

Characteristics of Firms in Botswana's Informal Economy

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Abstract

Botswana has a large informal economy which continues to grow at a rapid rate. The Government recognises the importance of the sector in reducing unemployment and poverty. The objective of this paper is to empirically identify the characteristics of the firms in Botswana's informal economy. A binary logistic regression model is used to model the characteristics of Botswana's informal firms, and data employed came from the 2015/16 Botswana Multi-Topic Household Survey (BMTHS). Findings indicate that informal firms in Botswana are likely to be situated in rural areas, they operate in their own households, as sole proprietors. Results further depict that, firms that did not need a loan when starting up are more likely to be informal, than businesses that used household savings or sold assets to start the business. Furthermore, it was also revealed that informal firms are less likely to have small businesses and institutions as the main buyer of their goods and services, as compared to individual buyers. The paper advocates for a policy that is tailor made for the informal sector, to address the specific challenges the sector faces. Government needs to boost the business environment in rural areas, to allow for growth of firms, and create more jobs.

Key Words: Informal Economy, Logistic Regression, Firms

1. Introduction

The informal economy is multi-faceted, diverse in nature and is growing at a rapid rate in developing countries. Literature characterises the informal economy by many names, such as; the shadow economy, black economy and hidden economy. These names signify the undetected and hidden activities that take place within the sector. The informal economy can involve legal and illegal activities, but this study focuses only on legal activities that, if recorded, would contribute towards the Gross Domestic Product (GDP) of the country.

The literature indicates both the positives and negatives of an informal economy. The informal economy impacts on productivity and growth of an economy, as firms in this sector are said to be less productive and do not reach their full potential. Firms in the sector limit their size (to avoid being detected) and operate at below optimal scale of efficiency and use less advanced technologies (Farazi, 2014; Andrews et al., 2011; Dabla-Norris et al., 2007). The sector is also reported to employ unskilled labour and pay low wages, as workers in this sector are vulnerable and, in most cases, have limited bargaining power against their employers. Informal sector workers lack access to pensions,

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employment protection and insurance, which are important, as they provide security in a worker's older years (Perry et al., 2007).

Informal sector firms have limited access to finance from formal financial institutions. This limits the growth of the firms as they are unable to invest in physical capital, and research & development, to further enhance their products and services (Andrews et al., 2011). The cost advantages for firms operating in the informal sector, are that they evade tax, and hence, are able to survive in business despite the below optimal productivity levels.

Research has shown that informal activities contribute largely to employment; and in developing countries these activities can absorb around 60 percent of the non-agricultural labour force (International Labour Organisation, 2013). Furthermore, the informal economy provides livelihood for a huge portion of the population. According to Schneider et al., (2010), the informal economy contributes around 40-50 percent to GDP and overall economic activity.

In 2017, Medina et al., (2017), found that Sub-Saharan Africa had the largest informal economy in the world. IFC (2012) estimated that around 80 percent of Small, Medium and Micro Enterprises (SMMEs) are informal in developing countries. Botswana's informal economy has increased significantly over the years by over 160 percent, from 2007 to 2016 (Statistics Botswana, 2018). The Government of Botswana recognises the importance of the sector as a driving force in the reduction of unemployment and poverty, and has made efforts through policies and strategies to develop and grow small businesses. The National Entrepreneurship Policy (2019), recognises that SMMEs and the informal sector are intertwined, and Government commits to addressing the needs of the sector in all activities and initiatives for SMME development. However, the majority (80 percent) of firms are said to fail within the first 3 years of operation, which is a serious concern for the Government considering all efforts that have been made to develop small businesses in the country (Mannathoko, 2011).

The vital question that the country should address is whether enough is being done to develop the informal economy. Vision 2036 makes mention of the significant role the sector plays in the economy, and emphasises the need for the development of support structures to encourage businesses in the sector to be better organised and formalised. Furthermore, the Vision desires to reform the legal and regulatory compliance measures, including tax, in order to lessen the sectors burden. Scholars who

have studied Botswana's informal economy believe that, the sector is not getting the much needed institutional support for it to flourish and grow (Buhlebenkosi et al., 2013; Menyah, 2009). Even though informal business development is mentioned in some policies and initiatives, e.g. National Entrepreneurship Policy (NEP), Vision 2036, and the National Development Plans (NDPs), they may not sufficiently develop informal firms as they are not the main focus in these policies.

The informal economy is an under-researched area, mainly because it is seen as a grey area where a lot of activities are hidden, and hence, difficult to measure. Whether researchers or policy makers view the informal economy as a driver of growth, or as a burden to the economy, it is important to explore the different dynamics and characteristics of the informal economies (Medina and Schneider, 2018; Farazi, 2014; Andrews et al., 2011 and Taymaz, 2009).

