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FACULTY OF SOCIAL STUDIES
DEPARTMENT OF ECONOMICS**



**DETERMINANTS OF THE INFORMAL SECTOR PARTICIPATION: A CASE OF
GLENVIEW SUBURB, HARARE METROPOLITAN PROVINCE, ZIMBABWE.**

By:

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE
REQUIREMENTS OF THE MASTER OF SCIENCE DEGREE IN ECONOMICS**

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DECLARATION

I, Tariro Collins Bhanya (R1811564) do hereby declare that this empirical study is authentic and original. This dissertation is entirely my work and was never submitted to any institution for academic award. Due acknowledgement was done where views of other scholars are used in this study.

Student's Signature Date/...../.....

DEDICATIONS

I dedicate this study to my late father, son of the soil, Cde Didmus Matomboehondo Bhanya and my mom Susan Rupfutse.

ACKNOWLEDGEMENTS

Firstly, I owe a huge debt of sincere gratitude and appreciation to my supervisor Dr. Zhou for his valuable insights, his dedication and his patience during the period the study was undertaken. It was a great experience to do this research under his mentorship.

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Hats off to my family members who mastered the art of being supportive, kind and positive during my study. They were my great pillars and source of strength for the duration of this arduous and long path to attain a Masters of Science in Economics Degree. I also want to thank my friend, Precious Nyasha Gopito for her unwavering support. Her comments and contributions were useful in shaping this dissertation.

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Most of all, I would like to thank Almighty God for carrying me through my study period. Almighty is always the source of my strength.

ABSTRACT

The objective of this study is to identify the determinants of the informal sector participation in Zimbabwe using Glenview Suburb, Harare as a case study. Cross-sectional primary data is collected from 379 household heads proportionally distributed basing on number of households in each ward. Households heads in each ward are randomly selected. The logistic regression model is used to analyse the factors determining participation in the informal sector. 73.09 percent of the respondents are found to be participating in the informal sector. From the regression results, the coefficients of gender, household income, household size, formal sector employment history (retrenched and never employed), linkages, taxation and government regulations are the significant. However, coefficients of age of the household head, marital status of the household head, education level of the household head, vocational training of the household head, formal sector employment status of the household head (retired) are the insignificant variables. It is recommended that government should implement policies directed at stimulating male participation in the informal sector. In addition, the government should strengthen its social welfare and income redistribution and equality policies. Moreover, to cut household head burden, it is recommended to use health policies (such as birth controls) to control fertility. On the other hand government was recommended to revisit its legislation and policies to make sure that they are friendly to the formal business environment. After policy recommendation, suggestions for further studies are made.

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LIST OF ACRONYMS

CZI	Confederation of Zimbabwe industries
ESAP	Economic Structural Adjustment Programme
GDP	Gross Domestic Product
ILO	International Labour Organization
LPM	Linear Probability Model
LRP	Land Reform Programme
MIMIC	Multiple Indicator and Multiple Causes
ML	Maximum Likelihood
MLE	Maximum Likelihood Estimation
OLS	Ordinary Least Squares
SDG	Sustainable Development Goal
SSA	Sub-Sahara Africa
UN	United Nation
ZIMSTATS	Zimbabwe National Statistics Agency

CHAPTER ONE

INTRODUCTION AND BACKGROUND

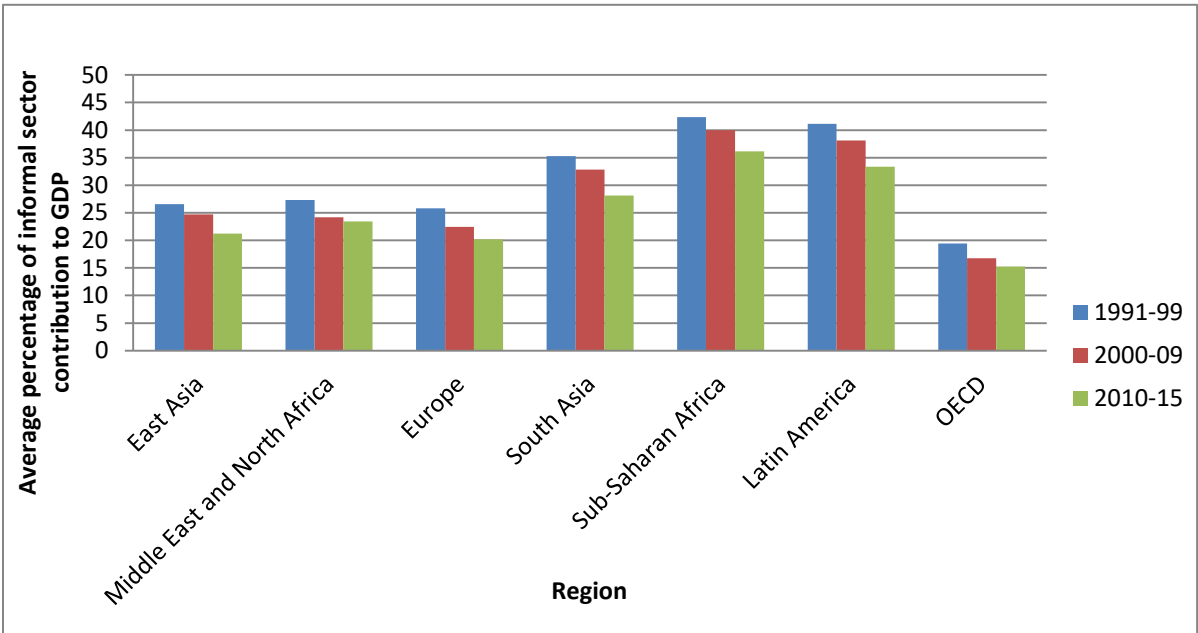
1.0 Introduction

The definition of the informal sector is not standardized in literature and is highly debatable in policy and academic fraternity. Some define the informal sector as the black economy or as the shadow economy while others call it the unreported economy (Medina, Jonelis and Cangul, 2017). The International Labour Organization (ILO) (1993) defined the informal sector as a group of unregistered and unincorporated ventures. The study adopts the definition of the informal sector that it includes unincorporated, unreported and unregistered economic activities. Marjo-Riitta Liimatainen (2002) quoted in Cross (2004), argue that Kenya and Ghana were the first places where the term “informal sector” was applied in the early 1970s at the ILO World Employment Programme. The informal sector is characterized with bulky micro-enterprises that are labour intensive, reliant on indigenous resources, uses simple technology and family owned (Todaro and Stephen, 2006). In many instances, informal activities cannot be accounted for by official statistical agencies. It is outside the scope of government regulations and it is beyond labour concerned organizations and social protection agencies (ILO, 2002). Activities under the informal sector can be either legal or illegal. These may include drug dealings, goods smuggling and vending.

Participants in the informal sector may be in the form of employers (entrepreneurs) or employees (contributing family members, self-employment and informal-wage employment). Informal sector players mainly seek to circumvent taxes, licensing costs, registration costs and business regulations, minimum wages, social systems and labour contracts (ILO, 2018). In developing and developed countries the informal sector accounts for 40% to 60% and 10% to 15% of GDP, respectively (Schneider and Williams, 2013). The informal sector is important as it is the training ground for entrepreneurs before they go formal. According to Autio and Fu (2014), more than two thirds of enterprises in the world started their operations without registering. The informal sector accounts for 61% of global employment, 67% in emerging countries and 90% in developing countries (ILO, 2018). This means that the informal sector is a sizable segment of the world’s employment base. Hence, the contribution of the informal sector to global GDP is not trivial.

Globally, the Sub-Saharan Africa (SSA) accounts for the highest informal sector contribution to its Gross Domestic Product (GDP) and level of employment. Based on estimates, Sub-Saharan Africa has the largest informal sector contribution to GDP: nearly 66% (Charmes, 2012). Its informal sector accounts for at least 72% of employment in non-agricultural activities (ILO, 2002). The estimates show that the contribution of the informal sector to both GDP and employment cannot be neglected. The bar graph below is a summary of the regional contribution of the informal sector in the world from 1991 to 2015 by region.

Figure 1: Contribution of the Informal Sector to Regional GDP



Source: Medina and Schneider, (2018)

The mushrooming of the informal sector in Sub-Saharan African countries’ urban areas intensified due to mismatch between low industrial growth and massive urbanization. Most of the emerging jobs in Africa are coming from the informal sector. Gundogan *et. al.* (2009) noted that the informal sector is responsible for 93% of SSA’s emerging jobs. This shows the importance of the informal sector for the generation of new job opportunities. Given the same amount of capital between the formal and informal sector, the informal sector can employ more people in small outlays as compared to formally operating large firms (Dhemba, 1999).The informal sector is a shock absorber of cyclical trends in the formal sector. It is a waiting station for those retrenched and acts as a training ground for new entrepreneurs before they move to the

formal sector. Devey *et. al.* (2006) calls the informal sector is a refugee camp for the formal economy.

From the statistics above, it can be concluded that the informal sector is of vital importance to both developing and developed countries. The SSA region is characterized by high informal sector employment and production as compared to other regions in the world. The contribution made by the informal sector in production and employment signifies that the sector can be used as a cornerstone for economic development. Informal activities dominate in labour intensive sectors, low-paying wages, low level of skills required and where it is easy to do business without registration (Mukherjee & Nenova, 2003). Dominance of the informal sector in the SSA means that the region has a high rate of its labour force participating in the informal sector either as entrepreneurs or as employees.

Zimbabwe is dominated by informal sector just like many other SSA countries. Many factors like the livelihood security problems, employment and legal system were proposed to be the causes of informal sector participation in Zimbabwe and not much have been done to empirically prove that. The study will be vital to provide the empirics for informal sector participation.

1.1 Background of the study

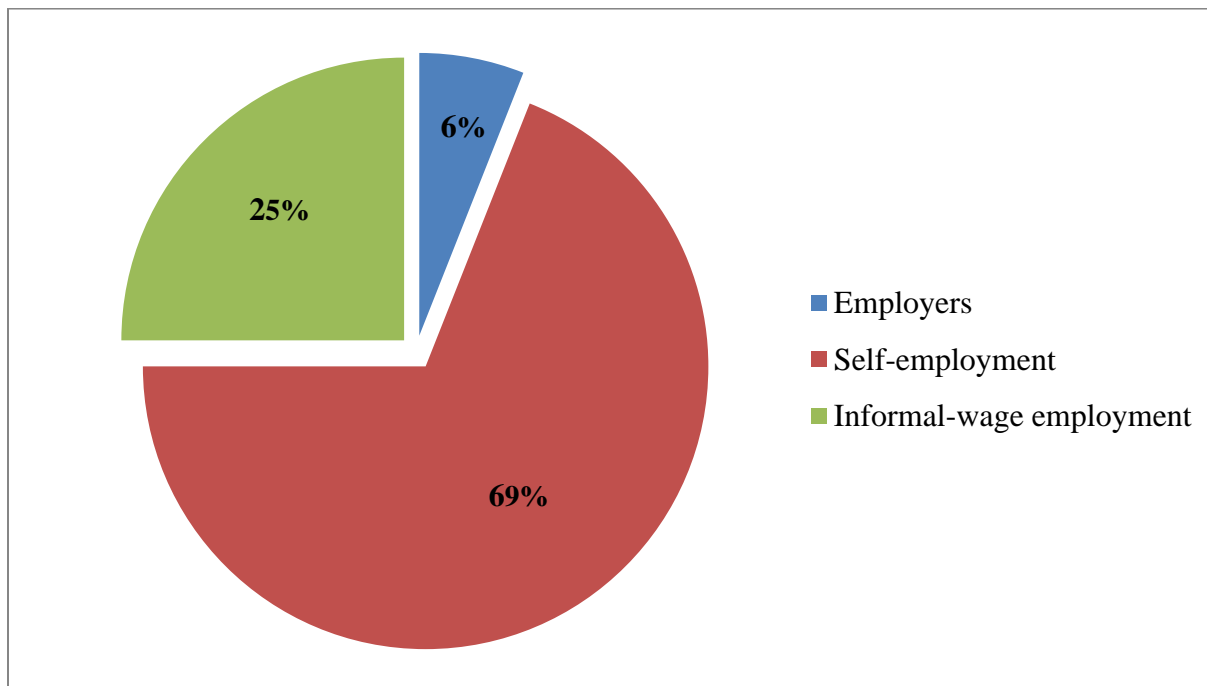
Zimbabwe is a SSA land-locked country in the southern part of Africa. The country's informal sector is ranked second in the world (Medina and Schneider, 2018). In Zimbabwe the informal sector is characterized by indigenous resources reliance, ease of entry and exit and skills obtained outside formal education. Furthermore, the informal sector has its nature and characteristics. These include family ownership, use of family labour, small-scale operations and competitive, unregulated markets. In Zimbabwe, the informal sector is a basket of a wide range of activities that includes: vending, carpentry, welding, food processing, tuck-shops, farming, car washing, car parks, home industries, cross-bordering, hair-saloons, flea markets and construction among other micro-enterprises.

