer working hours and higher gross worth compared to those owned by women, making them have a higher productivity. On the contrary, women-owned enterprises have a higher endowment in technology, which gives them a productivity advantage. Women-owned enterprises have higher returns to factor endowments but only period of an enterprise existence and the enterprise's sector of operation that significantly contribute to productivity gap.

To bridge the gender productivity gap, there is need for affirmative action initiatives to expand beyond finances. From findings of this paper, women entrepreneurs' source of capital is mostly SACCOs and micro-finance institutions (Appendix 1). Therefore, emphasis should be placed to encourage formation of SACCOs, creating partnerships between SACCOs and affirmative action funds to accommodate women-owned sole proprietors in the informal sector.

All affirmative action funds should go beyond finance and incorporate business development support, capacity building, marketing, and mentorship to improve women entrepreneurial skills. There is need for gender targeted approach in business development training to women entrepreneurs to impart skills on business networking, enhance entrepreneurial mindset and encourage mentorship among peer entrepreneurs to improve their entrepreneurial skills. Moreover, business training should be offered in men-dominated sectors, so as to encourage women to venture into more productive sectors.

To address the time constraint that women face due to the traditional sexual division of labour, sensitization programmes should be carried out to increase men engagement in child care, thus easing women participation in economic activities. In addition, promotion of women entrepreneurship through provision of safe and secure working environment through building market centres and street lighting projects can increase their working hours, since women entrepreneurs operate more on temporary or no structure at all compared to their men counterparts (Appendix 2).

To encourage adoption of technology among informal enterprises, institutions mandated to advance technology should organize trade fairs and exhibitions for

informal enterprises to showcase benefits of technology adoption among informal enterprises. Linkage between informal enterprises and technical training institutions need to be created through apprenticeship programmes on acquiring skills on new technology. Enhancing electricity access countrywide will further enable informal establishments' use of electric powered machinery.

Appendices

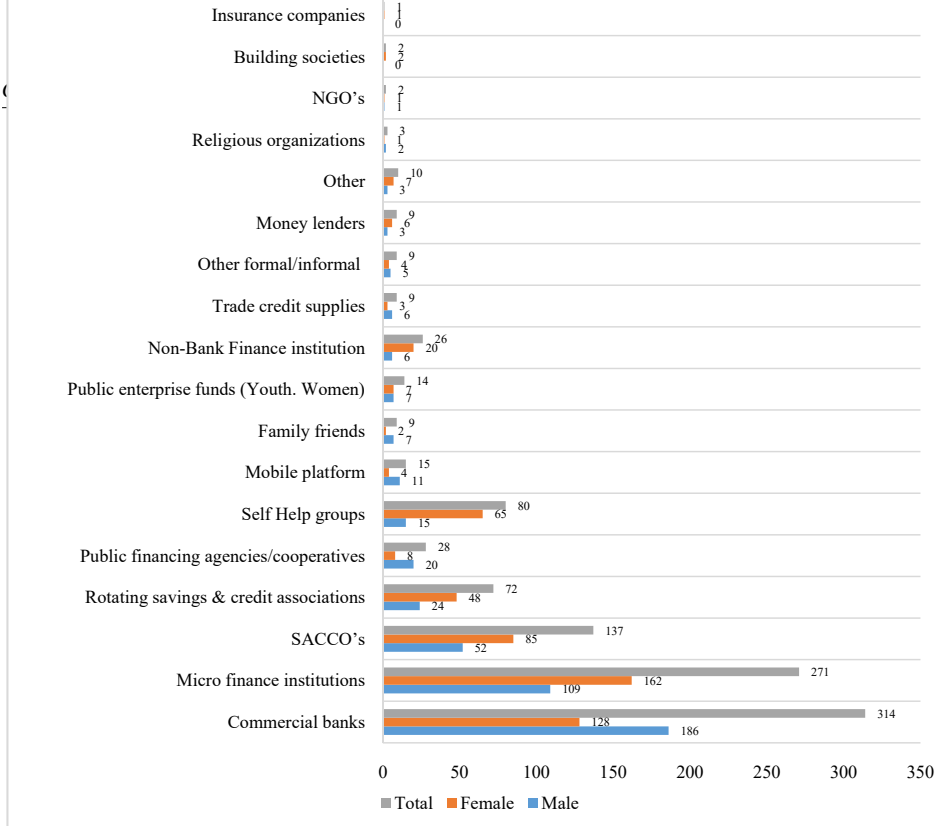**Appendix 1: Main source of capital by gender**

References

Agesa, R. U. (1999), "The urban gender wage gap in an African country: Findings from Kenya", *Canadian Journal of Development Studies*, *20*(1): 59–76.