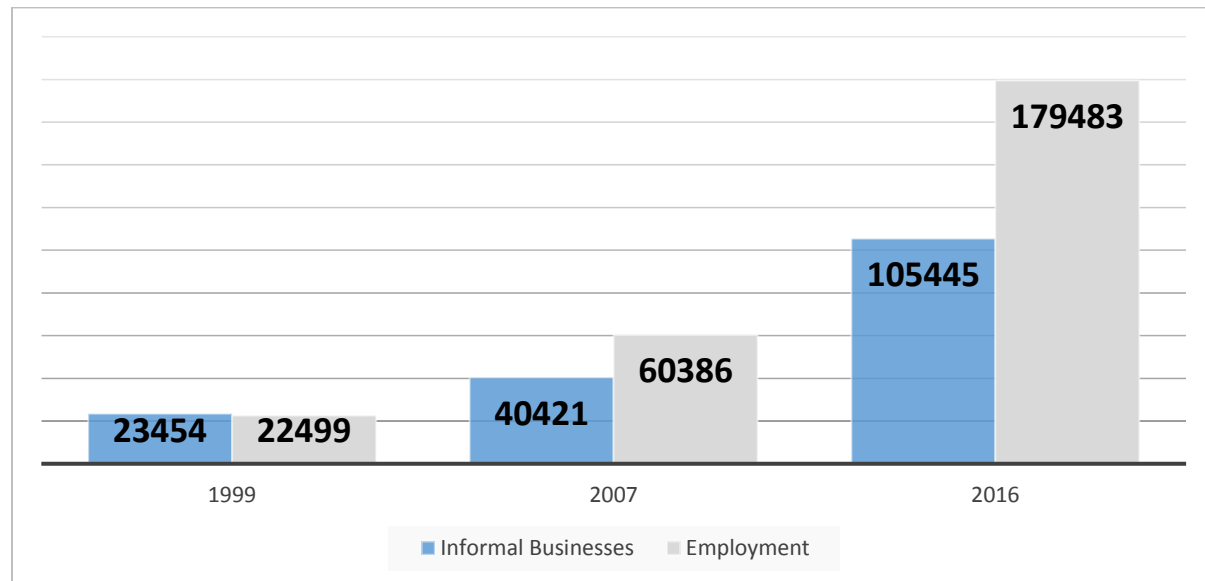
Vision 2036 highlights, that there is a need for data collection and analysis on the contribution of the sector to the economy, and the activities in the sector. The data would be used to better inform policy, institutional, legal and regulatory framework; and to better support the sector. Few studies have investigated Botswana's informal economy (Menyah, 2009; and Buhlenkosi' 2013). However, no study has undertaken an empirical analysis to investigate the characteristics of firms in Botswana's informal economy. Therefore, the rational of this research is to fill the gap of lack of understanding and knowledge of the informal economy in Botswana. It explores the dynamics of firms in Botswana's informal economy, and identifies the firm characteristics and compares them to formal firms. The results of this paper are expected to inform policy and regulatory framework directed at the informal economy, and also add to the existing literature.

1.1 Informal Sector and Policy Context in Botswana

Over the past decade it has become clear that SMMEs play a very vital role in job creation, income generation and improving the standard of living in many countries. In Botswana, there has been a rapid increase in the size of informal businesses. Several surveys have been undertaken by Statistics Botswana over the years that have collected data on informal sector businesses, and they date as far back as the early 1980's. The latest surveys that capture data on informal sector businesses are the; 1999 Informal Sector Survey, the 2007 Informal Sector Survey (ISS) and the 2016 Botswana Multi-Topic Household Survey (BMTHS). According to CSO (2007), from 1999 to 2007 the number of informal firms increased from 23454 to 40421, this is a growth of 72.3 percent. From 2007 to 2016

informal businesses grew by 161 percent from 40421 to 105445 (Statistics Botswana, 2018). Figure 1 further shows the employment growth of the informal sector, and we see that employment in the sector has grown tremendously.

Figure 1: Informal Businesses and their Employment (1999, 2007 and 2016).



Source: 1999 ISS, 2007 ISS and 2016 BMTHS (Statistics Botswana).