The informal sector cuts across all sectors of the Zimbabwean economy. In rural areas, it is mainly in agriculture and mining industry, whilst in urban areas, it is biased towards the manufacturing and service sector. Zimbabwe's shadow economy plays a part in producing goods and services and in providing employment opportunities to the labour force. The informal sector

offers a wide variety of products. The product range includes clothing, food-stuffs, beverages, detergents, furniture, metal products, accessories, transport, foreign currency and hardware.

Women, school leavers, graduates, retrenched and retired persons and migrants from rural to urban areas dominate the informal sector. A larger stack of the informal sector employment and entrepreneurship is taken by women (ILO, 2018). School leavers come straight from school into the informal sector. Graduates join the informal sector because the formal sector cannot offer them employment. These participants join the informal sector as either employers or employees (self-employment, informal-wage employment and contributing family members). The following pie-chart shows the distribution of the informal sector participants in Zimbabwe.

Figure 2: The distribution of the informal sector participants in Zimbabwe



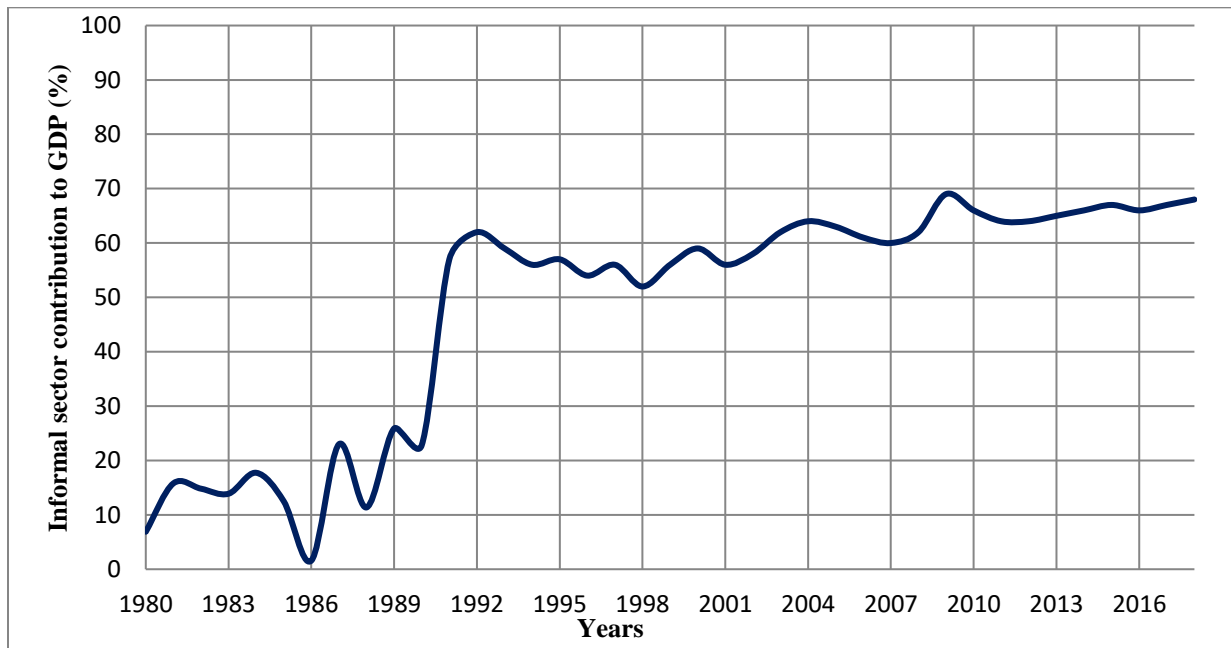
Source: Zimbabwe National Statistics Agency (ZIMSTAT), (2020)

Even-though the informal sector was widening during the period between 1980 and 1990, the degree of its expansion was lower than the period after 1990. The structural adjustment policies created conditions for the informal sector's excessive expansion. Thanks to the Economic Structural Adjustment Programme (ESAP) and the Land Reform Programme (LRP), the period after 1990 companies were shutting down and employees were retrenched excessively. The ESAP was a recipe of economic disaster, instead of heralding modernization, competitiveness

and export-led oriented growth (Kanyenze, 2003). Furthermore, Kanyenze (2003) noted that after 2000, companies further closed and many lost jobs owing to the land reform programme. In the same line, Confederation of Zimbabwe industries (CZI) (2012) underscored that retrenchment, lower wages and salaries on formal jobs and currency devaluation caused the informal sector to expand. The shrinking industrial sector and widening urban population resulted in high demand for jobs beyond the formal sector's ability.

The informal sector contribution to GDP in Zimbabwe can be summarized in a graph shown below:

Figure 3: The informal contribution to GDP (%) in Zimbabwe

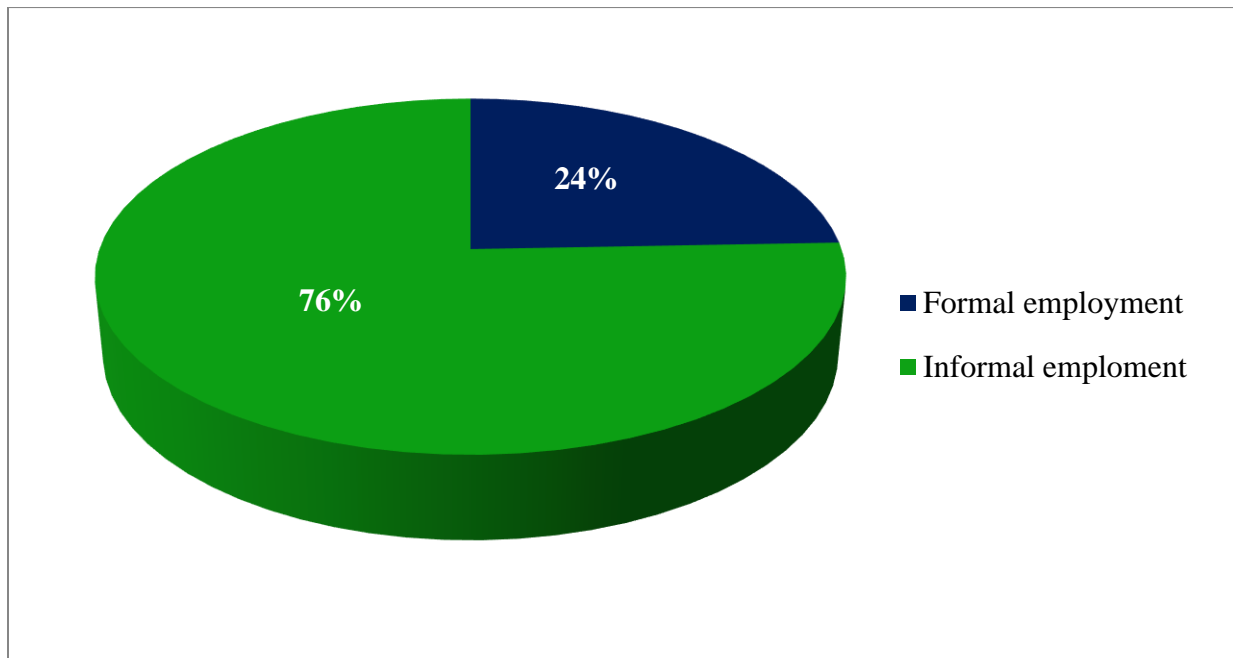


Source: Makochekanwa (2010); Medina and Schneider (2018)

The trend above shows that the informal sector has been the driving sector of Zimbabwe's GDP. The widening informal sector contribution to Zimbabwe's GDP shows that contribution of the formal sector was depleting. Hence, the massive de-industrialization of the Zimbabwean economy left the national production being dominated by the informal sector. The Zimbabwean informal sector was contributing less than 10% to GDP in 1980 and grew to more than 60% in 2016 (Makochekanwa, 2010; Medina and Schneider, 2018).

Tibaijuka (2005) noted that in 1980, Zimbabwe's informal sector was employing less than 10% of the labour force, in 1987 it was employing 20% and 27% in 1991. The percentage of Zimbabweans earning livelihood from the informal sector kept on increasing. Actually, the size and role of the informal sector was increasing as the Zimbabwean economy was declining. School leavers, women and retrenched persons among others were obliged to become participants in the informal sector. Therefore, the informal sector was acting as the rescue point for those seeking employment. The informal sector is the major employer of the Zimbabwean labour force. It employs about 2.2 million out of 2.9 million employed populace aged at least 15. This means that the informal sector is employing 75.6% of labour force (ZIMSTAT, 2020). Figure 1.3 below shows that the informal sector is the major job provider in Zimbabwe.

Figure 4: The distribution of employed labour force in Zimbabwe



Source: ZIMSTAT (2020)

Glenview is used as the unit of analysis considering that the area is home to the many informal sector activities including vending mainly at Tichagarika, Glenview 1 Shops, Makomva, home industries, tuck-shops, flea markets hair-saloons and barber shops and the famous Glenview Furniture Complex among others. This study focuses on 3 wards in Glenview in order to get a deeper view of informal sector participation determinants.

Theories proposed different causes of participation in the informal sector. Dualist argues informal sector participation is a survival strategy and the structuralists believe that it is a product of interdependence between the formal and the informal sector. The Legalist school pointed out that micro-enterprises are in the informal sector to avoid official costs and regulations (Chen, 2012). On the other hand, some people may join the informal sector voluntarily. They have their businesses blooming in the informal sector, for example, private lessons by teachers, money changers, illegal miners, commodity brokers and cross-border. In a bid to successfully regulate, support and formalize the informal sector, policy makers requires knowledge on the determinants of the informal sector participation in Zimbabwe. However, there is little empirical work done to justify the theoretical propositions and other socio-economic determinants the informal sector participation. Thus, this study focuses on micro level informal sector analysis to understand the drivers of participation in the informal sector in Harare.

1.2 Statement of the problem

The contribution of Zimbabwe's informal sector to both GDP and employment is excessive. This implies a large chunk of the labour force is participating in the informal sector. Theories pointed out a number of factors that determine the informal sector participation. For instance, the dualist theory pointed on livelihood security while the structuralist theory pointed on interdependence between the formal and informal sector. Furthermore, the legalist asserted hostile legal system to be a driver of informal sector participation. However, policymakers end up in confusion on the contribution of the factors proposed by each theory on the determinants of the informal sector participation. This is worsened by lack of enough empirical evidence to validate the arguments of these theories. Hence, the thrust of this study is to figure out the factors driving participants in the informal sector in Zimbabwe.