Ali, D., Bowen, D., Deininger, K. and Duponchel, M. (2016), "Investigating the gender gap in agricultural productivity: Evidence from Uganda", *World Development*, 87: 152–170.

Bardasi, E., Blackden, C. M. and Guzman, J. C. (2007), "Gender, entrepreneurship, and competitiveness in Africa", In *Africa Competitiveness Report* (pp. 69–85). Washington DC: World Bank.

Baye, F. M., Epo, B. N. and Ndenzako, J. (2016), "Wage differentials in Cameroon: A gendered analysis", *African Development Review*, 28(1): 75–91.

Benería, L. (1979), "Reproduction, production and the sexual division of labour", *Cambridge Journal of Economics*, 3(3): 203-225.

Boateng, Peter and Ganu, Josephine (2012), "Harnessing the potentials of informal sector women for development in Ghana", *Journal of Strategic Innovation and Sustainability*, 8(2): 46-61.

Brixiová, Z. and Kangoye, T. (2016), "Gender and constraints to entrepreneurship in Africa: New evidence from Swaziland", *Journal of Business Venturing Insights*, 5: 1–8.

Chen, M. A. (2001), "Women and informality: A global picture, the global movement", *SAIS Review*, 21(1),71-82.

Chirwa, E. W. (2018), "Effects of gender on the performance of micro and small enterprises in Malawi", *Development Southern Africa*, 25(3): 347-362.

Cohoon, Joanne , Wadhwa, Vivek and Mitchell, Lesa (2010), Are successful women entrepreneurs different from men? Online: https://www.kauffman.org/-/media/kauffman_org/research-reports-and-covers/2009/07/successful_women_entrepreneurs_510.pdf.

Comblon, V., Robilliard, A. and Roubaud, F. (2017), *Gender analysis of labour market outcomes in Sub-Saharan Africa: Recent evidence from Cameroon and Mali* (No. 16).

de la O Campos, A. P., Covarrubias, K. A. and Patron, A. P. (2016), "How does the choice of the gender indicator affect the analysis of gender differences in agricultural productivity? Evidence from Uganda", *World Development*, *77*: 17–33.

Fortin, N. M., Bell, B. and Böhm, M. (2017), "Top earnings inequality and the gender pay gap : Canada, Sweden, and the United Kingdom", *Labour Economics*, *47* (May): 107–123.

Goel, Geetika, Singh, Tripti and Gupta, Anvita (2011), Women working in informal sector in India: A saga of lopsided utilization of human capital. Retrieved from https://www.researchgate.net/publication/266806200_Women_Working_in_Informal_Sector_in_India_A_saga_of_Lopsided_Utilization_of_Human_Capital.

Gollin, D., Lagakos, D. and Waugh, M. E. (2011), The agricultural productivity gap in developing countries (No. F-5019-NOC-1). Working Paper. London.

Grimm, M., Knorringa, P. and Lay, J. (2012), "Constrained gazelles: High potentials in West Africa's Informal Economy", *World Development* (Vol. 40).

Hara, H. (2018), "The gender wage gap across the wage distribution in Japan", *Within and Labour Economics*, 53: 213–229.

Horn, A. (2014), "Who's out there? A profile of informal traders in four South African city central business districts", *Town and Regional Planning*, 59: 1-6.

Huda, S. S., Alam, M. S. and Khan, M. Y. (2013), "A comparative study of women entrepreneurs in formal and informal economy: A study of Dhaka City", *Asian Journal of Business Management*, 1(1): 19-23.

International Labour Organization (2018), Online: http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/publication/wcms_626831.pdf.

International Labour Organization (2018), *Women and men in the informal economy: A statistical picture*. Third edition. Online: https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/publication/wcms_626831.pdf.

International Labour Organization (2007), Online: https://www.ilo.org/empent/areas/entrepreneurship-and-enterprise-development/lang--en/index.htm.

Kabubo-Mariara, J. (2003), Wage determination and the gender wage gap in Kenya: Any evidence of gender discrimination?. AERC Research Paper 132, Nairobi, Kenya.

Katwalo, A. M. and Madichie, N. O. (2008), "Entrepreneurial and cultural dynamics: A gender kaleidoscope of Ugandan micro-enterprises",

International Journal of Entrepreneurship and Small Business, 5(3-4): 337-348.

Kenya National Bureau of Statistics (2019), Economic Survey 2019. Online: https://www.knbs.or.ke/download/economic-survey-2019/.