Informal firms face many challenges that hinder their growth and development. Some of these challenges are a lack of finance, lack of managerial skills and access to markets (Mutoko, 2014). Botswana Government has recognised the importance of the informal economy in tackling some of the socio-economic challenges the country faces, such as the high unemployment rate, which has recently increased from 17.6 percent in 2016 to 20.7 percent in 2019 (Statistics Botswana, 2020). This recognition of the informal firms by the state has been evident in its policies, strategies and development plans. National Development Plan 5 (NDP 5) emphasises that higher incomes in the long run, will depend on availability of more productive work for Botswana, which includes work in both the formal and informal sectors as, they need expansion in terms of new opportunities and a more vibrant business environment (Government of Botswana, 1980). NDP 10, also noted that the informal sector provides the needed self-employment platform but working conditions are substandard in the sector (Government of Botswana, 2010). The current plan, NDP 11, highlights that it is important to develop diversified sources of economic growth and human capital

development, and these can only be achieved through having an entrepreneurial culture, and environment in the country (Government of Botswana, 2017). Vision 2036, also accentuates the importance of the sector, and boldly states that the necessary structures will be put in place to support the informal sector so that it is organised, and firms in the sector are ultimately formalised (Government of Botswana, 2016).

A welcome initiative in 2019 by the current president Dr. Eric Mkgweetsi Masisi, is that Government now allows business owners to operate their businesses from the comfort of their homes, without the requirement of a licence. This is done to further improve ease of doing business for Batswana, as Government aims to reduce excessive, and unnecessary regulation in the business environment (Omondi, 2019, August 12).

The Local Enterprise Authority (LEA) has also played a huge role in the growth of informal firms, as it was formed and tasked with developing small businesses in the country (Government of Botswana, 2019). Another explanation for the rapid increase in these firms is mostly due to the low rate of growth in formal employment, which has caused a surge in informal employment and alternative means of making a living (Statistics Botswana, 2018).

There are policies, strategies and regulations that are put in place to aid in the development of firms in the country, especially small businesses, a few are briefly discussed below:

2019 National Entrepreneurship Policy (NEP), is one of the latest policies which has replaced the 1998 Small, Medium and Micro Enterprise Policy, its main focus is on development of innovative-opportunity driven entrepreneurs and SMME entrepreneurs. The NEP recognises that the informal sector and SMMEs are intertwined, and aims to mainstream the needs of the sector in all initiatives, programmes and activities for SMMEs.

2014 Revised Industrial Development Policy, is a leading policy that guides the path of industry and industrial growth in directing economic development. The policy aims to expand the country's industrial base through developing industries that are diversified, sustainable and globally competitive. It also focuses on export-led growth, and achieving industrial growth by also exploring other sectors' potential. The informal sector is where most firms start-up before transitioning to the formal sector,

once they are developed and able to sustain themselves. This policy focuses on industrial growth and encompasses all firms whether formal or informal.

2012 Citizen Economic Empowerment Policy (CEEP), has a mandate to empower citizens and make sure that all citizens are encompassed in the development of the economy. The policy has 8 pillars, but those that are more aligned to the sector are: enhancing global competitiveness through empowerment and partnerships; improving empowerment through procurement and licensing; and transforming the economy to be private sector-led. Any firm whether formal or informal should be aligned to these pillars. However, with informal firms it may be a challenge to achieve these, as just entering the export market requires quality standards that informal firms may not have the resources to obtain in their current state.

2011 Economic Diversification Drive (EDD) Strategy, aims at promoting private sector development, so that it does not rely heavily on the Government. The strategy has the EDD short term aspect, which aims to take advantage of Government purchasing power in order to boost local procurement. The EDD medium to long term strategy focuses on developing globally competitive firms, diversifying exports and export markets, developing goods and services of high standards for local and international markets, and to have an enabling environment for entrepreneurship culture. This initiative is not specific towards informal sector promotion and does not take into account the unique needs of firms in the informal sector.

Industrial Development Act, Companies Act and Liquor Trading Act; are some of the legal instruments that are meant to also contribute in the development of small businesses. There is also the institutional framework, that supports small businesses, and is meant to implement strategies and policies that have been put in place, such as; Business Botswana, the Citizen Entrepreneurial Development Agency (CEDA), LEA, the Ministry of Investment Trade and Industry (MITI), Ministry of Youth, Sport and Culture Development (MYSCD), the Botswana Investment and Trade Centre (BITC). These institutions support firms by providing financial assistance, licencing, business development services (through screening, business plan facilitation, training and mentoring), identifying business opportunities for existing and future SMMEs, and promoting domestic and international linkages, among other things.