1.3 Objectives of the study

The main objective of this study is to identify the determinants of informal sector participation in Harare, Zimbabwe.

The specific objectives are:

- a) To identify if income levels, formal and informal sector linkages and government regulation, determines participation in the informal sector in Harare, Zimbabwe.

- b) To identify the socio-economic determinants of the informal sector participation in Harare, Zimbabwe.

1.4 Research Questions

The core question in this study is; what are the determinants of the informal sector participation in Harare Urban, Zimbabwe?

The study also seeks to answer the following specific questions:

- a) Does the income levels, formal and informal sector linkages and government regulation, determine participation in the informal sector in Harare, Zimbabwe?
- b) What are the socio-economic determinants of the informal sector participation in Harare, Zimbabwe?

1.5 Significance of the study

According to Medina and Schneider (2018), Zimbabwe's informal sector is the second largest in the world. This sector is playing a fundamental role in Zimbabwe's economic activities that is, in employment and national output. However, an intellectual gap exists on what factors are responsible for the propelling individuals' participation in the informal sector. Becker (2004) argued that adequate informal sector policies must be developed without hampering its contribution towards employment and economic growth. This study will enable Government officials to identify the variables to consider when designing informal sector related policies. For example, the government may want to formalize, assist or regulate the informal sector. The knowledge gained from this study may help in improving the formulation efficiency of the informal sector targeting policies.

In addition, this study is important to academics as it contributes to the literature of the informal sector on the micro-level determinants of informal sector participation. There are limited empirics for academia on the determinants of the informal sector participation in Zimbabwe. Makochekanwa (2012) noted that high taxes, stiff foreign exchange controls and high unemployment are the major causes of participation in the informal economy. Therefore, findings from this study will complement the existing literature on the subject matter. In academics, it will equip the academia with a better understanding on the drivers of the informal sector in Harare, Zimbabwe.

1.6 Organization of the rest of the study

The study is divided into five chapters. Chapter one presented the introduction, the background and problem statement of the study. Chapter two gives a detailed outline of the literature review, including both theoretical and empirical review. Methodology, data collection techniques and estimation are presented in chapter three while chapter four presents the results and their interpretations. Chapter five summarizes and concludes the study by proposing policy recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviews the relevant theoretical and empirical literature for this study. The theoretical literature review highlights the theories underlying the determinants of the informal sector participation. The empirical literature review section presents the empirical studies done on the informal sector participation in both developed and developing countries. The literature review is important for building the conceptual framework useful in model specification, questionnaire design and data analyses procedures.

2.1 Theoretical literature review

Becker (2004) postulated that the informal sector participation is considered to be a characteristic of less developed countries. However, the informal sector plays an important role in both developing and developed countries. Different views on the factors that contributes to informal sector participation were theorized in literature. This theoretical literature review identifies theories used to examine the determinants of the informal sector participation. Different schools-of-thoughts proposed factors that determines an individual's participation in the informal sector. The various theories include the Dualist, Legalist and Structuralist, among others

2.1.1 The Dualist or Modernist school of thought

The ILO (1972) propagated the dualist school of thought. This school starts by dividing the economy into two sectors, namely the formal and the informal sector. Dualists believes that the informal sector is made of intermediate activities taken for the provision of safety nets during times of economic crisis and provision of income to the poor. The informal sector is a result of lack of formal employment to absorb excess labour supply. Therefore, individuals participate in the informal sector due to lack of jobs in the formal sector and poverty. The absence of decent jobs and livelihood security is a push factor for participation in the informal sector. Chen (2012) and Makochekanwa (2020) do acknowledge that the informal sector sometimes acts as a shock absorber for cyclical trends in the formal sector. Thus, it is a waiting room for job seekers and laid off workers. This indicates that from a dualist point of view, the determinants of informal

sector participation are poverty (income) and limited employment capacity from the formal sector.

The informal sector participation dominates in economies with economic hardships where the formal sector cannot absorb the labour force. In other words, the informal sector becomes the major player in job creation and income generation. As countries modernize, industrialize and develop, the pool of unlimited labour supply would be absorbed in industries (Lewis, 1954). This means the traditional sector, which is characterized by small producers, trivial traders and a range of casual jobs fades as development occurs. For the participation in the informal sector to fade, an economy should have its level of economic growth greater than its population growth rate.

This theory does not believe that the linkages existing between the informal sector and the formal sector determines players participation in the informal sector. On the other hand, dual theory proposes high rate of unemployment and poverty to be the major reasons behind the informal sector participation. From this theory, it means individuals are participating in the informal sector in Zimbabwe as a survival strategy not because of its linkage with the formal sector.

2.1.2 The Structuralist school of thought

The Structuralists assert that the informal sector and the formal sector are always interdependent, complementarities, linked and opposed their separateness and co-existence in operation. They postulate that the informal sector operations are subordinates of capitalist development interests that serves to reduce the cost of inputs (such as labour and raw materials) and increase competitiveness. This means the informal sector existence is dependent and subordinate to the formal (capitalists) sector. Since large capitalist firms' efficiency grows as the informal sector widens, this confirms that the duo are highly linked. Enterprises operating in the informal sector are dependent on big enterprises in the formal sector (Moser, 1978; Bromley, 1978; Chen, 2012).

The formal sector can sell its products to the informal sector. These products may be inputs, fixed assets, or finished products for resale. On the other hand, the informal sector players may sell their products to formal sector enterprises. The informal sector players can be subcontracted to take production processes (for example providing raw materials, services and consumable

goods) by the formal sector participants. Firms in the monopolistic competition are more linked to the informal participants. They may subcontract the informal sector players to increase their sales, this may be through distribution of their products to informal sector participants say vendors or home industries. On the other hand, producers in the formal sector may subcontract informal participants to provide raw materials (for example saw-millers and furniture industry) and finished products (for example cross border traders and retail shops).

The intrinsic linkage causes an on-going coexistence for individuals to participate in the two (informal and formal) sectors. From the Structuralists' arguments, participants in the informal sector are there to serve the subordinate duties of the capitalist's economic interests. In Zimbabwe, economic agents' participation in the informal sector may be a product of the complementary feature for the two (informal and formal) sectors. This study seeks to identify the effects of the informal and formal sector linkages on the informal sector participation.

2.1.3 Legalist school of thought

This was popularized by Hernando De-Soto (1989). Its emphasis is on how enterprises respond to government bureaucracy and regulation. The Legalist argues that government interference disturbs the market's efficiency and freedom of economic agents in resource allocation. The theory points at the hostile legal system and business over-regulation as a major reason for the existence of the informal sector. The Legalists postulate that the informal sector participants are small entrepreneurs who chose to avoid excessive costs and time associated with formal registration and formal operations. The informal sector keeps on existing as long as formalization procedures and government rules and regulations are burdensome and costly (Becker, 2004; Chen *et. al.*, 2002; De Soto, 1989). Gelb *et. al.* (2009) postulate that high regulation costs act as a barrier to the informal sector formalization process. Hence, the theory proposes the legal and regulation framework to be a reason for entrepreneurs to participate in the informal sector. The Legalists identify government bureaucracy and regulations such as taxes, licensing costs and registration costs as the major determinants of informal sector participation.

Legalists are in line with the neo classical economic models which argue that if marginal tax increases, people may choose to allocate more hours to leisure than work. Neo classical economic models proposed that tax payers compare the marginal benefit and the marginal cost of paying tax. If the marginal cost is greater than the marginal benefit, tax payers may go into the

informal sector. If the marginal tax in the formal sector increases, the neo classical economic models propose the concept of substitution effect. This means the tax system in an economy can induce individuals to substitute formal sector participation by informal sector participation. Accordingly, individuals will allocate more working hours to the informal sector and reduce the formal sector working hours. This means that participating in the informal sector is a well informed decision taken by individuals to avoid taxes, regulations and the related fees by participating outside the official channels. On the other side, the avoided regulations by the informal sector players include labour laws, property rights laws and environmental laws

As the informal sector widens, it results in shrinking tax base, which transforms to reduction in state revenue. This may force government to increase taxes for the formal sector operators. Increasing tax may act as an incentive for economic players to join the informal sector.

2.1.4 The other schools of thought

The Illegalist School of thought subscribes to the notion that informal sector participants intentionally shun regulations and taxation. It also pointed out that entrepreneurs undertaking criminal operations may choose to participate in the informal sector to avoid government regulations. For instance, drug dealers and illegal money changers in Zimbabwe find it hard to register their operations. This means that entrepreneur's participation in the informal sector is mainly driven by his or her choice to operate illegally (Maloney, 2004).

The Sector Participation Model was developed by Verme (2000). According to Verme (2000), the informal sector participation is a result of two factors, namely rationing and individual preferences. Under rationing, this model pointed out at education, experience and skill preferences as factors underlying employers' and employees' participation in the informal sector. From rationing, low level of education, poor business experience and limited skills preferences drivers economic players into the informal sector. On the other hand, individual preferences includes the employees expected personal disposable income and other socio-economic factors like dependency ratio as causes of the informal sector participation. The model underscores that low levels of income and higher dependency ratio pushes economic agents to carry their activities in the informal sector. Both individual preferences and rationing determine the informal sector participation. The rise of vocational training courses to gain skills and the need for individuals to go for education and work-related learning in Zimbabwe may be through

rationing. Individual preferences determine the informal sector participation since an individual may practice his or her prior right to choose among alternatives.

Harris and Todaro (1970) developed the rural-urban migration theory. The Rural-urban migration theory proposed massive rural-urban migration in developing countries to be responsible for the expansion of the informal sector in urban areas. The pull and push factors cause the rate of urban to rural migration to be greater than the rate of industrialization. This means the formal sector is not capacitated to generate employment that accommodates migrants from rural areas. The urban informal sector responds to the employment crisis by generating employment for migrants by using simple technologies that are labour intensive (Todaro, 1981). This contradicts with the Lewis model by Lewis (1954) that proposes that the rate of rural to urban migration is always equal to jobs opportunities created in the formal sector. The Rural-urban migration theory concurred with Dualists propositions. The rural-urban migration theory adds migration as a reason for informal sector expansion.

2.2 Empirical literature review

In Kenya, Gakere (2006) used the logistic regression model to investigate the determinants of labour participation in the informal sector. Cross sectional data was collected from a sample of 12 814 households. The results indicated that the household income and gender of the household head had a negative and statistically significant impact on informal sector participation. Education level, location, marital status, age and vocational qualifications had a positive and statistically significant effect on informal sector participation. From the study, it was acknowledged that income, gender, education level, location, marital status, age and vocational qualifications were the drivers of people to participate in the informal sector in Kenya. To identify the determinants of informal sector participation in Harare, this study followed the approach by Gakere.

In India, Sahoo and Neog (2015) did an empirical study to determine the determinants of participation in the informal employment by non-cultivator workers. The study made use of cross sectional data obtained from the National Sample Survey Organisation (NSSO) and the Employment-Unemployment Survey (EUS) for two time periods 2004-05 and 2011-12. The Multinomial Logit was employed to estimate the coefficients. The study found migration, age,

dependency ration, poverty, social groups and marital status to be significant and positively related to the participation by non-cultivator workers in informal employment.

Aikaeli and Mkenda (2014) examined the determinants of Tanzania's construction micro and small entrepreneurs' participation in the informal sector. A Logistic regression model was used to estimate the coefficients of the variables in the model. The study employed cross-sectional data collected from a sample of 1546 respondents made up of 1445 micro and small enterprises, 73 firms and 28 policymakers. Education, income and gender of the respondent were found to be significant. The results showed that the level of education and income of the workers in the construction industry had a negative impact on informal sector participation. However, gender had a positive impact on the informal sector participation. This means that low level of education, low salaries and being a female are the factors that were to increase the possibility of participating in the informal sector.

