

**MEASURING INFORMAL EMPLOYMENT IN WESTERN CAPE:  
USING FIRST LABOUR FORCE SURVEY (2014 – 2017)**

A Research Project Report

Presented to

The Department of Mathematics and Physics

by

Sakhile Cedric Gumede

221356622

As an Assessment for the Module

INTRODUCTION TO PROJECT (PRJ360S)

Within The Qualification

DIPLOMA IN MATHEMATICAL SCIENCES

ACADEMIC SUPERVISOR: Mr. A. Eldud

## DECLARATION

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## ACKNOWLEDGEMENTS

I would like to express my gratitude to my supervisor, Mr. A. Eldud from the Department of Mathematics and Physics at Cape Peninsula University of Technology for the guidance of my research. Without his guidance, I would not have been able to complete this project on time.

I extend my sincere gratitude to my lecturer, Mr. D. Jegels, my first-year lecturer of communication skills and third year lecturer of Introduction to Project. Communication Skills equipe me with the relevant knowledge required when writing research. I will not leave behind the rest of my lecturer from Department of Mathematics and Physics for their presence in the journey of my studies from my first year until final year.

Lastly, I thank my family for always believing in me and supporting me throughout my life.

## ABSTRACT

There have been many papers focusing on informal employment in South Africa for the past years. This paper is bit unique from the previous papers because it focuses on informal employment in Western Cape. This paper represents an analysis of recent trends in Western Cape informal sector using Quarterly Labour Force Survey (QLFS), Quarter 1 of 2021 and 2022 from Statistics South Africa. The study employs statistical techniques like descriptive statistics which summarises Quarter Labour Force Survey data and logistic regression to predict the binary outcome of the reference category (informal sector). Logistic regression also predicts a dependent data variable by analysing the relationship between independent variables.

This paper analyses the following aspects: The impact of informal employment in Western Cape on the year 2021 and 2022, gender configuration within the informal sector, population group, marital status, work status, salary increment, geographic type and metro or non-metro.

The first results regarding the informal employment in Western Cape between 2021, Quarter 1 and 2022, Quarter 1 is that it increased in size. It was 15.7% in 2021 and it increased to 17.3% on 2022. Gender, population group, work status, salary increment, and metro or non-metro are statistically significant, while marital status and geography type are not statistically significant on informal sector.

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## **LIST OF ABBREVIATIONS**

1. Stats SA – Statistics South Africa
2. QLFS – Quarterly Labour Force Survey
3. SPSS – Statistical Package for the Social Sciences
4. IBM – International Business Machines
5. LFS – Labour Force Survey
6. ILO – International Labour Organization
7. IMF – International Monetary Funds
8. WIEGO – Woman in Informal Employment Globalizing and Organization
9. OECD – Organization for Economic Co-operation and Development
10. SARS – South African Revenue Service

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# **CHAPTER 1: INTRODUCTION**

## **1.1 Background**

According to International Labour Organization (2000), informal employment is referring to all jobs in informal sector enterprises or all people rendering service during a given reference period in at least one informal sector enterprise. About 60 percent of the world's employed population ages 15 and older, spend at least part of their time in the informal sector.

International Monetary Fund (2020) indicated that most people remain in informal sector to avoid paying taxes or social compliance with standards and licencing requirements and some remain in informal sector because they lack the education and skills required for formal employment. The size of the informal sector slowly decreases as economies develop, but with wide variations across regions and countries.

South Africa is one of the developing countries with high rate of employment and low economic growth. According to Stats SA (2021), jobs in the informal sector account for nearly one-third of the national total, demonstrating the sector's significance in reducing poverty. Furthermore, it has been estimated to contribute about 6% of GDP. A recent report from the International Labour Organisation (ILO) shows more than 60% of the world's employed population earn their livelihoods in the informal economy.

This research investigates and analyses the informal employment in Western Cape between 2021 and 2022 using Quarterly Labour Force Survey, Quarter 1. This study focuses on the size of the informal sector and analyse the data from Quarterly Labour Force Survey form different sectors within age, population group, gender, and education level from year-on-year change within quarters. This study also measures the informal sector employment size and examining the personal and work characteristics of the workers in different sectors and provide a statistic analysis. This study on concludes by comparing informal employment rate in 2017 Quarter 2 and 2022 Quarter 2 by age, gender, population group, educational level, and sector.

## **1.2 Research Problem**

Economic growth in the regions with large informal sectors remains below the average because informal sectors do not contribute with tax to South African Revenue Service (SARS). Informal employment is a global crisis, and each country has different rate of it. The research problem of this paper is the informal employment in Western Cape between the year 2014 and 2017.