These policies and strategies have been put in place to assist in SMME growth and development, and the institutional framework is meant to implement policy and support entrepreneurship and business development. However, scholars who have studied Botswana's informal economy believe that the sector is not getting the much needed institutional support for it to flourish and grow (Buhlebenkosi et al., 2013; Menyah, 2009). Menyah (2009), highlights the importance of policies in place for SMMEs that are not specific to the informal sector, but also do not exclude it either. Adike (2018), highlights that institutional voids can also play a large role in development of the sector. Menyah (2009), advocates for a policy that is sector specific that would ensure the development of those in the sector, as currently Botswana has policies that are holistic to all businesses (mentioned above). Yet, the informal sector has issues that need unique attention; and the current policies may not adequately address them.

2. Review of Literature

2.1 Defining and Measuring the Informal Sector

The informal economy is present in most countries, both developing and developed. However, in developing countries an informal economy is seen as a norm (Cling et al., 2017). According to the literature, the origins and causes of informality are prevalent from three leading schools of thought. These are the dualist approach, the legalist (or orthodox) approach and the structuralist approach. The dualist approach stems from a dual labour market model, where the informal economy is considered a subsistence economy that survives only on the basis that the formal economy is not able to create enough jobs in the economy (Cling et al., 2017; Harris and Todaro, 1970). The legalist approach focuses more on micro firms operating informally, in order to avoid complying with economic regulations such as taxes, social security, etc. (De Soto, 1989). The structuralist approach is based on the notion of the formal and informal firms being interdependent. In this approach, the informal sector is inferior to the formal sector, in that the informal sector provides cheap labour and products to the formal sector and increases competitiveness in the economy (Portes et al., 1989).

In the literature, informality has been a difficult concept to define. There has been a wide range of definitions used to measure and define informality. Andrews et al. (2011), emphasises that the definition an author uses should be based on motivation and policy concern of the research, as well as the availability of data. Medina and Schneider (2018), defines the informal economy as all the economic activities hidden from official authorities for financial, regulatory and institutional reasons.

An informal economy can also be defined as the diversified set of economic activities, enterprises, jobs and workers that are not regulated or protected by the state (Chen and Zhun, 2017).

Taymaz (2014), categorises informality in two separate groups as defined by the International Labour Organisation (ILO). Informality can be defined either by market values, where firm characteristics and working conditions define the sector, or by the legal status of the activity, where the activity is viewed as legal, but not legally registered or recorded. Smith (1994), defines the informal economy as market-based production of goods and services that are not detected in the GDP estimations, whether legal or illegal. In most definitions, there is some commonality in that the activities in the sector are undetected and not regulated by local authorities; and those who participate in the activities try to avoid the burden of tax, but end up forgoing the services and protection that the state could provide. Bulmer (2018), has identified a few criteria for measuring informality, through the reviewing of different studies in literature. There are five measurements of informality that this author identifies. These are: i) the lack of registration of a firm with the registrar of companies or tax authorities; ii) the lack of welfare for workers as workers are not provided with social insurance and labour protection; iii) firm size, usually those with less than five employees, is an indicator for turnover, productivity and profit margins, these are assumed to be low for informal firms; iv) output levels or productivity threshold, where firms that make a turnover or profit of below a certain amount would be considered informal, this threshold could be aligned to the turnover threshold of micro and small enterprises for a country; and v) lastly the physical location of a firm can be a criteria for differentiating a formal from an informal firm, those firms that operate in the household or in living premises can be considered as informal. Farazi (2014), defines an informal firm as one that is not registered with the registration office, municipality or tax authority. Although this is a very simple definition, and may result in loss of information on the firms being studied, the author chose it intentionally in order to facilitate standardisation when doing comparisons with other countries.

Statistics Botswana uses four features to define an informal firm. Any firm that does not have the following requirements is considered informal; not being well registered, has no formal accounts, has less than 5 employees and operates in the household. This study chose to only use two features from

this definition, which are not being well registered² and not having formal accounts. The author chose to omit the other features, because Government has recently allowed firms to operate in their houses, so whether a firm is formal or informal firm it is allowed to operate in the household. The other omitted feature is that of having less than 5 employees, because from the data, a large majority of firms in Botswana employ less than 5 employees and with technological advancements a firm could have few employees but be very successful and have a significant turnover.

2.2 Empirical Literature

Over the years there has been a growing interest in the informal economy, as it is considered the growth engine of the economy. Many researchers have tried to better understand the informal economy in terms of the size of the sector, its role in the economic development as well as the characteristics of the firms in the sector (Medina and Schneider, 2018; Cling et al., 2017; Chuc et al., 2014; Farazi, 2014; Andrews et al., 2011; Menyah, 2009;). Many empirical studies have been conducted to try and better understand the informal economy; and conclusions show that different countries have different features or characteristics of their informal economies. Some studies have been conducted at a macroeconomic level and others at a microeconomic level. The latter is the focus of this study and hence, the literature review is on the micro level studies.