Furthermore, in Tanzania, Bagachwa and Naho (1995) carried out a study on the growth and size of the informal sector using data for the period of 1968 to 1990 employing the Tanzi method. Secondary data was used. From the regression results, it was found that lack of formal employment, livelihood security and a need to generate income is positively related to the informal sector size. This means that the majority of the informal sectors players in Tanzania were participating in the informal sector for employment and as a survival strategy

Tufffour (2019) examined the factors influencing women participation in food vending in Ghana. The study used cross-sectional primary data from a sample of 300 street vendors from Dansoman and Madina suburbs of Accra metropolis. The logit model was used to identify the determinants of women participating in food vending. The results revealed that business experience, marital status and age had a significant positive effect on informal sector participation by women.

Mintah and Darkwah (2018) carried out a study to investigate the drivers of Small to Medium Enterprises' participation in the informal sector of Ghana. The study was based on cross-sectional data and employed Chi-square statistical methodology for analysis. The results showed that gender, level of education, business enterprise registration and tax obligation had significant coefficients. Gender, business enterprise registration and tax obligation were positively related to the informal sector participation. On the other hand, the level of education was found to be

negatively related to the informal sector participation. Klarita and van de Werfhorst (2013) confirmed the effects of education on informal sector participation in Albania. They found a strong negative relationship between education level and the informal sector participation.

Traore (2012) carried a study on the determinants of informal sector participation in Burkina Faso. The study used cross-sectional primary data collected from a sample of 2513 households across the country. The study employed the Nested Logit model to identify the determinants of informal sector participation. The results revealed that gender, household size and level of education were statistically significant and positively related to the informal sector participation. However, age was statistically insignificant and positively related to the informal sector participation.

Angel-Urdinola and Tanabe (2012) did a study on the micro-determinants of informal sector employment in the Middle East and North Africa (MENA) region. The study used secondary data and applied the Multiple Indicator Multiple Cause (MIMIC) and the Probit model to find the determinants of informal sector employment. The results disclosed that those economies with agricultural sector as the major employer have high percentage of their citizens participating in the informal sector. Age, gender, marital status, level of education and income of individuals were found to be significant. In addition, the results revealed age, level of education and income of individuals to be negatively related to the informal sector participation. However, gender and marital status were found to be positively related to the informal sector participation.

Williams and Youssef (2015) studied the choice of voluntary entrepreneurship and employment in the informal sector in urban Brazil. Cross-sectional data from the 2000 household survey conducted by the Brazilian Institute for Geography and Statistics in Brazil in 2003 was used. From the analysis, it was found that only 8% of those informally owning businesses pay taxes and make social security contributions. The study also revealed that 31.1% of informal sector entrepreneurs were found to be informal sector due to inability to lack formal employment and having inadequate income. On the other hand, 45.5% of informal entrepreneurs voluntarily participate in the informal sector. 8% of the entrepreneurs on the informal sector joined the informal sector because of their skills and experience.

In Bolivia, Pradhan and van Soest (1995) examined the factors driving households to participate in the informal sector in urban areas. They used cross sectional data of a sample of 13 642 individuals of the economic active class (aged 15 to 65). The study employed the multinomial logit and ordered probit model to analyze the factors determining participation in the informal sector. Education level was found to be significant and negatively related to informal sector participation. On the other hand, age was found to be significant and positively related to informal sector participation.

Khan and Khan (2006) examined the participation of women in the informal sector using cross sectional primary data from households with at least a women working in the informal sector in Bahawalpur, Pakistan. The study employed the Ordinary Least Squares (OLS) model using data from a sample of 255 households. Women as head of house, education level, household poverty, household size and ownership of asset by women were significant and positively related to women's informal sector participation.

Using a sample of 570 households from Trinidad and Tobago, Sookram, *et. al.*, (2005) carried out a study to investigate the characteristics of households participating in the informal sector. Multinomial logit and ordered probit models were used for regression analysis. The results indicated that government regulations and the number of dependants were positively related to informal sector participation. The tax aversion detection risk was found to have a negative relationship with the individual informal sector participation.

In line with Bagachwa and Naho (1995), Chipeta (2002) did an empirical study to estimate the size of informal sector of Malawi for the period of 1972 to 1990. He employed the Tanzi approach or Currency Demand Approach. The informal sector was found to be contributing more to GDP as compared to the formal sector. Since the informal sector is labour intensive and entrepreneurs uses less capital, it means the widening in its size was linked to employers and employees participation in the informal sector. The study found unemployment levels, corruption and poverty levels to be significant and positive related to the informal sector size.

Dogrul (2012) examined the determinants of the formal and informal sector employment in the urban areas of Turkey. The Multinomial logit model was applied to cross sectional data from a

sample of 8558 households Results reveal that marital status, household headship, age and the level of education were significant and positively impacted on informal sector employment.

Sibhat (2004) investigated the causes of the informal sector participation using cross sectional primary data from vendors in Addis Ababa in Ethiopia. The study employed the logit model using data from a sample of 91 street vendors. Employment seeking, age, gender and migration status were significant and positively impacted on the individual informal sector participation.

Williams and Martinez (2014) investigated if entrepreneurship in the informal sector is a result of too little or too much state intervention. The authors wanted to unpack the conflicting sentiments that too much or too little government intervention broaden participation in the informal sector. In their study, they used cross sectional data with a sample of 595 United Kingdom small to medium entrepreneurs. The results revealed that men and younger entrepreneurs were more likely to be participating in the informal sector if there is too much government intervention. This means that complex bureaucratic procedures, taxes and red tape (corruption) were positively related to the informal sector participation. Increasing tax burden drives entrepreneurs to participate in the informal sector (Schneider, 2004)

In Nigeria, Igudia, et. al., (2016) carried out a study on the factors responsible for the widening of the informal economy. The study used cross-sectional primary data collected from a sample of 1200 individuals. The Multiple Indicator and Multiple Causes (MIMIC) model was applied to study the factors responsible for the widening of the informal economy. Survival, corruption, unemployment and tax avoidance were statistically significant and positively related to the widening of the informal sector.

2.3 Conclusion

This chapter provides an insight on the variables to be used for analysis. These variables include age, gender, marital status, level of education, vocational training, formal sector employment status, taxes, government regulations and linkages. are to be used for analysis. The discussion under this chapter provided an insight that logit model can be applied to answer the research questions. The fact that the significance and effects of variables vary from place to place, means that findings from one area cannot be generalized to another area. The following chapter presents the methodology, the model and the estimation technique employed in this study.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter specifies the empirical model applied to explore the determinants of the informal sector participation in Zimbabwe. The chapter outlines the procedures and the techniques used to identify the determinants of the informal sector participation. In addition, it elaborates the sampling procedures and techniques for sample size determination and data collection. Model variables which were logically deduced from literature review are going to be justified in this chapter. Finally estimation procedures and pre and post estimation tests are going to be laid out.

3.1 Theoretical model and justification

The study employed the binary choice model to identify the factors that determine the informal sector participation. Since the dependent variable is binary (that is a value of one (1) for participating in the informal sector and zero (0) otherwise), the model applicable is premised in the binary choice models. These models include the Ordinary Least Squares (OLS) or Linear Probability Model (LPM), the Logit and the Probit. However, the study avoided the use of LPM (OLS) because it suffers from the econometric problems. The major problem is that LPM predictions go outside the probability range. In addition its error term suffers from heteroskedasticity and normality absents. This results in unrealistic constant marginal effect and no use of the R-squared. Hence, OLS is biased and inconsistent for discrete dependent variable models because it assumes linearity whilst binary dependent variable is non-linear (Wooldridge, 2005).

With the above limitations, the Maximum Likelihood Estimation (MLE) techniques (that is, Logit and Probit) are the only options that can be used for analysis (Cameron & Trivedi, 2005). The logit and probit models assume a logistic and a normal distribution of the error term, respectively. Quantitatively, both models yield comparable results where $\hat{\beta}_{probit} = 0.556\hat{\beta}_{logit}$ or $\hat{\beta}_{probit} = 0.625\hat{\beta}_{logit}$ given the mean for data available is zero (zero). Therefore, one can safely choose either the logit or probit for binary dependent variable models (Amemiya, 1985). However, Ravallion (2001) and Baker (2000) postulated that the logit is preferred to the probit because its assumption of having a logistically distributed error term gives consistency parameter

estimates. In the bounds, a logit regression model has more density mass (Caliendo & Kopeinig, 2005). For these reasons, the study employed the logit model. The MLE chooses values for parameter estimates (regression coefficients) that make the probability of getting a particular dependent variable outcome as large as possible.

3.1.1 The Logit Model

MLE procedure was used to estimate the regression coefficients applying the odds ratio. The Logit model uses Cumulative Logistic Distributive Function (Wooldridge, 2005). The predictive value of an event or the probability that an event can occur lies between 0 and 1 range. The general form of the empirical model is specified as follows:

$$Y_i = B_0 + B_i X_i + \mu_i \quad (1)$$

Where:

Y_i represents the dependent variable (informal sector participation status), β_0 is a constant coefficient, β_1 is a vector of parameters of X_i to be estimated, X_i is a vector of explanatory determinants of the informal sector participation, and μ_i is the error term

Using a latent variable, Y_i^* representing Y_i takes a value of one (1) with a probability of success P_i and otherwise zero (0) with a probability of failure $1 - P_i$. This can be summarized by the notation below:

$$Y_i = \begin{cases} 1 & \text{if } Y_i^* > 0 \\ 0 & \text{Otherwise} \end{cases} \quad (2)$$

The model's form taking probabilities is given as follows:

$$P_i = Pr(Y_i = 1|X_i) = \frac{1}{1+e^{-(\beta_0+\beta_i X_i+\mu_i)}} \quad (3)$$

Where:

P_i is the probability of success (probability of an individual being an informal sector participant);

Substituting $\beta_0 + \beta_i X_i + \mu_i$ in equation (1) by Z_i for ease of exposition gives:

$$P_i = Pr(Y_i = 1|X_i) = \frac{1}{1+e^{-Z_i}} = \frac{e^{Z_i}}{1+e^{Z_i}} \quad (4)$$

Equation (4) represents a Cumulative Logistic Distributive Function. P_i is non-linear in Z_i , meaning that OLS cannot be used. To linearize the expressions above, log of odds ratio (ratio of probability of success to failure) can be applied. Given that P_i in equation (3) and (4) represents the probability of success, it follows that $1 - P_i$ is the probability of failure. $1 - P_i$ (the probability of an individual not participating in the informal sector) is expressed as follows:

$$1 - P_i = Pr(Y = 0|X_i) = \frac{1}{1+e^{Z_i}} \quad (5)$$

Therefore, the odds ratio is given by:

$$\frac{P_i}{1-P_i} = \frac{Pr(Y=1)}{Pr(Y=0)} = e^{Z_i} \quad (6)$$

Taking natural logarithms to both sides of equation (6) gives the Logit model expressed as:

$$\ln\left(\frac{P_i}{1-P_i}\right) = \ln(e^{Z_i}) \quad (7)$$

Re writing the equation (7) by substituting log of odds ratio by L_i and expanding Z_i for ease of exhibition gives:

$$L_i = Z_i = B_0 + B_i X_i + \mu_i \quad (8)$$

Regardless of Z_i being linear in parameters, the probabilities are not linear.

3.2 Empirical model

The empirical model is the functional form of the model in this study. The model employed in this study is adapted from the empirical model applied by Gakere (2006). In this study the empirical model is specified as follows:

$$P(ISPS_i = 1|X) = \beta_0 + \beta_1 Age_i + \beta_2 MaS_i + \beta_3 GD_i + \beta_4 EDU_i + \beta_5 VT_i + \beta_6 HI_i + \beta_7 HS_i + \beta_8 FSEH_i + \beta_9 Lnk_i + \beta_{10} Txn_i + \beta_{11} GvtR_i + u_i \quad (9)$$

3.3 Definition and justification of variables

Variable selection is based on theoretical and empirical literature review and our perception on socio-economic factors that determines informal sector participation.