### **1.3 Research Questions**

- What is the size of informal employment in Western Cape?
- Why most employers practise informal employment in Western Cape?
- How are the socio-economic factors contributing to the sector of employment?
- Which geographic type and metro/nonmetro has high rate of informal employment?

### **1.4 Research Objective**

- The objective of this study is to analyse the sector of employment (formal and informal) in the Western Cape province using Quarterly Labour Force Survey for 2021 and 2022 first quarter.
- The aim of this research is to investigate the impact of socio-economic factors on the sector of employment in Western Cape

### **1.5 Research Limitations**

- Used 2021 and 2022 Quarterly Labour Force Survey, first quarter.
- Only Western Cape considered.
- Only individuals age between 15 to 64 considered.

### **1.6 Research Hypothesis**

- Alternative Hypothesis: All coefficients are statistically significance at 5% level of significance.
- Null Hypothesis: At least one coefficient is not statistically significance at 5% level of significance.

### **1.7 Significance of Study**

Informal employment is an international crisis and most employers recently started to practise it. The importance of this study is to investigate the informal employment in Western Cape using QLFS dataset of year 2021 and 2022. The datasets are analysed to identify the statistical significance at 5% level of significance and compare the output.

## **CHAPTER 2: LITERATURE REVIEW**

### **2.1 Introduction**

Chapter 2 presents a review of the past papers on the topic of measuring the informal employment. There are numerous studies that investigated the same topic as (Budlender, 2011; Rogan & Skinner, 2017; Daniels, et al., 2021; Mashimbyi, 2021). All the papers mentioned did investigation of informal employment on a national level not provincial. My study is slightly different from of previous ones because it focuses on provincial level (Western Cape).

### **2.2 Conceptual Framework**

According to Statistics South Africa (2008), the objective of the Quarterly Labour Force Survey (QLFS) is to collect quarterly information about persons in the labour market, i.e., those who are employed; those who are unemployed and those who are not economically active. The QLFS sample covers the non-institutional population except for workers' hostels. The sample size for the QLFS is roughly 30 000 dwellings and these are divided equally into four rotation groups, i.e., 7 500 dwellings per rotation group.

According to QLFS (2008), the final survey weights are constructed using regression estimation to calibrate to the known population counts at the national level population estimates (which are supplied by the Demography Division) cross-classified by 5-year age groups, gender and race, and provincial population estimates by broad age groups are used for calibration weighting.

### **2.2 Theoretical Framework**

Chen (2012) describes the structural articulation theory as a micro-economic entity that consists of subordinating economic units and workers. The purpose of the informal sector, according to the structural articulation theory is to reduce input and labour costs for formal capitalist firms so that they can achieve the level of competitiveness they want. High profitability in the formal economy partly depends on the informal sector; this implies that, the larger the size of the informal sector, the more profitable the formal sector becomes (Devey et al., 2006). The structural articulation is a permanent feature of the modern economy and mimics tendencies like the forward linkages where the informal sector is subcontracted to undertake some labour-intensive projects (Arvin-Rad et al., 2010). The formal sector and the informal sector relationship are mutually beneficial in this case.

## 2.3 Empirical Literature Review

Rogan and Skinner, (2017) investigated the nature of, and recent trends in the South African informal sector using Quarterly Labour Force Survey (QLFS) data from 2008 – 2014. The size of the informal sector, as a percentage of the non-agriculture workforce, has remained relatively constant, between at 16 and 18 percent over the period. The previous paper paid attention to differentiation by income status in employment, less attention has been paid to gender, industry, and spatial differentiation. This current paper analysed the impact of the 2008-2009 economic crisis, gender reconfiguration within the informal sector, informal sector and youth employment, improvements in educational levels, changes in industry composition, geography of the African informal sector, and earning. They argued that the greater understanding of these variables, and how their role may have changed over a time, is critical to robust and successful policy making. They concluded by that over 2.5 million people work in South African informal sector of which is smaller than in other developing countries.

Budlender, (2011), has previously commissioned analysis of informal employment in South Africa by researchers who used Labour Force Survey data for this analysis. Heintz & Posel, (2018), analysed data from the surveys of September 2021 and September 2004 to explore reasons for the high employment rates in the country. They did so by developing a definition for informal employment based on the definition of informal employment approved by the 17<sup>th</sup> International Conference of Labour Statisticians.

Chen, (2012), conducted research, the first in the WIEGO series, provided an overview of the definitional, theoretical, and policy debates on the informal economy. The paper opened with a brief historical overview of the informal sector concept and related debates, focusing on the four dominant schools of thought about the informal economy. The paper also examined the linkages between the informal economy, formal firms, and formal regulations and the “formalize the informal economy” debate. The paper proposed a comprehensive policy response to the informal economy with four main pillars: create more formal jobs; regulate informal enterprises and informal jobs; extend state protections—social and legal—to the informal workforce; and increase the productivity of informal enterprises and the incomes of informal workers. The paper concluded with a call for a fundamental rethinking of the future of the informal economy.