2.2.1 Reasons for being Informal

Several studies have tried to better understand the key drivers of informality using different methodologies, definitions of informality and explanatory variables (Cling et al., 2017; Chuc et al., 2014; Menyah, 2009; Sookram and Watson, 2008). Cling et al. (2017), focused on non-farm household businesses in Vietnam and found that most firms operated illegally, mostly due to unclear regulations and not because they want to avoid economic regulations. The Cling et al (2017) findings, further indicate that firms that are started out of opportunity, rather than necessity, are more likely to be registered; and being registered is seen as an incentive as it provides some sort of protection against corruption.

² From 2015/16 BMTHS survey a well registered company is one that is registered with Registrar of Companies or any other professional association. The only local registrar of companies is CIPA.

Another study done in Vietnam, by Chuc et al. (2014), found that small businesses that are informal choose to remain informal as formalising is associated with the burden of economic regulations, which they are avoiding. Furthermore, it was found that those firms that moved from being informal to formal, were strong and young businesses that had achieved technical and scale efficiencies; while those that moved from formal to informal were either weak, and had no potential for expansion (or are strong, but want to evade Government regulations).

Sookram and Watson (2008), in Trinidad and Tobago, found that business owners are encouraged to participate in the informal economy when they feel Government regulations are onerous and when the risk of detection by tax authorities is low; but there is no evidence that shows that tax rate is an issue in discouraging firms to formalise their businesses. The study, however, focused more on the entrepreneur's characteristics of staying in the informal sector rather than firm characteristics. The authors recommend that Government should reduce the burdensome regulations, especially for new and small firms as the results indicated that the regulations hinder their growth and hence they remain informal. Furthermore, Non-Governmental Organisations (NGOs) that could finance informal firms, rather than get credit from Government institutes should be set up as firms were reluctant to get assistance from Government financial institutions as they wanted to remain hidden in Government systems. In Botswana we have CEDA which is meant to assist SMMEs in financing of their businesses, but the Agency requires that the firm must have collateral in order to borrow money, which informal firms may not qualify for. Therefore, NGOs could come up with a financing model that would be suitable for informal sector firms.

Few studies have investigated the Botswana's informal economy. However, none have carried out an empirical analysis of the informal sector characteristics. Buhlebenkosi et al. (2013), carried out a situational analysis on the occupational safety of urban informal sector in Gaborone, a survey was carried out to assess safety by of employees and owners within the trade. While, Menyah (2009), investigated on the developmental state of microenterprises in Botswana by conducting a survey and interrogating the institutional framework that supports Botswana's informal firms, the study did not carry out an empirical analysis of characteristics of informal firms. Findings of this study highlight the importance of informal firms in the livelihood of citizens, but emphasises that the sector faces many challenges. Furthermore, the study highlights that employment creation, growth and productivity is possible only if there is a change in the institutional framework (conducive policy and regulatory

environment) that supports informal sector needs. This view is shared by scholars in other countries, Malesky and Taussig (2009), believe that if the institutional framework is aligned to supporting the needs of the sector, this will lead to more firms formalising their businesses and spending less time in the informal sector.

2.2.2 Informal Firm Characteristics

There are several features that literature identifies to characterise informal firms. Some authors focus on business owner's characteristics, while others concentrate more on the firm/business characteristics. The paper focuses on firm/business characteristics, these are briefly explained:

2.2.2.1 Size and Age of Enterprise

The size of a firm is usually measured by the number of workers in the enterprise (Cling, et. al., 2017; Jaramillo, 2009; Menyah, 2009). The literature, reports that informal firms tend to have few employees, usually one or two. World Bank (2011), highlights that informal firms are primarily linked to micro and small enterprises. Moffat and Kapunda (2011), finds that in Botswana most informal firms are self-employed and sole workers. This is because most businesses in the sector are too small to be run by more than one person. Age of the firm also plays a critical role in the likelihood of a firm being informal. Firms usually start-up in the informal sector, but as they develop and grow over time they tend to formalise their businesses (Taymaz, 2009).

2.2.2.2 Types of activities in the Enterprise

The type of activities of informal businesses can be categorised into three sub sectors, these are manufacturing, trade/retail or services (Cling et. al., 2017 and Menyah, 2009, Taymaz, 2009). Menyah (2009), discovered that in Botswana the retail and services sectors dominated the informal landscape, while the manufacturing sector is less populated by informal firms. The manufacturing sector is more capital intensive as opposed to the retail and services sector, so informal firms would be less likely to enter into the sector, especially those who start these informal firms as a source of temporary income.