Informal Sector Participation Status (ISPS)

Informal sector participation status is a binary dependent variable in the model. A value of one (1) is assigned if the respondent (head of household) is a participant in the informal sector and zero (0) otherwise.

Age (*Age*)

This is a continuous variable measuring the age of the household head in years. The study expects the individual's participation in the informal sector to be positively related to his or her age. The respondent is more likely to participate in the informal sector past retirement age or after being retrenched (Gakere, 2006). This may be due to availability of capital in the form of retirement packages or savings. Also as people become older, they may need more business freedom and work flexi hours.

Marital status (*MaS*)

Marital status is coded with a value of one (1) if the respondent is married and a value of zero (0) if not married. Anderson (1998) and Schneider *et. al.* (2001) identified marital status to determine household's participation in the informal sector. In addition, Gakere (2006) and Igudia *et. al.* (2016) used the same factor and found a direct relationship between marital status and the informal sector participation. This implies that married household heads are more likely to participate in the informal sector than their unmarried counter parts. From this evidence, marital status is expected to carry a positive sign.

Gender (*Gnd*)

This variable is captured as a dichotomous variable. A value of one (1) and zero will be attached to female and male individual, respectively. From empirics literature, Mintah and Darkwah (2018) and Aikaeli and Mkenda (2014) found that being a female household head increases the likelihood of participating in the informal sector. In Ghana, Tuffour (2019) pointed that Ghanaian informal sector is dominated by female vendors. Therefore, being a female respondent is expected to increase the likelihood of being an informal sector participant. Therefore, gender is hypothesized to carry a positive sign.

Household income (*HI*)

This variable is used as a continuous variable. It measures the respondent's household average disposable income per month in United State Dollars (USD). Inclusion of this variable is informed by the Dualists. The empirical literature revealed that Gakere (2006) found that individuals with low incomes are more likely to participate in the informal sector. Also, those with low salaries are likely to participate in the informal sector (Aikaeli & Mkenda, 2014). Most individuals are participating in the informal sector due to unmet household budgets (Khan & Khan, 2006). From this background, household income is expected to be negatively related to the informal sector participation.

Household size (*HS*)

This is a continuous variable measuring the number of household members. The larger the household size the more the required household's survival basket. Individuals from large households may participate in the informal sector to either supplement or extract household needs. This is because the larger the household size, the lower the household's per capita income. Khan and Khan (2006) and Traore (2012) found that the greater the household size the higher the probability of the household head to participate in the informal sector. The study expects this variable to carry a positive sign.

Education (*Edu*)

This variable is captured as categorical variable. Education represents the individual's highest level of education. The variable is measured using the following codes: no education = 1, primary education = 2, secondary education = 3 and tertiary education = 4. Gallaway and Bernasek (2002) pointed out that the level of education affects individuals' probability of being a participant in the informal sector. Igudia *et. al.* (2016) found that, individuals' participation in the formal sector was influenced by the level of education. From literature revealed that low levels of education increases the probability of an individual to be a player in the informal sector (Pradhan and van Soest, 1995; Mintah and Darkwah, 2018). Thus, education is hypothesized to be negatively related to the informal sector participation. This means that those with higher levels of education are expected to participate less in the informal sector.

Vocational training (*VT*)

Vocational training is a binary variable measured with a value of one (1) if an individual received vocational training and zero (0) otherwise. Since the informal sector is dominated by labour intensive activities, vocational training empowers individuals to be industrious as they participate in the informal sector. From the empirical literature, Gakere (2006) found that individuals with vocational training are more likely to participate in the informal sector. This is due to the reason that there may be higher demand for vocational skills in the informal sector than the formal sector. A priori belief is that the variable is positively related to the informal sector participation.

Formal Sector Employment History (*FSEH*)

Formal sector employment history is a categorical variable. The formal sector employment history of the respondent is coded as follows: currently employed = 1, retired from the formal sector = 2, retrenched from the formal sector = 3 and never employed in the formal sector = 4. The inclusion of this variable is informed by the dualist school of thought. Kumabwa (2002) argues that the informal sector absorbs those who are failing to acquire employment in the formal sector. Modernists school of thought argued that the informal sector exists to absorb the jobless (Chen, 2012). Those unemployed (retrenched and never employed) in the formal sector are more likely to participate in the informal sector (Pradhan & Van Soest, 1995). From this, an individual is more likely to participate in the informal sector if he or she is jobless. Therefore, a positive relationship is hypothesized between the formal sector employment history and the informal sector participation.

Government regulations (*GvtR*)

This is a dichotomous variable. It takes a value of one (1) when the individual perceives government regulations as burdensome and zero (0) otherwise. The regulations such as licensing, registration, labour market regulations, social security regulation, property rights legislation and other legislations may cause bottlenecks in firm's running (Hart, 2012; Schneider *et. al.*, 2010). In order to avoid such bottlenecks, individuals may opt to operate informally. The empirical review gave evidence that burdensome government regulations are likely to push individuals to participate in the informal sector (Sookram *et. al.*, 2005; Williams and Martinez, 2014). Thus,

the study is hypothesizing a positive relationship between government regulations and the informal sector participation.

Taxation (*Txn*)

This variable is a binary variable in the model. It is coded as one (1) if an individual perceives that taxation is burdensome and zero (0) otherwise. Higher taxes may result in some economic players opting to operate in the informal sector. According to Igudia *et. al.* (2016) tax avoidance becomes excessive as the informal sector participation widens. From the empirical literature, Williams and Martinez (2014) found that individuals are more likely to participate in the informal sector if taxes are high. The study is hypothesizing taxation to be positively related to the informal sector participation.

Linkages (*Lnk*)

This variable is captured as a dummy variable. It takes a value of one (1) if the respondent perceives existence of interdependence (linkages) between the informal and the formal sector and a zero (0) if otherwise. Chidoko and Makuyana (2012) argued that the formal sector operators do sub-contract the informal sector participants to improve competitiveness. The structuralist argues that the mutually dependents between the two sectors influences some players to take part in the informal sector (ILO, 2005). Bromley (1978) argues individual participate in the informal sector because of the interdependency between the informal and the formal sector. Thus, a positive relationship is expected between linkages and the informal sector participation.

3.4 Sampling techniques and data collection

3.4.1 Sampling techniques

Glenview is made up of three (3) wards (that is, ward 30, 31 and 32) with a total of 28823 households (Smart Harare, 2019). To determine the sample size, the study made use of the following formula by Krejcie and Morgan (1970):

$$\begin{aligned}
 S &= \frac{X^2NP(1-P)}{\partial^2(N-1)+X^2P(1-P)} & (10) \\
 &= \frac{[3.84(28823)(0.5)(0.5)]}{[0.05^2(28823-1)+3.84(0.5)(0.5)]}
 \end{aligned}$$

$$\frac{27670.08}{73.0175}$$

$$=379$$

Where: s is the required sample size, X^2 is the table value of chi-square for 1 degree of freedom at the desired confidence level (0.10=2.71, 0.05=3.84, 0.01=6.64 and 0.001=10.83), N is the population size, P is the population proportion (assumed to be .50 since this would provide the maximum sample size), d = the degree of accuracy expressed as a proportion (.05).

A sample size of 379 household represented by household heads is to be used to serve the purpose of this study. It is proportionally distributed basing on number of households in each ward. Thus, ward 30 contributed 178, ward 31 contributed 76 and ward 32 contributed 125 households. The table below shows how the population and sample size is distributed.

Table 1: Population and sample size distribution

Ward	Population distribution	Sample size distribution	Percentage
30	13551	178	47.01
31	5738	76	19.91
32	9534	125	33.08
TOTAL	28823	379	100

Source: Smart Harare (2019)

Too small sample may not fully represent the population whereas too large sample may induce inconveniences in handling data which results in inefficiency. For most researches, a sample size of 30 units to 500 units is appropriate and makes the study results appropriate for generalization to the study population (Roscoe, 1975).

To determine sample units, the study made use of non-probability sampling technique. Specifically, purposive non probability sampling is used. Purposive sampling, aims at selecting information-rich subjects for in-depth study. In purposive sampling, the sample is selected using the researcher's discretion purely taking into account the purpose of the study along with the understanding of the target audience.

Glenview is selected because it is known to be highly informal activity characterized suburb. It is in this suburb where the Glenview Furniture Complex (a highly informal activity complex) is located. Glenview Furniture Complex accommodates a large number of informal participants including retrenched personnel, graduates who failed to get formal employment and the victims of operation restore order (Glenview Furniture Complex Association Report, 2010). Also, due to limited time and financial resources, Glenview Suburb is selected.

3.4.2 Data collection

To achieve the objectives of this study, cross sectional primary data collected from households in Glenview high density suburb was used. The data collection exercise was carried out in May 2020 with the assistance of three assistant researchers.

A self-administered questionnaire was used for data collection. The questionnaire (see appendix A) used has structured questions which are pre-coded and close ended. Face to face personal interviews are used. Blair and Czaja (2005) postulated that face to face interviewing gives the researcher an opportunity to clarify questions to fit respondent's understanding. In addition, face to face interviews are employed to cater for those respondents who are illiterate. During the data collection process, only those who are willing to answer the research questionnaires are considered as sample units.

To determine the validity and reliability of the questionnaire, it was pre-tested using 15 respondents from each of the 3 wards in Glenview. Actually, this was done to identify questions that require more clarification and simplification of instructions and questions. The pre-test exercise allowed estimating the average time, labour and other resources required to collect information from the study area.

3.5 Estimation procedures

3.5.1 Diagnostic Tests

Multicollinearity test is carried to check for correlations between the explanatory variables. The Variation Inflation Factor (VIF) will be used to test multicollinearity. Variables with VIF value above 5 ($VIF > 5$) are correlated, that is multicollinearity exist (Ringle, et al., 2015).

3.5.2 Estimation

During model estimation, logistic regression and marginal effects are computed. For the logit model the marginal effect is given by:

$$\frac{\partial P_i}{\partial x_i} = \hat{\beta} \frac{\partial F(x_i \hat{\beta})}{\partial x_i} = \hat{\beta} \frac{\exp(-x_i \hat{\beta})}{(1 + \exp(-x_i \hat{\beta}))^2} \quad (11)$$

The logit model uses a cumulative distribution function derived from the logistic distribution function. To estimate the effects of different regressors on the informal sector participation, the model employs the Maximum Likelihood Estimator (MLE). Greene (2012) identifies the Maximum Likelihood as a technique used to come up with variable parameter's estimate that is asymptotically efficient.

The logit model is a non linear function of the odds ratios. Natural logarithms are applied to linearize and simplify the function. The resultant linearized function expresses log odds ratio function of regressors. Odds ratio shows the probability of participating in the informal sector to the probability of not participating in the informal sector. Under this study, odds ratios are defined as the ratio of the probability of the household head being a participant in the informal sector to the probability of the household head being a non-participant in the informal sector. A variable with odds ratio of greater than one implies the variable in question is positively correlated with the probability of the household head being a participant in the informal sector. On the other hand, a variable with odds ratio of less than one implies the variable is negatively correlated with the probability of the household head being a participant in the informal sector.

After logistic regression, marginal effects are computed. This gives a summarized quantitative effect that the independent variables have on dependent variable. Marginal effects are interpreted as a unit increase of the independent variable increases or decreases the probability of the household head being a participant in the informal sector by the magnitude of the marginal effect.

3.5.3 Post Estimation Test

To make sure the estimation model is reliable and correctly specified, the post-estimation (diagnostic) test is done. For logit model, Hosmer-Lemeshow test is done to test the goodness of fit. If the probability value is greater than 10% (0.1) in favour of the hypothesis of model being correctly specified, the model is regarded to be correctly specified.