## CHAPTER 3: METHODOLOGY

### 3.1 Introduction

This paper employs statistical model to examine the phenomenon of the informal employment in Western Cape using First quarter of Quarterly Labour Force Survey for 2021 and 2022. This chapter briefly explain in detail the application of statistical model employed to find the solutions to research problems, questions and to achieve the objectives of the study. This chapter consist of four sections, namely, data source, data description, data preparation and data analysis. The study uses Binary Logistic Regression because the independent variable (sector) is dichotomous and descriptive statistics to summarize datasets.

### 3.2 Data Source

Statistics South Africa (Stats SA) conduct survey of 4 quarters per year known as Quarterly Labour Force Survey. The survey collect data on the labour market activities of individuals aged between 15 years and 64 years who lives in South Africa. This paper is conducted using Quarterly Labour Force Survey Dataset of the two recent years of 2021 and 2022 first quarters to conduct the statistical analysis.

### 3.3 Data Description

The following variables are the ones that will be used to conduct this study, formulate results, and draw conclusion with them.

Table 3.1 List of variables used in the study.

<i>No.</i>	<i>Name of Variable</i>	<i>Type</i>
1	Sector	Categorical
2	Gender	Categorical
3	Population Group	Categorical
4	Marital Status	Categorical
5	Work Status	Categorical
6	Salary Increment	Categorical
7	Metro/Nonmetro	Categorical
8	Geographic Type	Categorical

### 3.4 Data Preparation

This study uses IBM SPSS Statistics Software to prepare data for the analysis and visualisations are all done in Microsoft Excel. The presentation of data for multiple logistic regression involved the following steps:

- I cleaned dataset.
- Create a Western Cape labour force profile (age 15 – 64).
- IBM SPSS Statistics program and Microsoft Excel are used to analyse and visualize the data.

### 3.5 Data Analysis

This study uses Descriptive statistics to summarize and describe the main feature of the data set and logistic regression to investigate the effect of independent variables on independent variable (sector of employment)

#### 3.5.1 Logistic Regression

Multiple linear regression is a statistical technique used to model the relationship between a dependent variable and two or more independent variables. Below is the model equation for multiple linear regression (linear predictor):

$$\log \left( \frac{\hat{p}_i}{1 - \hat{p}_i} \right) = \hat{\beta}_0 + \hat{\beta}_1 x_{i1} + \hat{\beta}_2 x_{i2} + \hat{\beta}_3 x_{i3} + \cdots + \hat{\beta}_k x_{ik}$$

The inverse of the logit function model equation is follows:

$$\hat{p}_i = \frac{1}{1 + e^{-(\hat{\beta}_0 + \hat{\beta}_1 x_{i1} + \hat{\beta}_2 x_{i2} + \hat{\beta}_3 x_{i3} + \cdots + \hat{\beta}_k x_{ik})}}$$

Where:

- $\hat{p}_i$  is probability of binary outcome.
- $\beta_0$  is the intercept or constant term.
- $\beta_1, \beta_2, \dots, \beta_k$  are the coefficients associated with each predictor variables ( $x_1, x_2, \dots, x_k$ ).

## CHAPTER 4: RESULT and DISCUSSION

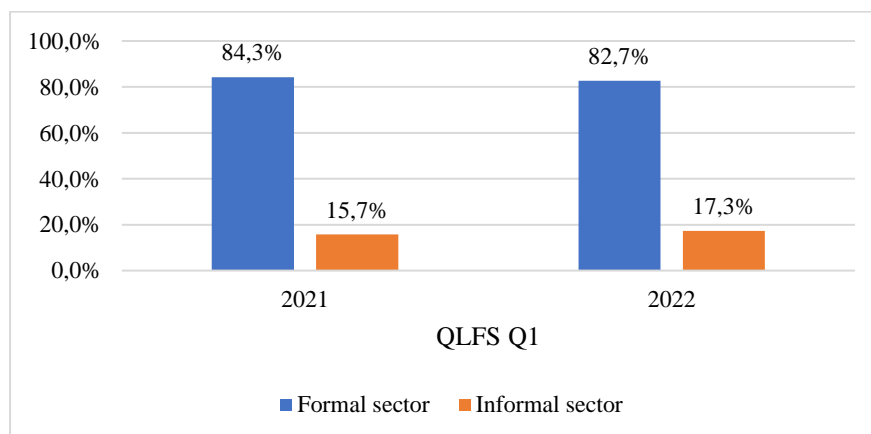
### 1.1 Introduction

Chapter 4 presents the findings made in this study through the application of statistical techniques detailed in chapter 3. All results presented in this study are from Stats SA QLFS datasets of the year 2021 and 20211. The criterion of choosing dataset is based on choosing the recent two dataset and the main purpose is to compare the outcome of both dataset The study presents finding through tables and data visualizations. The statistical analysis breaks down the size of the informal employment in Western Cape. The statistical modelling, logistic regression is used to measure the impact of certain variables from informal employment.