2.2.2.3 Ownership Structure

A study done by Peprah, et al. (2019), highlights that one of the features of informal firms, is that they are mostly sole proprietors (owned by an individual) and, a small percentage is usually a partnership structure. Similar studies demonstrate that, a large majority of informal firms are sole proprietors

(World Bank, 2011; Anand and Nur, 1985; and Dada 1995). Most informal business owners tend to be sole proprietors, and this is usually their only source of income and means of survival.

2.2.2.4 Business Premises and Main Customer

According to Taymaz (2009), firms that operate in areas where there are other neighbouring enterprises or clusters, are less likely to be informal as they are more competitive. Informal firms usually do not have the capital to invest in proper business premises, whether renting or buying, so they would rather conduct business in open spaces where customers are easily accessible. However, most of the open spaces occupied by informal businesses are done so illegally, and local authorities end up having disputes with these entrepreneurs (Menyah, 2009). Enterprises in the informal sector are usually small, and therefore attract individual buyers, especially in the areas in which they operate. Informal firms are less likely to supply larger firms, because in most cases they do not have the capacity. Government would usually procure some of its goods from informal firms, as a way of empowering and supporting developing firms (Menyah, 2009).

2.2.2.5 Start-up Capital

Access to capital is usually a major challenge for informal enterprises worldwide. Most firms that start off informal do not have the capital or means of accessing capital from any formal financial institution, so they are usually self-sponsored, with the little capital they acquire from relatives and friends. Similarly, in Botswana, Menyah (2009) found that more than 40 percent of informal firms used their own savings to start their businesses.

2.2.2.6 Region

There is a notable difference in the type of businesses that operate in the urban area, compared to rural areas. Firms in the urban areas are found to be less likely to be informal as compared to those in the rural areas (World Bank, 2011).

3. Methodology

3.1 Empirical Model

Diverse methodologies have been used to unpack the characteristics of the informal sector firms. The objective of the study is to better understand the informal economy in Botswana by identifying the characteristics of these firms. A binary logistic regression model was used, where we have 1 being that a firm is informal, and 0 otherwise. Explanatory variables are focused on characteristics of the firm. The model is expressed as follows:

$$\ln \left[\frac{P_i}{1-P_i} \right] = \beta_0 + \sum_{j=1}^n \beta_j X_{ij} + \varepsilon_i \quad \varepsilon_i \sim \left(0, \pi^{\frac{2}{3}} \right)$$

where P_i is the probability that firm i is informal, β_0 and β_j are parameters to be estimated, X'_{ij} represent explanatory variable j for firm i , ε_i is the error term, and \ln denotes natural logarithm.

The explained variable for this model is informal firms. Different definitions of informality have been used in literature, but the objective of the study and data availability should be the key factors taken into consideration when measuring informality (Andrew et al., 2011). This study has chosen to define an informal business as a firm that is not registered and does not have any formal accounts.

3.2 Data Sources

To measure the characteristics of Botswana's informal economy, data from the Botswana Multi-Topic Household Survey (BMTHS) of 2015/2016 was employed. The BMTHS is a household survey that captures multiple modules and was specifically conducted to provide poverty and labour market indicators. The data was collected from cities/towns, urban and rural villages. The BMTHS has a module that covers household businesses which are both formal and informal in nature. The BMTHS has a total of 7060 households, from these households 1262 had non-agricultural household enterprises. After further data cleaning the observations were reduced to 610 household enterprises.