3.6 Conclusion

The chapter gives an insight of the methodology used to identify the determinants of the informal sector participation. In addition, the chapter considers variable discussion and justification. Also, the chapter includes a discussion on the data collection techniques, sample selection and estimation procedures. The next chapter dwells much on presentation and interpretation of results.

CHAPTER FOUR

ESTIMATION, PRESENTATION AND INTERPRETATION OF RESULTS

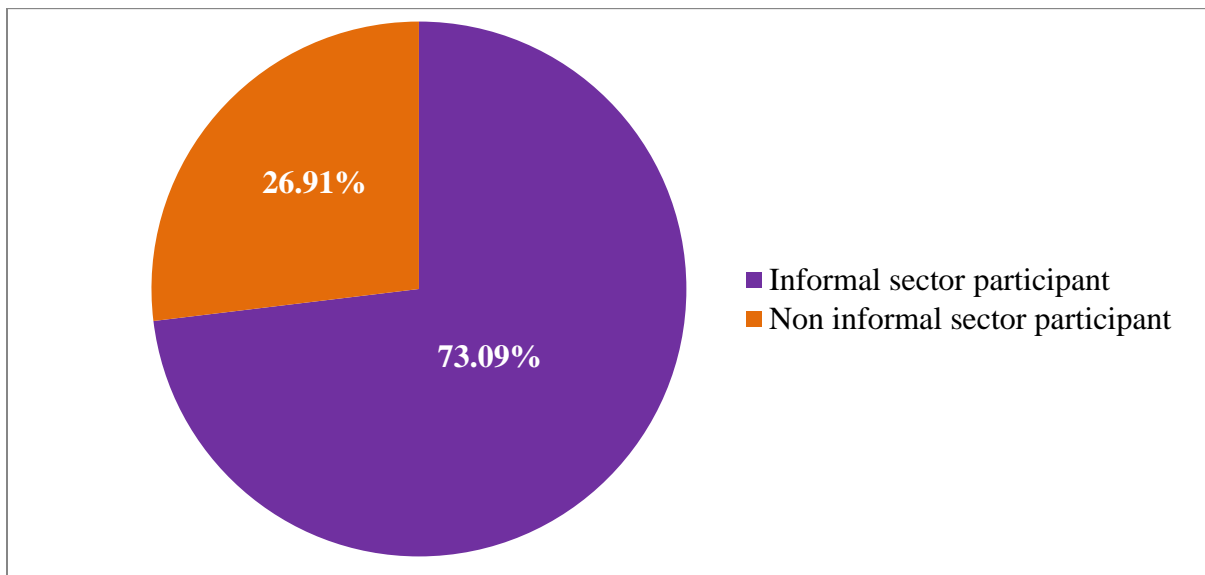
4.0 Introduction

This chapter presents and discusses the empirical results. It also presents the descriptive statistics, pre-estimation test, and post-estimation test results. As highlighted in Chapter 3, the logistic regression technique is employed for model estimation. For econometric regression, Stata Package Version 14.2 was used. In short, the chapter presents and discusses both the descriptive statistics and the regression results. The chapter is divided into four sections. Section 4.1 focuses on the descriptive statistics. Section 4.2 discusses the regression results.

4.1 Descriptive Statistics

The data for this study was collected from 379 household heads. A total of 277 out of 379 households heads are informal sector participants. This translates to informal sector participation prevalence rate of 73.09 percent. The proportion of the informal sector participants is presented in Figure 5 below.

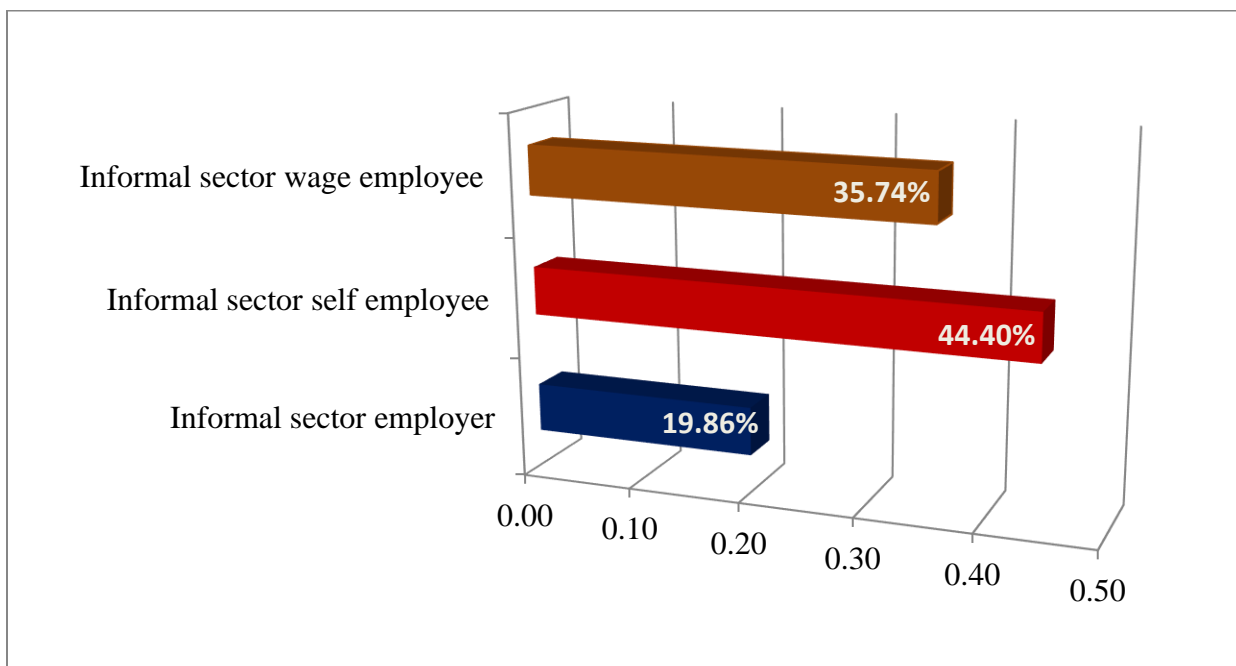
Figure 5: Proportion of the informal sector participants



The heads of households in the Glenview neighborhood are active in the informal sector as employers, self-employees or wage employees. Of the 277 informal sector participants, 55 (19.86%) are employers. They consist of 45 singles and 10 singles; 35 male and 20 female. The

mean age of the informal employers is 45. In addition, of the 277 informal sector participants, 123 (44.40%) are self-employed. Among the self-employed, 92 are married household heads whereas 31 are single; 65 men and 58 women and they are 42.2 years old on average. More so, 99 (35.74%) are wage employees. They consist of 72 married and 27 unmarried household heads, 57 males and 42 females. Wage employees are aged 43.68 at average. The figure 6 below shows the statistical proportions of the informal sector participants by their participation categories.

Figure 6: Proportion of the informal sector participants by their participation categories



From those participating in the informal sector, 66 (23.83%) household heads are participating in both the formal and the informal sector while 211 (76.17%) are participating in the informal sector only.

4.1.2 Descriptive statistics for continuous variables

There are three continuous variables in the data. These variables include age (Age), household income (HI) and household size (HS). The descriptive statistics for the continuous variables are represented in Table 2 below:

Table 2: Descriptive statistics for continuous variables

Variable	Informal sector participation status						Total population		
	Non-participant			Participant			Total population		
	Freq.	Mean	Std. Dev.	Freq.	Mean	Std. Dev.	Freq.	Mean	Std. Dev.
AGE	102	44.26	9.38	277	43.30	11.13	379	43.56	10.68
HI	102	221.88	126.21	277	145.04	100.82	379	165.72	113.33
HS	102	4.01	1.28	277	5.12	1.95	379	4.82	1.86

Table 2 above shows that on average household heads participating in the informal sector are younger and have bigger household sizes than those of non-participants. There is no much difference in terms of age and household sizes between participants and non-participants. The informal sector participants have an average age of 43.30 whilst the non-participants have an average age of 44.26. The average size of households of informal sector participants is 5.12 against 4.01 for non-participants. On the other hand, the informal sector players have monthly lower average household income of US\$145.04 as compared to US\$ 221.88 for the non-informal sector participants. The household income and household size statistics confirms the literature reviewed in chapter two. In literature, it was highlighted that the less the income and the more the household size, the more the household head is active in the informal sector (Aikaeli & Mkenda, 2014; Traore, 2012). However, age is not confirming to the expectations. This maybe induced by lack of formal sector employment opportunities for the young generation. Also, the young ones may be lacking some finances to formalize their activities. However, Angel-Urdinola and Tanabe (2012) found those participating in the informal sector to be younger than the non-participants.

On the other hand, there are eight categorical variables in the data. These variables are marital status (MS), gender (Gnd), education level (Edu), vocational training (VT), formal sector employment history (FSEH), government regulations (GvtR), taxation (Txn) and linkages (Lnk). The descriptive statistics for the categorical variables are represented on Table 3 below:

Table 3: Descriptive statistics for categorical variables

		Informal sector participation status				Total Sample	
		Non-participant		Participant			
Variable	Category	Freq.	Percentage	Freq.	Percentage	Freq.	Percentage
MS	Married	56	54.90	209	75.45	265	69.92
	Not married	46	45.10	68	24.55	114	30.08
	Total	102	100.00	277	100.00	379	100.00
Gnd	Female	36	35.29	120	43.32	156	41.16
	Male	66	64.71	157	56.68	223	58.84
	Total	102	100.00	277	100.00	379	100.00
Edu	No education	6	5.88	34	12.27	40	10.55
	Primary	12	11.76	67	24.19	79	20.84
	Secondary	43	42.16	135	48.74	178	46.97
	Tertiary	41	40.20	41	14.80	82	21.64
	Total	102	100.00	277	100.00	379	100.00
VT	Received	21	20.59	73	26.35	94	24.80
	Not received	81	79.41	204	73.65	285	75.20
	Total	102	100.00	277	100.00	379	100.00
FSEH	Currently	51	50.00	25	9.03	76	20.05
	Retired	20	19.61	24	8.66	44	11.61
	Retrenched	23	22.55	44	15.88	67	17.68
	Never	8	7.84	184	66.43	192	50.66
	Total	102	100.00	277	100.00	379	100.00
GvtR	Burdensome	40	39.22	200	72.20	240	63.32
	Not burdensome	62	60.78	77	27.80	139	36.68
	Total	102	100.00	277	100.00	379	100.00
Txn	Burdensome	30	29.41	183	66.06	213	56.20
	Not burdensome	72	70.59	94	33.94	166	43.80
	Total	102	100.00	277	100.00	379	100.00
Lnk	Linkages	37	36.27	158	57.04	195	51.45
	no linkages	65	63.73	119	42.96	184	48.55
	Total	102	100.00	277	100.00	379	100.00

Table 3 shows that 69.92% of the sample are married, while 30.08% are unmarried. Amongst the informal sector participants 75.45% are married, while 24.55% are not married. Of the informal sector non-participants, 54.90% are married, whilst 45.10% are not married. Generally, it means that those married are dominating the informal sector.

41.16% of the household heads considered in the sample are females, whereas 58.84% are males. From the 277 informal sector participants, 120 (43.32%) are female while the remaining 157 (56.68%) are their male counterparts. On the other hand, from those who are not participating in the informal sector, 36 (35.29%) are female while 66 (64.71%) are male. Therefore, a higher proportion of females than males is participating in the informal sector.