### 1.2 Descriptive Statistics

The following descriptive statistics provide a brief overview and statistic summary of the informal employment in Western Cape. The findings in this descriptive statistic contextualizes the different aspects of variables in informal sector. The is output obtained through summary statistics command in IBM SPSS Statistics Program and imported to Microsoft Excel as explained in chapter 3. The results of informal employment for first quarter of 2021 were sitting on 15.7% and first quarter of 2022 were on 17.3%. Figure 4.1 illustrates those results of Quarter Labour Force Survey, first quarter of 2021 and 2022. The size of informal employment in Western Cape has increased with 1.6% for the last two years. The most contributing factor on that increment is the uplift of Covid-19 restrictions. Majority of business paused their operation during Covid-19 lockdown and open towards the end of 2021 and those results reflect on 2022 QLFS, Q1.

**Figure 4.1: The Sector of employment vs years**



**Figure 4.2: Sector of employment vs gender and year**

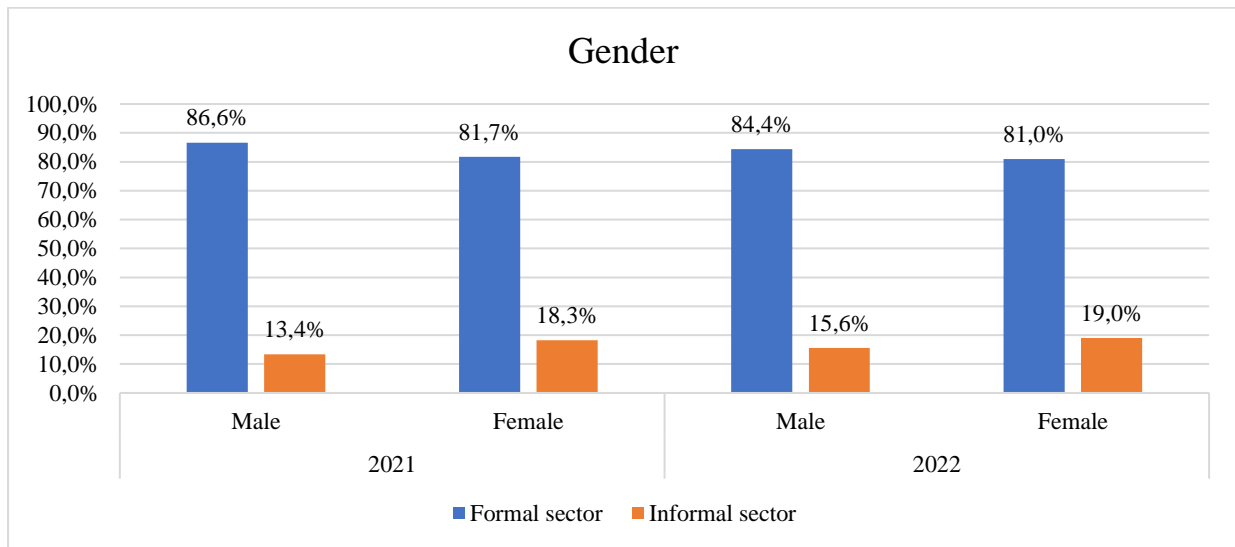


Figure 4.2 above shows that the percentage of female working in informal sector in Western Cape was higher than of males during the 2021 and 2022 first quarter.