3.3 Description of Variables

Table 1: Descriptive Statistics and Description of Variables

Variable	Definition	Min	Mean	Max
Informal Firms	1 if firm is not registered and has no formal accounts, 0 otherwise	0	0.827	1
Firm Characteristics				
Age	Years firm has been operating (Years)	0	6.244	52
Region	1 if firm is located in an urban region, 0 otherwise	0	0.763	1
Sector/Activities				
Retailers (Reference)	1 if firm is in the retail sector, 0 otherwise	0	0.535	1
Manufacturers	1 if firm is in the manufacturing sector, 0 otherwise	0	0.279	1
Services	1 if firm is in the services sector, 0 otherwise	0	0.186	1
Business Premises				
Owners HH (Reference)	1 if firm operates at owners home, 0 otherwise	0	0.487	1
Permanent Building	1 if firm operates in a permanent building, 0 otherwise	0	0.185	1
Street	1 if firm operates on the streets, 0 otherwise	0	0.113	1
Market	1 if firm operates in the market, 0 otherwise	0	0.061	1
No fixed Location	1 if firm has no fixed location, 0 otherwise	0	0.153	1
Start-up Capital				
HH Savings/asset Sales (Reference)	1 if start-up capital was sourced from household savings or from selling assets, 0 otherwise	0	0.562	1
Informal Loans/Relatives Loan	1 if start-up capital was sourced from informal loans or relative loans, 0 otherwise	0	0.081	1
Remittances/Inheritance	1 if start-up capital was sourced from remittances or inheritance money, 0 otherwise	0	0.028	1
Bank Loans	1 if start-up capital was sourced from bank loans, 0 otherwise	0	0.032	1
No Loan	1 if firm did not need funds to start as business was inherited or did not need much capital, 0 otherwise	0	0.297	1
Main Customer(Buyer)				
Individuals (Reference)	1 if main customers are individuals, 0 otherwise	0	0.912	1
Other Small Businesses	1 if main customers are other small businesses, 0 otherwise	0	0.019	1
Large Businesses	1 if main customers are large businesses, 0 otherwise	0	0.017	1
Institutions	1 if main customers are institutions, 0 otherwise	0	0.052	1
Ownership Structure				
Sole Proprietor (Reference)	1 if firm is a sole proprietor, 0 otherwise	0	0.822	1
Joint Ownership	1 if firm is owned jointly by members of the household, 0 otherwise	0	0.115	1
Partnership	1 if firm is a partnership, 0 otherwise	0	0.063	1

Table 1 presents the descriptive statistics of variables used in the model. As indicated in the table, only one variable (age of firm) is continuous, while the rest are dummy variables. The results show that 82.7 percent of the firms are informal, while 17.8 percent are formal. In terms of age, the average is 6.2 years, with the lowest firm having been in business for less than a year, and the oldest firm having been in business for 52 years. The region in which a firm was situated showed that around 76 percent of the firms were in urban areas, while 24 percent were in rural areas. The informal firms are separated into three sectors; retail, manufacturing and services. Retailers had the highest proportion with 53.5 percent, followed by manufacturing and services with 27.9 percent and 18.6 percent, respectively. Business premises which a firm operates from is an important variable, and it was divided into five categories. A majority of the firms were operating their businesses from their homes (48.8 percent), followed by those operating in a permanent building (18.5 percent), those operating with no fixed location (15.3 percent), those operating in the street (11.3 percent) and those operating in the market (6.1 percent), respectively.

Capital is a very important element in a firm; and sources of acquisition of capital for start-up could show the potential of a firm as well as its capital intensity. Sources of start-up funding variable is divided into five sources; where the major (56.2 percent) source of funding is household savings or sale of assets, followed by those who said they did not need funds to start up (29.6 percent), and the least source of start-up finance was from remittances or inheritance (2.8 percent). Another question asked was market access for output and the main buyer of the firms' products and services were individuals at 91.2 percent, followed by institutions, other small businesses and large businesses with 5.2 percent, 1.9 percent and 1.7 percent, respectively. The ownership structure comprised of sole proprietor, joint ownership with household members and partnership, where the majority were found to be sole proprietors (82.2 percent), then joint ownership (11.5 percent) and partnerships (6.3 percent).

4. Empirical Results and Discussion

This section presents the results of the logistic regression model that estimates the characteristics of firms in the informal economy. As shown in Table 2; the coefficients give the likelihood of being informal given changes in the explanatory variables, and these are presented with the corresponding p-values. The marginal effects reflect the change in the likelihood of being informal given changes in firm/business characteristics. The Log Likelihood Ratio (LLR), depicts that the model is a good fit

for the data ($p < 0.001$). The model also explains about 26 percent of the variation in the explained variable, as shown by the Pseudo R^2 . To test for multicollinearity a Variance Inflation Factor (Stock and Watson, 2003) was computed and low VIFs were found, depicting that multicollinearity is not a problem in the model.

The results indicate that the location where a firm is situated is a significant determinant of whether a firm is formal or informal. The analysis shows that region is significant and negative, implying that a firm that is located in an urban area is 6.6 percentage points less likely to be informal. Businesses that are in urban areas are less likely to be informal because they are more aware of the benefits of formalising as compared to those in the rural areas. Furthermore, there is better infrastructure and a larger population in urban areas as compared to rural areas.

Compared to firms that operate in the owner's home/house, results show that firms operating in a permanent building are 28.9 percentage points less likely to be informal. This means that firms operating in permanent buildings/structures are less likely to be informal. These results correspond with literature as it is found that informal businesses usually do not have the capital to rent or buy premises, hence they end up operating at home or in open spaces (Taymaz, 2009).