From the total sample household heads, 10.55% have no education, 20.84% attained primary education, 46.97% attained secondary school and the remaining 21.64% attained tertiary education. Out of the 277 informal sector participants, 34 (12.27%) have no education, while 67 (24.19%) attended primary education. Also among the participants, 135 (48.74%) attended secondary education whereas 41 (14.80%) attended tertiary education. From the 102 non participants, 5.88% have no education, 11.76% have primary education as their highest level of education, 42.16% have secondary education and 40.2% have tertiary education. In other words, a higher education level therefore limits the number of participants in the informal sector.

From the total sample, 24.80% received vocational training, while 75.20% did not receive vocational training. 204 (73.65%) of the participants in the informal sector did not receive vocational training, while 73 (26.35%) did receive vocational training. Out of 102 non-participants, 81 (79.41%) did not receive vocational training, while 21 (20.59%) did receive vocational training. Regarding vocational training, the statistics shows that there is no much difference between the participants and non-participants. However, those with vocational training are more likely to be participants in the informal sector than those who did not received vocational training.

Out of the 277 informal sector participants, 25 (9.03%) are currently employed, 24 (8.66%) are retired, 44 (15.88%) are the laid-off (retrenched) and 184 (66.43%) were never employed in the formal sector. From the 102 informal sector non-participants, 51 (50%) are currently employed, 20 (19.61%) are retired, 23 (22.55%) are the laid-off (retrenched) and 8 (7.84%) were never

employed in the formal sector. Accordingly, the informal sector is dominated by those who have never worked in the formal sector.

63.32% of the sample regards government regulations to be burdensome, while 36.68% regards government regulations not a burden. Of the informal sector participants, 200 (72.20%) regards government regulations as burdensome, while 77 (27.80%) do not regard them as burdensome. On the other hand, 40 (39.22%) of the non-participants regards government regulations as burdensome, while 62 (60.78%) do not regard them as burdensome. Accordingly, the informal sector is broadly filled with those who regard government regulations as burdensome.

56.20% of all the household heads in the sample regards the taxation to be burdensome, while 43.80% regards the taxation to be not a burden. Of the informal sector participants, 183 (66.06%) regards taxation as burdensome, while 94 (33.94%) do not regard them as burdensome. From the non-participants, 30 (29.41%) regards taxation as burdensome, while 72 (70.59%) do not regard it as burdensome. Thus, those who regard taxation to be burdensome participate more in the informal sector than the formal sector.

Of the 379 sample, 195 (51.45%) testified the existence of formal and informal sector linkages, while 184 (48.55%) did not testify the existence of linkages. 158 (57.04%) of the participants regard existence of linkages, while 119 (42.96%) did not testified linkages existence. On the other side, 37 (36.27%) of the participants regard existence of linkages, while 65 (63.73%) did not testified linkages existence. Generally, those who regard linkages to exist participate more in the informal sector than the formal sector.

4.2 Pre-Estimation Test Results

Table 4: Variation Inflation Factor (VIF) Result

VARIABLE	VIF	1/VIF
Age	1.22	0.818081
MaS	1.06	0.945914
Gnd	1.06	0.939626
Edu		
Primary	2.38	0.420790

Secondary	2.94	0.339944
Tertiary	2.58	0.387985
VT		
	1.03	0.968520
HI		
	1.13	0.887746
HS		
	1.09	0.915626
FSEH		
Retired	1.64	0.609375
Retrenched	1.63	0.615118
Never	2.05	0.488222
Lnk		
	1.07	0.934225
Txn		
	1.09	0.916053
GvtR		
	1.14	0.879998
Mean VIF	1.54	

The VIF results in table 4 and Appendix B shows that there is no multicollinearity problem among the independent variables. The entire VIF values are less than 5, meaning there is absence of perfect multicollinearity among explanatory variables.

4.3 Post-Estimation Test Results

Table 5: Hosmer-Lemshov Test Results

Number of observation	397
Pearson chi2(363)	293.18
Prob>chi2	0.9971

To check if the estimation model is reliable and correctly specified, Hosmer-Lemeshow test is applied. The results from the Hosmer-Lemeshow Test in Table 5 and Appendix D show that the model is reliable and correctly specified. This is because the probability value in favour of the hypothesis is 0.9971 that is more than 0.1.

4.4 Estimation Results

The results of the logistic regression and marginal effects are represented in this section. The p-value is used to test the statistical significance of the coefficients of the explanatory variables. A regressor is considered to be statistically significant if its p-value is less than the conventional significance level (0.01, 0.05 and 0.1). The results also reveal the direction of the relationship between the informal sector participation status and the covariates.

4.4.1 The Logistic Regression Results

Table 6 and Appendix C below shows the logistic regression results.

Table 6: The Logistic Regression Results

Log likelihood = -107.34621				Number of obs = 379		
				LR chi2(15) = 226.76		
				Prob > chi2 = 0.0000		
				Pseudo R2 = 0.5137		
ISPS	Coef.	Std. Err.	z-value	p-value	[95% Conf. Interval]	
Age	0.0055	0.0205	0.27	0.788	-0.0346	0.0456
MaS	0.4669	0.3757	1.24	0.214	-0.2695	1.2033
Gnd	0.9751**	0.3845	2.54	0.011	0.2216	1.7286
Edu						
Primary	0.8702	0.7310	1.19	0.234	-0.5625	2.3029
Secondary	0.1092	0.6072	0.18	0.857	-1.0809	1.2992
Tertiary	-0.9085	0.6595	-1.38	0.168	-2.2011	0.3841
VT						
VT	0.2054	0.4370	0.47	0.638	-0.6511	1.0620
HI						
HI	-0.0046***	0.0016	-2.87	0.004	-0.0078	-0.0015
HS						
HS	0.2853**	0.1141	2.50	0.012	0.0618	0.5088
FSEH						
Retired	0.3213	0.5704	0.56	0.573	-0.7967	1.4394
Retrenched	1.2609***	0.4599	2.74	0.006	0.3596	2.1623
Never	3.5929***	0.5215	6.89	0.000	2.5708	4.6150

Lnk	1.0802***	0.3708	2.91	0.004	0.3534	1.8070
Txn	1.3775***	0.3606	3.82	0.000	0.6707	2.0843
GvtR	1.1604***	0.3731	3.11	0.002	0.4292	1.8916
Cons	-3.739***	1.2755	-2.93	0.003	-6.2384	-1.2386

*** $p < 0.01$ represents 1%, ** $p < 0.05$ represents 5%, * $p < 0.1$ represents 10%, level of significance.

From the Table 6 above gender, household income, household size and formal sector employment status (retrenched and never employed) are the significant variables. The significant variables also include linkages, taxation and government regulations. From those significant variables which are positively related to the informal sector participation, the coefficients of formal sector employment status (retrenched and never employed), linkages, taxation and government regulations are statistically significant at 1 percent level of significance, whereas gender and household size are statistically significant at 5 percent level of significance. The coefficient of household income is negative and significant at 1 percent level of significance. Age, marital status, education level, vocational training, formal sector employment status (retired) are the insignificant variables. All the covariates except household income and tertiary education are positively related to the informal sector participation.

4.4.2 The Marginal Effects Results

The marginal effects are computed to give the magnitude or quantitative effects of changes in explanatory variables on informal sector participation status. Instead of interpreting the logistic regression, the marginal effects are interpreted. This is because logistic regression results are likely to overestimate the effect of the regressors on the dependent variable, for instance taxation log ratio in favour of being an informal sector participant is 1.3775 that is greater than 1. The marginal effects results are shown on Table 7 and Appendix E.

Table 7: Marginal Effects Results

Delta-method						
Variable	dy/dx	Std. Err.	z-value	p-value	[95% Conf. Interval]	
Age	0.0005	0.0018	0.27	0.788	-0.0030	0.0040

MaS	0.0406	0.0323	1.26	0.209	-0.0228	0.1039
Gnd	0.0847****	0.0322	2.63	0.009	0.0216	0.1479
Edu						
Primary	0.0755	0.0634	1.19	0.234	-0.0488	0.1997
Secondary	0.0101	0.0563	0.18	0.858	-0.1003	0.1205
Tertiary	-0.0904	0.0654	-1.38	0.167	-0.2186	0.0379
VT						
VT	0.0179	0.0379	0.47	0.638	-0.0565	0.0922
HI	-0.0004****	0.0001	-3.02	0.003	-0.0007	-0.0001
HS	0.0248**	0.0096	2.58	0.010	0.0060	0.0436
FSEH						
Retired	0.0510	0.0904	0.56	0.573	-0.1262	0.2282
Retrenched	0.1897****	0.0682	2.78	0.005	0.0561	0.3233
Never	0.4113****	0.0579	7.10	0.000	0.2978	0.5248
Lnk						
Lnk	0.0939****	0.0309	3.04	0.002	0.0334	0.1544
Txn	0.1197****	0.0287	4.17	0.000	0.0635	0.1760
GvtR	0.1009****	0.0308	3.28	0.001	0.0405	0.1612

*** $p < 0.01$ represents 1%, ** $p < 0.05$ represents 5%, * $p < 0.1$ represents 10%, level of significance.

The results show that being a female headed household increases the probability of being an informal sector participant by 8.47% than being a male headed household. This means that females tend to participate more in the informal sector than males. This may be due to gender discrimination in the formal sector which pressurizes females to concentrate more on the informal sector participation. Since most females concentrate on temporary and low level formal sector jobs, the reduction in formal sector employment tend to affect females most. Studies by Aikaeli and Mkenda (2014) and Mintah and Darkwah (2018) also found the same result.

Each additional dollar on household income decreases the probability of the household head being an informal sector participant by 0.04%. There is an inverse relationship between the informal sector participation and household income. This is so because those with low incomes

may be striving to meet the household budget by operating in the informal sector. Most of informal sector participants have insufficient household income to meet family needs. Gakere (2006) used household income and found the same results in Kenya. The same results were found by Aikaeli and Mkenda (2014) in Tanzania.

The probability of being an informal sector participant increases by 2.48 percent with a unit increase in the household size. The study therefore confirms the positive relationship between household size and informal sector participation found by Khan and Khan (2006) and Traore (2012). The larger the household size may be the more the required household's survival basket. Household heads of large households may be pushed into the informal sector due to additional survival requirements induced by the household size.

The results show that being a retrenched headed household increases the probability of being an informal sector participant by 18.97% than being a currently employed headed household. Furthermore, being a never employed headed household increases the likelihood of being an informal sector participant by 41.13% than being a currently employed headed household. The results concur with the modernists, who assert that the informal sector exists to absorb the jobless (Chen, 2012). The results are in same line with those of Pradhan and van Soest (1995) who found that those unemployed in the formal sector are more likely to participate in the informal sector.

The results revealed that being a household headed by one who regards existence of linkages increases the likelihood of being a participant by 9.39% than the probability of being headed by one who does not regard existence of linkages. The linkage or interdependence between the informal and the formal sector is likely to encourage household heads to participate in the informal sector. As noted by Bromely (1978), individuals may participate in the informal sector the more the interdependencies (linkages) between the informal and the formal sector. The dualists argue that informal sector operations have little (or no) relationship with the formal sector operations (Sethuraman, 1976; Tokman, 1978). Contrary to the dualists, structuralists consider the informal and formal sector to be closely related. To increase competition, capitalist organizations in the formal sector appear to reduce input and labor costs by promoting informal relationships of production and employment with subordinated economic and labor units. According to structuralists, informal enterprises and informal workers are among the interests of

capitalist development that offer cheap goods and services (Moser, 1978; Portes, et. al., 1989). The legalists focus on the relationship between informal sector entrepreneurs and the formal legal environment, not on the formal business. However, they recognize that capitalist ideology, what Hernando de Soto calls "mercantilist interests", conforms to government 'rules of the game' (de Soto, 1989).