**Figure 4.3: Sector of employment vs population group and year**

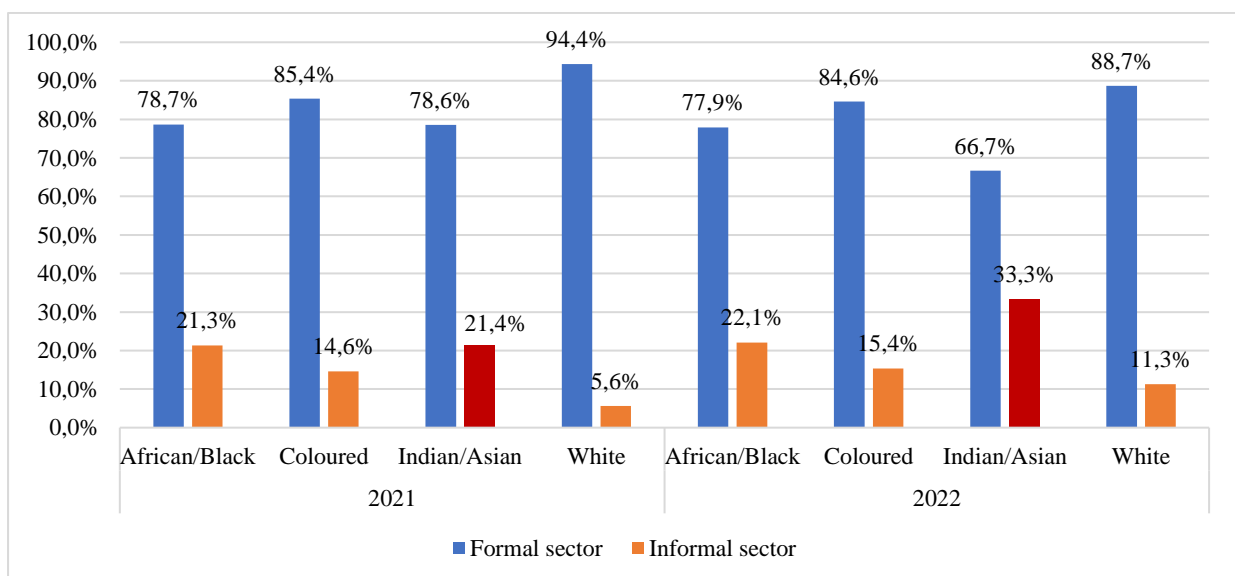


Figure 4.3 shows that Indians and Asians were dominating in informal employment for the same period years.



**Figure 4.4: Sector of employment vs marital status and year**

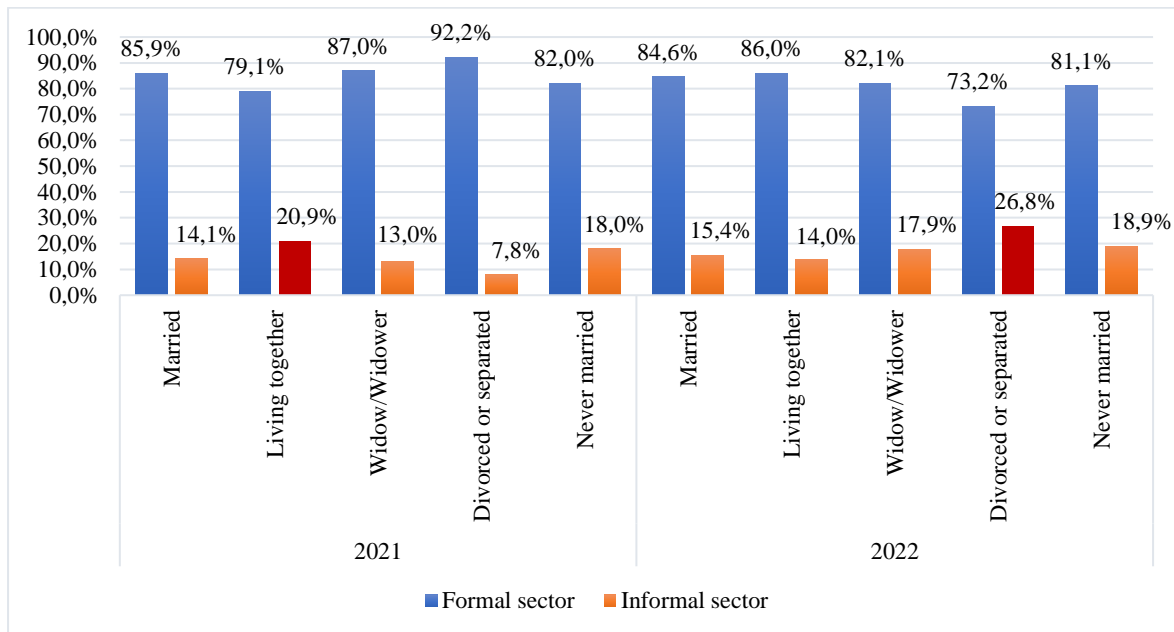


Figure 4.4 shows that in 2021, 20.9% of the individuals living together were working informal employment, and in 2022, 26.8% of the divorced or separated individuals were working in the informal