Kenya National Bureau of Statistics (2018), The 2015/16 Kenya Integrated Household Budget Survey: Labour Force Basic Report. Online: https://www.knbs.or.ke/download/labour-force-basic-report/

Kenya National Bureau of Statistics (2016), Micro, Small and Medium Enterprises (MSME) Survey: Basic Report. Online: https://www.knbs.or.ke/2016-micro-small-and-medium-enterprises-msme-survey-basic-report-2/.

Kinkingninhoun-Medagbe, F. M., Diagne, A., Simtowe, F., Agboh-Noameshie, A. R. and Adegbola, P. Y. (2010), "Gender discrimination and its impact on income, productivity, and technical efficiency: Evidence from Benin", *Agriculture and Human Values*, 27: 57–69.

Kilic, T., Palacios-López, A. and Goldstein, M. (2015). "Caught in a productivity trap: A distributional perspective on gender differences in Malawian agriculture", *World Development*, 70: 416–463.

Kinyanjui, Mary N. (2013), *Women and the informal economy in urban Africa: From the margins to the centre*. London: Zed Books.

Klapper, L. F. and Parker, S. C. (2016), "Gender and the business environment for new firm creation", *World Bank Research Observer*, 26(2): 237-257.

Klimczuk, Andrzej and Klimczuk-Kochańska, Magdalena (2016), *Dual Labour Market*. 10.1002/9781118663219.wbegss529. Retrieved from https://www.researchgate.net/publication/301898815_Dual_Labor_Market.

La Porta, R. and Shleifer, A. (2008), The unofficial economy and economic development. NBER Working Paper series No. 14520. Cambridge, MA 0213.

La Porta, R. and Shleifer, A. (2014), "Informality and development in developing countries", *Journal of Economic Perspectives*, 28(3): 109-126.

Mbratana, T. and Fotié, A. K. (2017), "Investigating gender wage gap in Employment: A microeconometric type-analysis for Cameroon" *International Journal of Social Economics,* 1–29.

Mugo, K. (2012), "Factors affecting women entrepreneurs' performance in Central Business District (CBD) of the city of Nairobi", *International Journal of Social Sciences and Entrepreneurship*, 1(7): 377-396.

Muizon, M. J. De. (2018), "Why do married women work less in the UK than in France ?" *Labour Economics*, *51*, 86–96.

Nagler, P. and Naudé, W. (2014). Non-farm enterprises in rural Africa. New Empirical evidence (No. 7066). Policy Research Working Paper. https://doi.org/10.1596/978-1-4648-1134-0_ch9.

Oaxaca, R. L. (1973), "Male-female wage differentials in urban labour markets", *International Economic Review*, 14(3): 693–709.

Oseni, G., Corral, P., Goldstein, M. and Winters, P. (2015), "Explaining gender differentials in agricultural production in Nigeria", *Agricultural Economics*, 46, 285–310.

Paltasingh, T. and Lingam, L. (2014), "Production and reproduction in feminism: Ideas, perspectives and concepts", *IIM Kozhikode Society and Management Review*, 3(1): 45–53. Retrieved from https://doi.org/10.1177/2277975214523665.

Perrin, R. (1995), "Émile Durkheim's "Division of Labour" and the shadow of Herbert Spencer", *The Sociological Quarterly*, 36(4), 791-808.

Rauch, A. and Frese, M. (2000), "Psychological approaches to entrepreneurial success : A general model and an overview of findings", *International Review of Industrial and Organizational Psychology*, 15: 101–142.

Robb, A. M. and Watson, J. (2012), "Gender differences in firm performance: Evidence from new ventures in the United States" *Journal of Business Venturing*, 27(5): 544–558.

Sabarwal, S. and Terrell, K. (2008), Does gender matter for firm performance? Evidence from Eastern Europe and Central Asia (No. 4705). Policy Research Working Paper. https://doi.org/10.1111/j.0042-7092.2007.00700.x.

Siphambe, H. K. and Thokweng Bakwena, M. (2001), "The wage gap between men and women in Botswana's formal labour market", *Journal of African Economies*, 10(2), 127–142. https://doi.org/10.1093/jae/10.2.127.

Temesgen, T. (2006), "Decomposing gender wage differentials in urban Ethiopia: Evidence from linked employer–employee (LEE) manufacturing survey data", *Global Economic Review*, 35(1), 43–66. https://doi.org/10.1080/12265080500537250.

Valodia, I. (2011), "Economic policy and women's informal work in South Africa", *Development and Change*, 32(5): 871-892.

Vuluku, G., Wambugu, A. and Moyi, E. (2013), "Unemployment and underemployment in Kenya: A gender gap analysis", *Economics*, 2(2): 7–16. https://doi.org/10.11648/j.eco.20130202.11.