The results reveals that being a household head who regards taxation as burdensome increase the likelihood of participating in the informal sector by 11.97% than being a household head who regards taxation as not burdensome. High marginal costs of personal income tax and high marginal costs of corporate income tax are likely to encourage both employees and entrepreneurs be players in the informal sector. This was supported by Williams and Martinez (2014) who used the same variable and found that individuals are more likely to participate in the informal sector if taxes are high.

The results shows that being a household head who regards government regulations as burdensome increases the probability of participating in the informal sector by 10.09% than being a household head who regards government regulations as not burdensome. Having burdensome government regulations such as licensing, registration, labour market regulations, social security regulation, property rights legislation and other legislations are likely to cause bottlenecks in economic agents operations. Thus, having burdensome government regulations pushes household heads to participate in the informal sector. These results are consistent with those of Sookram et. al. (2005) and Williams and Martínez (2014).

4.5 Conclusion

This chapter presented and discussed the descriptive statistics, logistic regression results and marginal effects results. The study found that informal sector participation prevalence is high in Glenview. In addition, gender of the household head, household income, household size, formal sector employment history of the household head (retrenched and never employed), linkages, taxation and government regulations significantly influence the household heads' decision to be participants in the informal sector. The next chapter presents the study summary, conclusion and policy implications and recommendations.

CHAPTER FIVE

SUMMARY, CONCLUSION AND POLICY RECOMMENDATIONS

5.0 Introduction

The chapter presents a summary and conclusion of the study. Policy recommendations of this study are also outlined. Policy recommendations are informed by the empirical results of this study. Limitations of the study and suggestions of further research conclude this chapter.

5.1 Summary and Conclusions of the Study

The study sought to identify the factors influencing the economic agents' decision to participate in the informal sector. This study was driven by the desire to understand notable sharp increase in the informal sector participation in Zimbabwe. In an effort to identify the determinants of the informal sector participation, cross sectional data was used. Data was collected using a structured questionnaire from a sample of 379 household heads in Glenview Suburb, Harare, Zimbabwe during the month of May 2020. The econometric estimation of the informal sector participation model was done using the ML estimation technique. The binary choice estimation model, variable and pre and post-estimation test were guided by both the empirics and theories reviewed in chapter two.

Descriptive statistics revealed that 73.09 percent of the household heads in Glenview are informal sector participants. After applying the logistic regression model, the study identified that the statistically significant determinants of informal sector participation included; gender, household income, household size, formal sector employment status (retrenched and never employed), formal and informal sector linkages, taxation and government regulations. Besides household income, all the statistically significant variables are positively related to the informal sector participation status. Therefore, the findings are consistent with the *priori* expectations from chapter three.

5.2 Policy Implications and Recommendations

The informal sector provides a vital basis of economic sustenance, on which the majority of Glenview residents are economically reliant. From the findings of this study, appropriate policy

implications and recommendations are drawn from variables that were found to be statistically significant in determining the informal sector participation. The determinants of the informal sector participation are not homogeneous everywhere.

From the study, females are implied to be discriminated in the formal sector. In addition, some females have no required education and skills for formal sector employment. So strong gender equality interventions targeting female access to education are needed so that females can compete with their male counterparts in the informal sector. On the other hand, informal sector employers should be educated about gender discrimination. This promotes female to be non-informal sector participants. More so, the government should strengthen its social welfare and income redistribution and equality policies. These policies will also help the country in attaining the Sustainable Development Goal (SDG) 5 of the United Nation (UN) Agenda 2030. Since male are less likely to participate in the informal sector than females, government is recommended to implement policies directed at stimulating male participation in the informal sector.

Since the informal sector is the major employer of the poor, the government should invest in job creation to offer employment and alleviate poverty. In doing so the government needs to apply the principles argued by Keynes when he said that government should hire labour to dig a pit and hire some to fill that same pit to create demand. The demand created may help to improve production which requires more labour, thereby creating employment that contributes to poverty reduction in Zimbabwe overtime. It can be noted from the study findings that policy makers may consider provision of improved, consistent and stable household income when crafting policies. More so, the government should strengthen its social welfare and income redistribution and equality policies. These policies will also help the country in attaining the Sustainable Development Goals (SDGs) – UN Agenda 2030 mainly SDG 1, 2 and 10.

Higher household size translates to higher quantity of daily required. On the other hand, the larger the household size, the lower the per capita income. To lessen pressure from low per capita income in a household, the government can consider subsidizing basic goods and service. This may also be in the form of free health and education or having educational grants to reduce burden by having a bigger household size. To cut household head burden, the government is also recommended to use health policies (such as birth controls) to control fertility.

Given that the government wants to reduce the size of the informal sector, it is recommended that it facilitates the provision of formal employment. This can be done by facilitating employment by crafting a conducive environment for the formal private sector to employ more labour. Government should make sure that it provides adequate infrastructure, business security and policy consistency that will help to bring high production and activity by the private sector, which calls for more labour. The government can also encourage the use of apprenticeship systems to train those with the private sector required skills gap. In addition, government should implement policies encouraging early formal sector retirement. This opens the formal sector employment opportunities for school leavers and reduces the formal sector retrenchment and the never employed rate.

On linkages, the government should facilitate policies aiming at encouraging informal sector and formal sector to share cost and benefits. This can be done by coming up with a percentage interval that contracted party should earn from the net value of the project. The government should implement policies to protect the informal sector participants from formal sector parasitic behavior of dumping below standard products. The government should not break linkages as this may create contraction of output and may destruct the informal sector pillars. Destroying the informal sector may point to severe social unrest since it is the survival base of the majority (about 73.09% of household heads are informal sector participants). According to Todaro (1981) the informal sector is generating employment by making use of labour intensive technologies.

It is recommended that tax policies should be addressed as they may act as barriers of entry into the formal sector. This includes crafting the tax head like the presumptive tax, income tax, value added tax and property tax. The taxation system should be revised since burdensome taxation normally high tax rates may force household heads and other economic agents to participate in the informal sector as a way of concealing their incomes.

It is recommended that the government should put in place ease of doing business policies. These policies should be based on fundamental premise of good rules and regulations. In other words, government is recommended to implement ease of doing business policies, otherwise hostile regulations will push most business operators to participate in the informal sector. These ease for doing business policies includes attending company registration laws, construction permits,

registering property, labour market laws and enforcing contracts among others. Actually, legislators are recommended to draw lessons from those countries such as China and Brazil that managed to develop the informal sector into Small to medium enterprises that contribute to the national development.

5.3 Limitations of the Study and Suggestions of Further Research

Due to time and financial constraints, the study only considered Glenview High Density Suburb, Harare Metropolitan Province, Zimbabwe. Further studies are suggested on the same topic at provincial and national level in order to give a reliable and significant guide to policymakers. Also, to bring more information to interested parties, further studies are encouraged to identify the determinants of informal participation in each and every sector, say, manufacturing, agriculture, transport and trading. Since the informal sector is dominating the Zimbabwean economy, research should be extended to the contribution of the informal sector to poverty alleviation.

This study did not investigate the impact of behavioural, religious, geographical and cultural factors on informal participation. Since the study found that gender, household income, household size, formal sector employment status (retrenched and never employed), formal and informal sector linkages, taxation and government regulations are significant variables, further studies are encouraged to look into effects of these factors on those the formal market.

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APPENDICES

Appendix A: Questionnaire

UNIVERSITY OF ZIMBABWE



FACULTY OF SOCIAL STUDIES

DEPARTMENT OF ECONOMICS

GLENVIEW INFORMAL SECTOR PARTICIPATION SURVEY

I, Tariro Collins Bhanya, am a **Master of Science in Economics (MEC)** final year student at the University of Zimbabwe. I am carrying out a research in partial fulfillment of MEC on the topic entitled “**Determinants of informal sector participation; A case of Glenview, Harare Metropolitan Province, Zimbabwe.**” The information obtained during this survey will be used for academic purposes only and responses will be confidentially kept. Your cooperation is highly appreciated.

Instructions on responding to questions

- Do not write your name, contact details or any identification details on the questionnaire
- Show response by ticking in the respective answer box or filling on the space.

WARD: _____

DATE OF INTERVIEW: _____

1. Gender of the respondent. Male Female

2. Age of respondent. _____ Years

3. Marital status of respondent.

Married Never married Divorced Widowed

4. What is the size of your household? (number) _____

5. What is your highest level of education?

No education Primary education Secondary education Tertiary education

6. Have you ever received any vocational training? Yes No (if no go to question 8)

7. In which field did you receive vocational training? _____

8. Have you ever been employed in the formal sector? Yes No (if no go to question 11)

9. In which sector were you employed in the formal sector? _____

10. What is your current formal sector employment status?

Currently employed Retired Retrenched

11. Are you a participant in the informal sector? Yes No (if no go to question 14)

12. In which sector of the informal sector are you a participant? _____

13. What is your informal sector participation status?

Informal sector employer Informal sector self employee Informal sector wage employee

14. What are your views regarding the following on your business.

a) Government regulations? Burdensome Not burdensome

b) Taxation (taxes)? Burdensome Not burdensome

15. Do the informal businesses have any linkages with formal businesses? Yes No

16. What is your household's average monthly income? _____ US dollars

***THANK YOU VERY MUCH FOR TAKING YOUR TIME TO RESPOND
TO THE QUESTIONS ABOVE.***

Appendix B: Variation Inflation factor (VIF) Results

. vif

Variable	VIF	1/VIF
Age	1.22	0.818081
MaS	1.06	0.945914
Gnd	1.06	0.939626
Edu		
2	2.38	0.420790
3	2.94	0.339944
4	2.58	0.387985
VT	1.03	0.968520
HI	1.13	0.887746
HS	1.09	0.915626
FSEH		
2	1.64	0.609375
3	1.63	0.615118
4	2.05	0.488222
Lnk	1.07	0.934225
Txn	1.09	0.916053
GvtR	1.14	0.879998
Mean VIF	1.54	

Appendix C: Logistic Regression Results

```
. logit ISPS Age MaS Gnd i.Edu VT HI HS i.FSEH Lnk Txn GvtR
```

```
Iteration 0: log likelihood = -220.72615
Iteration 1: log likelihood = -120.98403
Iteration 2: log likelihood = -108.27756
Iteration 3: log likelihood = -107.34831
Iteration 4: log likelihood = -107.34621
Iteration 5: log likelihood = -107.34621
```

```
Logistic regression                Number of obs    =          379
                                   LR chi2(15)       =         226.76
                                   Prob > chi2        =          0.0000
Log likelihood = -107.34621        Pseudo R2       =          0.5137
```

ISPS	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
Age	.0054988	.0204739	0.27	0.788	-.0346293	.045627
MaS	.466926	.3757205	1.24	0.214	-.2694725	1.203325
Gnd	.9750973	.3844573	2.54	0.011	.2215748	1.72862
Edu						
Primary education	.8702091	.7309733	1.19	0.234	-.5624722	2.30289
Secondary education	.1091712	.6071808	0.18	0.857	-1.080881	1.299224
Tertiary education	-.9084919	.6595198	-1.38	0.168	-2.201127	.3841432
VT	.2054453	.4370039	0.47	0.638	-.6510666	1.061957
HI	-.0046361	.0016175	-2.87	0.004	-.0078063	-.0014659
HS	.2852991	.1140522	2.50	0.012	.0617609	.5088374
FSEH						
Retired	.3213065	.5704445	0.56	0.573	-.7967442	1.439357
Retrenched	1.260941	.4599018	2.74	0.006	.3595504	2.162332
Never employed	3.592891	.521508	6.89	0.000	2.570754	4.615027
Lnk	1.080164	.3708244	2.91	0.004	.3533613	1.806966
Txn	1.377472	.3606224	3.82	0.000	.6706654	2.084279
GvtR	1.160412	.3730517	3.11	0.002	.4292438	1.89158
_cons	-3.738521	1.275488	-2.93	0.003	-6.238433	-1.23861