**Figure 4.5: Sector of employment vs work status and year**

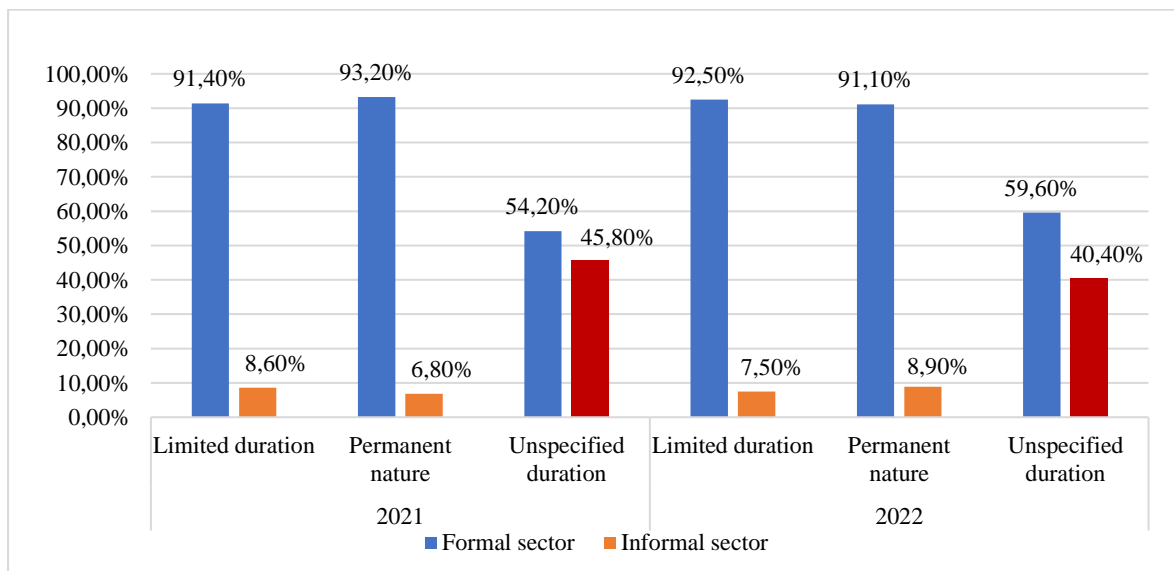


Figure 4.6 illustrates the work status within the sectors during the first quarter of QLFS (2021 & 2022). Most employers work in an unspecified duration.

**Figure 4. 6: Sector of employment vs salary increment and year**

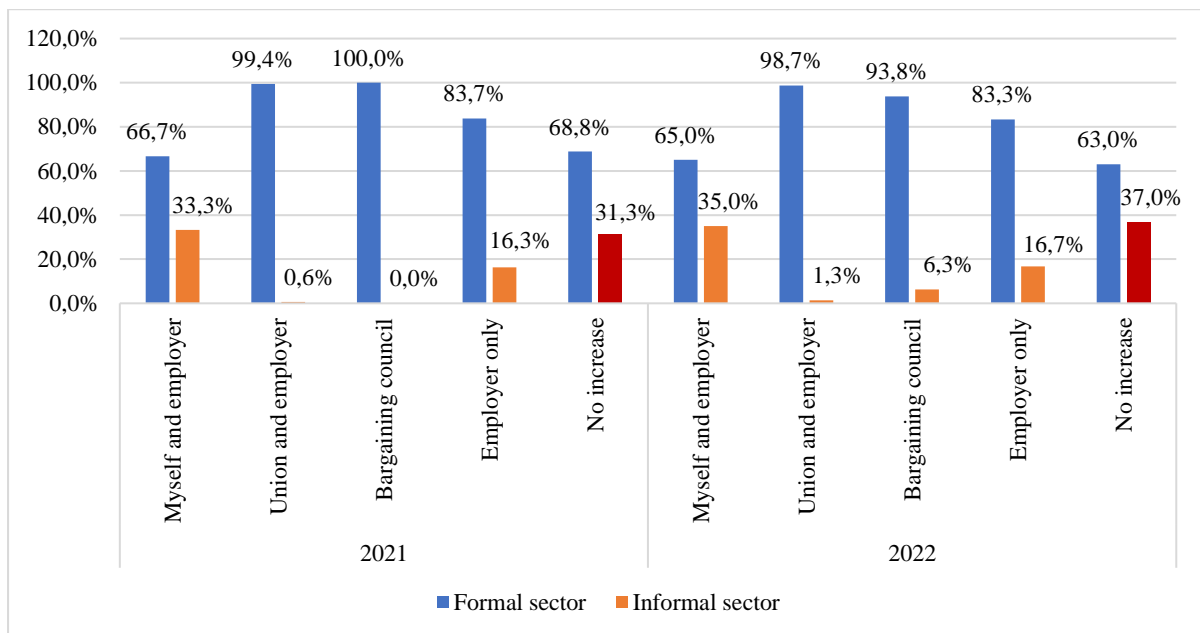
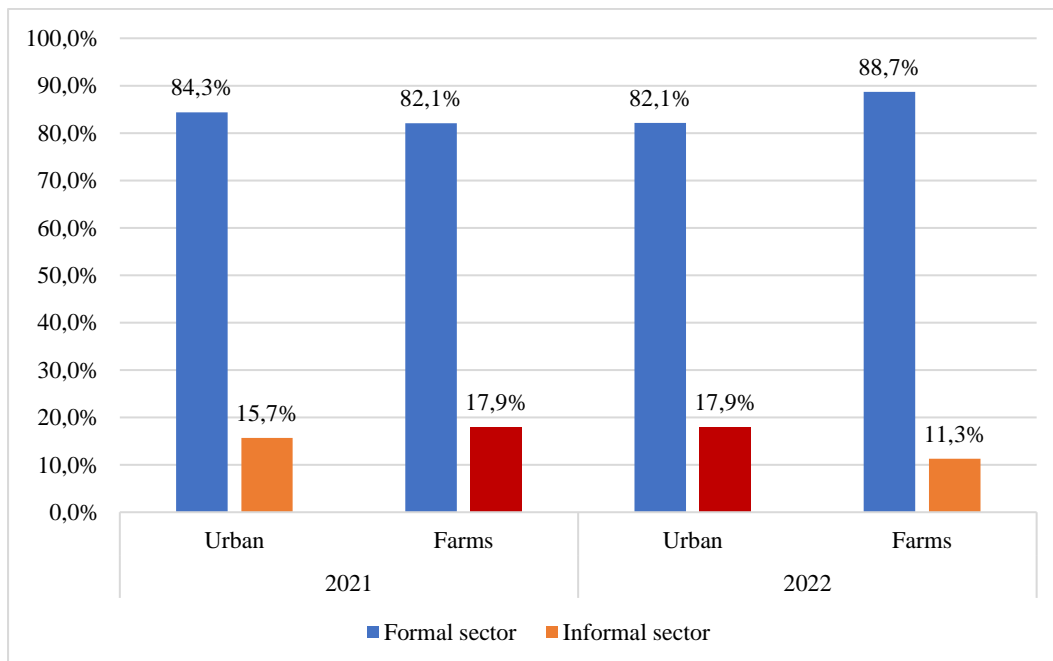