World Bank (2006), Gender, time use, and poverty in Sub-Saharan Africa. World Bank Working Paper No. 73. Washington, DC: World Bank. Retrieved from http://documents.worldbank.org/curated/en/473591467990333534/ Gender-time-use-and-poverty-in-Sub-Saharan-Africa.

World Bank (2016), *Informal enterprises in Kenya*. Nairobi: World Bank Group Trade & Competitiveness

World Bank (2019), Profiting from parity: Unlocking the potential of women's business in Africa. Washington, DC: World Bank. Retrieved from https://openknowledge.worldbank.org/handle/10986/31421 License: CC BY 3.0 IGO.

The chart shows a horizontal bar graph with categories (from top to bottom) and values for Total, Female, Male:

Source	Total	Female	Male
Insurance companies	1		0
Building societies	2	2	0
NGO's	2		1
Religious organizations	3	1	2
Other	10	7	3
Money lenders	9	6	3
Other formal/informal	9	4	5
Trade credit supplies	9	3	6
Non-Bank Finance institution	26	20	6
Public enterprise funds (Youth. Women)	14	7	7
Family friends	9	2	7
Mobile platform	15	4	11
Self Help groups	80	65	15
Public financing agencies/cooperatives	28	8	20
Rotating savings & credit associations	72	48	24
SACCO's	137	85	52
Micro finance institutions	271	162	109
Commercial banks	314	128	186

Source: 2016 MSME Survey

Of the enterprises sampled, the top three major sources of initial funding was from commercial banks at 31.1 per cent, followed by micro-finance institutions at 26.8 per cent and SACCOs at 13.6 per cent, signalling that majority of sole proprietors rely on loans from formal financial institutions as a financing mechanism. The top three sources of initial capital in which men-owned enterprises were more than women-owned are commercial banking institutions, public financing agencies/ cooperatives and mobile platforms. On the other hand, women-owned enterprises top three sources of initial capital, in which they dominated over men-owned, are micro-finance institutions, SACCOs and self-help groups.

Appendix 2: Work site structure by gender

Y-axis: % of Sole-Proprietor Enterprises

Category	Male	Female	Total
Permanent	63.1%	66.8%	64.9%
Semi-permanent	26.9%	21.5%	24.2%
Temporary	7.3%	8.6%	8.0%
No structure/open	2.6%	2.9%	2.8%
Vehicle and Other	0.1%	0.2%	0.1%

Source: 2016 MSME Survey   ■ Male ■ Female ■ Total
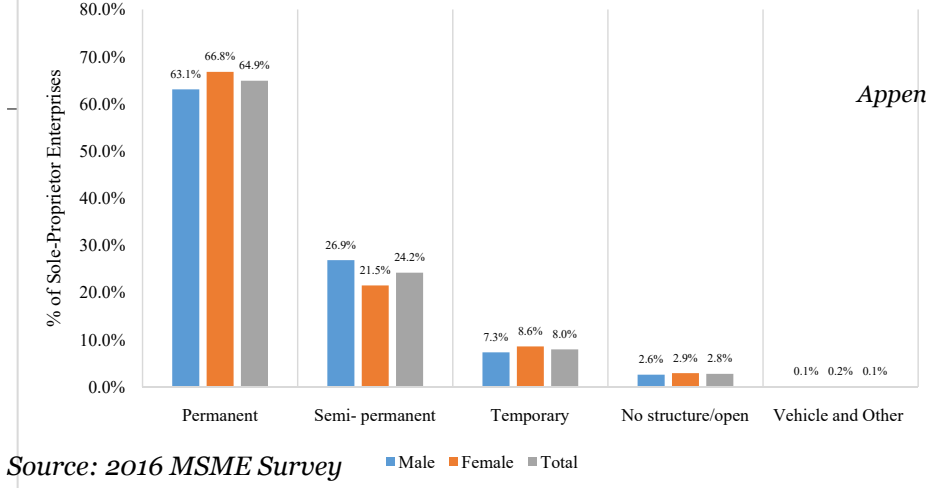
From the pooled sample, majority of the sole proprietor enterprises worked out of permanent structures. When compared across gender, 68.8 per cent women-owned enterprises were in permanent structures, higher than men-owned enterprises at 63.1 per cent. Men-owned enterprises had more semi-permanent structures than women-owned enterprises, reporting 26.9 per cent and 21.5 per cent, respectively. Women-owned enterprises were also found to dominate in temporary structures with 8.6 percent versus men who recorded 7.3 per cent. More women-owned enterprises were found to have no structure/open and working from their vehicle/other locations.