The source of start-up capital for informal firms is a challenge. The start-up capital variable has five categories; household savings or asset sales, loans from informal sources or relatives, capital from remittances or inheritances, bank loans, and no loan. The results show that the no loan variable is significant and positive. A firm that did not get a loan to start-up is 6.9 percentage points more likely to be informal than a business that used household savings or sold assets to start business. These results are consistent with those of Menyah (2009), who found that, in Botswana, the majority of informal firms did not acquire a loan to start-up. From the literature, it is believed that due to the firms in the sector wanting to remain undetected and not incur the tax burden, they tend to not want to deal with Government agencies (Sookram and Watson 2008).

The other variable of interest was the main customers (buyers) of products and services from informal firms. Compared to individual buyers, the results show that other small businesses and institutions are 72.4 percentage points and 35.5 percentage points, respectively, less likely to purchase from informal businesses. Informal firms usually produce goods at below optimal capacity, and usually do not have

the means to supply to a larger market. Firms in the informal sector are less developed, and usually cannot afford to reinvest profits into the company to access larger markets, as this is the only source of income.

Results for the ownership structure show that a firm in a partnership is 23.3 percentage points less likely to be informal than firms that are sole proprietors. These results corroborate those found in the literature. Menyah (2009), discovered that in Botswana majority of firms are sole proprietors, and are less likely to be partnerships because usually a partnership is started as an additional source of income, and serious partners would not like to invest their money in small unlicensed businesses. Informal businesses are also seen as a temporary source of income, so the owner will always be waiting for an opportunity in formal employment, and would not want to imprison themselves in a partnership that would make it harder for them to leave their business, if an opportunity in the formal sector was to arise.

Table 2: Binary Logistic Regression Results

Variable	Coefficient	P-value	Marginal Effects
Age	-0.018	0.292	-0.001
Region	-0.949	0.011**	-0.066
<i>Sector/Activities</i>			
Manufacturers	-0.208	0.534	-0.018
Services	-0.354	0.363	-0.032
<i>Location of Operation</i>			
Permanent Building	-2.017	0.000***	-0.289
Street	0.234	0.641	0.018
Market	-0.318	0.545	-0.029
No-fixed Location	-0.188	0.682	-0.016
<i>Start-up Capital</i>			
Informal Loans/Relatives Loan	0.439	0.383	0.031
Remittances/Inheritance	0.338	0.637	0.024
Bank Loans	-0.934	0.306	-0.108
No Loan	1.012	0.012**	0.069
<i>Main Customer(Buyer)</i>			
Other Small Businesses	-3.815	0.003***	-0.724
Large Businesses	-1.229	0.146	-0.159
Institutions	-2.157	0.000***	-0.355
<i>Ownership Structure</i>			
Joint Ownership	-0.373	0.429	-0.034
Partnership	-1.639	0.000***	-0.233
Pseudo R ²	0.2593		
Log Likelihood	-182.424		
LR Chi ²	0.000		
Number of Observations	610		

Note. ***, ** and *: statistically significant at 1%, 5% and 10%, respectively.

5. Conclusions and Policy Implications

The objective of this paper was to examine the characteristics of firms in Botswana's Informal Economy. As indicated in section 2, there has been an increase in the number of informal firms in Botswana. If the firms are sufficiently developed, this would assist in overcoming some of the socio-economic challenges the country faces such as high unemployment and poverty rates. The analysis applied a binary logistic model and to the household business data from the 2015/16 BMTHS. Findings indicate that informal firms are most likely to be found in rural areas, operate in their own houses and are sole proprietors. Results further, depict that firms that did not need a loan when starting up are more likely to be informal than a business that used household savings or sold assets to start business. Furthermore, it was also discovered that informal firms are less likely to have small businesses and institutions as their main customer as compared to individual buyers.

Ideally most economies would like to have a transition from informal to formalisation of firms as a firm grows and develops. An informal firm should aspire to formalise, and reap the benefits of being formal. However, the development of firms that are informal is also very vital and cannot be overemphasised, as there are a lot of benefits associated. Currently there is no policy that is tailor made for the informal sector, to address the specific challenges the sector faces. The policies in place do not exclude the development of the sector, but also do not adequately address the growth and development of the sector. The current policies in place are important in growing businesses in Botswana. However, they fall short in assisting the informal sector because of requirements, such as; licensing which firms need to get the necessary assistance. Therefore, an informal sector policy should be formulated, that will address the challenges faced by firms in the sector.

Government needs to boost the business environment in rural areas to allow for growth of firms in rural areas and create more jobs in those areas. Results indicated that most firms in rural areas are more likely to be informal, and this is because by formalising this imposes a tax burden on them, yet there is no motivation or conducive environment to grow their businesses. More initiatives should be geared towards the encouragement of partnerships, as this will help individual's pool resources and ideas for sustained growth in these firms.

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