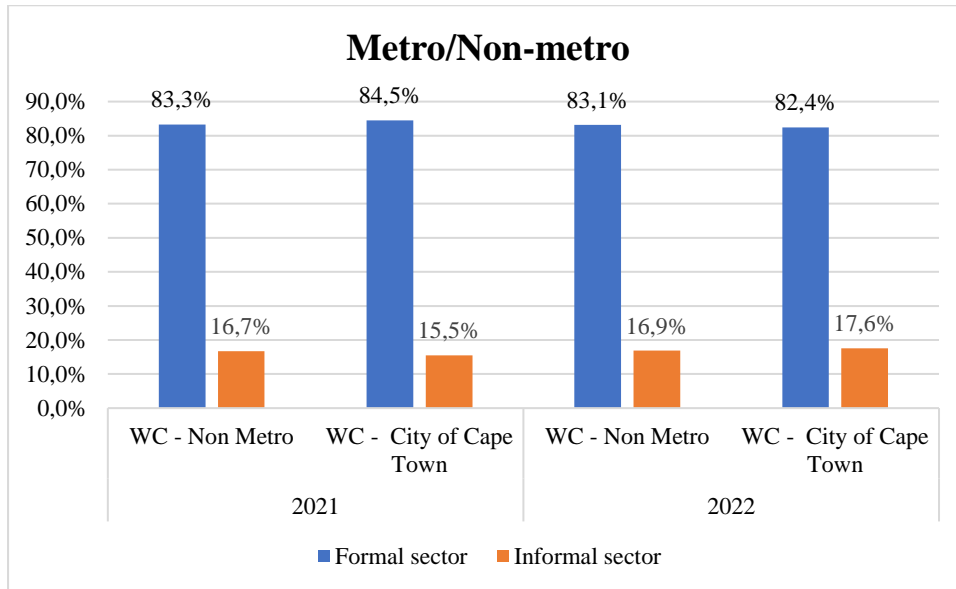
Figure 4.5 shows that most of the individuals from informal sector don't get salary increase and very few individuals have unions and bargaining council.

**Figure 4.7: Sector of employment vs geography type and year**



According to figure 4.7 in 2021, farms had a higher percentage of informal employment than urban areas and in 2022, urban areas had a high percentage as compared to farms.

**Figure 4.8 Sector of employment vs metro/non-metro and year**



In 2021, Western Cape non-metropolitan regions were on 16,7% and Western Cape City of Cape Town was on 15,5%. In 2022, Western Cape non-metro regions were on 16,9% and Western Cape City of Cape Town was on 17,6%.

### 1.3 Results of Logistic Regression

**Table 4. 1** Estimated parameters from the logistic regression model.

Variables	2021			2022		
	B	Sig.	Exp(B)	B	Sig.	Exp(B)
Gender (Male)	-0,934	<b>0,000</b>	0,393	0,480	<b>0,012</b>	1,617
Population group		<b>0,000</b>			<b>0,000</b>	
African/Black	2,661	<b>0,000</b>	14,307	-0,677	<b>0,001</b>	0,508
Coloured	2,308	<b>0,000</b>	10,053	-16,808	1,000	0,000
Indian/Asian	2,979	<b>0,003</b>	19,671	-1,898	<b>0,000</b>	0,150
Marital status		0,235			0,294	
Married	-0,512	0,053	0,599	-0,219	0,519	0,803
Living together like husband and wife	-0,278	0,494	0,757	0,581	0,367	1,789
Widow/Widower	-1,583	0,156	0,205	0,716	0,072	2,047
Divorced or separated	-0,526	0,426	0,591	0,119	0,576	1,127
Work status		<b>0,000</b>			<b>0,000</b>	
Limited duration	-2,558	<b>0,000</b>	0,077	0,814	<b>0,015</b>	2,256
Permanent nature	-1,849	<b>0,000</b>	0,157	2,188	<b>0,000</b>	8,920
Salary increment		<b>0,000</b>			<b>0,000</b>	
Negotiation between myself and employer	1,108	0,119	3,028	-4,050	<b>0,000</b>	0,017
Negotiation between union and employer	-3,608	<b>0,000</b>	0,027	-2,351	<b>0,001</b>	0,095
Bargaining council or other sector bargaining arrangement	-20,137	0,996	0,000	-1,490	<b>0,009</b>	0,225
Employer only	-0,248	0,627	0,780	-0,544	0,419	0,581
Geography type (Urban)	-0,556	0,343	0,574	-0,101	0,772	0,904
Metro/non-metro (1)	0,950	<b>0,004</b>	2,586	-0,564	<b>0,009</b>	0,569
Constant	-1,102	0,249	0,332	-0,715	0,301	0,489

Table 4.1 illustrates the estimated parameters of the logistic regression model. Gender, population group, work status and metro/non-metro are statistically significant in both 2021 and 2022, first quarter and marital status and geography type are not statistically significant in the same period.

Salary increment has different categorical variables, and they are different in terms of statistical significances. Negotiation between employee and employer in 2021 are not statistically significant while in 2022 it is statistically significant, same as Bargaining council or other sector bargaining arrangement in 2021 is not statistically significant while in 2022 it is statistically significant.

## **CHAPTER 5: CONCLUSION and RECOMMENDATIONS**

South Africa is a developing country, and the causes of informal employment may include low level of education, discrimination, poverty, and lack of economic resources. Primary results of this study informal employment in Western Cape increased by 1.6% in the first quarter of 2022. Females has been dominating in informal employment in both 2021 and 2022 first quarter of Quarterly Labour Forces Survey with 18.3% over 13.4% in 2021 and 19.0% over 15.6% of males in the first quarter of 2022. Majority of informal sector enterprises tend to accommodate more females hence they are dominating in informal sector.

Indians and Asians are dominating in informal employment in the same period of years in Western Cape. Most employees from informal sector work in an unspecified duration and receive no salary increase. In 2021, farms had a higher percentage of informal employment than urban areas and in 2022, urban areas had a high percentage as compared to farms. In 2021, Western Cape non-metropolitan regions were on 16,7% and Western Cape City of Cape Town was on 15,5%. In 2021, Western Cape non-metro regions were on 16,9% and Western Cape City of Cape Town was on 17,6%.

South Africa is a developing country, and the causes of informal employment may include low levels of education, discrimination, poverty, and lack of economic resources. The economy of the country with high rate of employment remains below average because informal sectors don't contribute tax compliances.

## APPENDIX

### Appendix A. Frequency table of variables

Variables		Frequency
Salary increment	Negotiation between myself and employer at company	27
	Negotiation between union and employer	349
	Bargaining council or other sector bargaining arrangement	81
	Employer only	584
	No regular annual salary increase	32
Marital status	Married	526
	Living together like husband and wife	94
	Widow/Widower	19
	Divorced or separated	45
	Never married	389
Population group	African/Black	444
	Coloured	440
	Indian/Asian	14
	White	175
Work status	Limited duration	93
	Permanent nature	873
	Unspecified duration	107
Metro/non-metro	WC - Non-Metro	218
	WC - City of Cape Town	855
Geography type	Urban	1038
	Farms	35
Gender	Male	537
	Female	536

### Appendix B. Chi-Squared Test Summary

		Chi-square	df	Sig.
Step 1	Step	242,298	16	0,000
	Block	242,298	16	0,000
	Model	242,298	16	0,000

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