

UNIVERSITY  
OF  
LUSAKA

**SCHOOL OF MEDICINE AND HEALTH SCIENCES**

**AWARENESS AND ACCEPTANCE LEVELS OF COVID 19 VACCINES AND  
ASSOCIATED FACTORS AMONG MARKETEERS AND THEIR CUSTOMERS AT  
MAIN MASALA MARKET OF NDOLA DISTRICT**

**BY**

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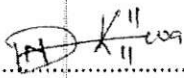
**SUPERVISOR: DR MFUNE R. L**

**A research report submitted to the University of Lusaka in partial fulfillment of the  
requirements of a Degree in Bachelor of Science in Public Health**

**DECLARATION**

**Name of Student and ID:** Dingani Nkhuwa, BSPH1713131

I certify that, with the exception of properly cited and acknowledged external sources and quotes, the research presented in this dissertation is the result of my own original effort. I further attest that this work has not been submitted in whole or in part to the University of Lusaka or any other Institution for consideration of a purpose similar to or unrelated to the one for which it is being evaluated.


**Student Signature:**  .....

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This dissertation has been submitted with my approval as a University of Lusaka (UNILUS) supervisor.

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**Signature:** 

**Date:** 29<sup>th</sup> May 2023

## **DEDICATION**

This piece of work is dedicated to my lovely wife Diana Ndhlovu, our sons and our last born daughter Thandiwe Nkhuwa for the economic hardships they endured and their relentless help and support during the period of study at the University of Lusaka. I also want to dedicate this work to my colleagues, my friends, Majory Hachibi and Mable Chewe for the encouragements and support rendered to me during the period of study at the University.

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Table of contents	
DEDICATION .....	2
ACKNOWLEDGEMENTS .....	4
LIST OF TABLES .....	6
CHAPTER ONE.....	7
1.0 Introduction .....	8
<b>1.2 Justification.....</b>	<b>9</b>
<b>1.3 General objectives .....</b>	<b>10</b>
<b>1.4 Specific objectives.....</b>	<b>10</b>
1. To determine the awareness and acceptance levels of COVID-19 Vaccines among marketers and their customers. ....	10
<b>1.5 Research questions .....</b>	<b>10</b>
<b>LITERATURE REVIEW .....</b>	<b>11</b>
<b>2.0 Theoretical Review .....</b>	<b>11</b>
CHAPTER FOUR – RESULTS PRESENTATION .....	19
4.1 Socio-demographic characteristics of participants .....	19
4.2 Knowledge and acceptance levels of the COVID-19 vaccination. ....	20
4.3 Factors associated with awareness and acceptability of COVID-19 vaccines .....	22
4.4 Reasons for hesitancy to be vaccinated against COVID-19.....	23
4.5 QUALITATIVE ANALYSIS.....	24
4.5.1 Theme 1: perspectives on acceptance of the COVID-19 vaccine .....	24
Theme 2: factors affecting acceptance of the COVID-19 vaccine .....	24
CHAPTER FIVE – DISCUSSION .....	28
5.1 Introduction .....	28
5.2 Awareness and Acceptance Levels of COVID-19 Vaccines.....	28
5.3 Reasons for Hesitancy to be vaccinated against COVID-19 .....	28
5.4 Factors Influencing Awareness and Acceptability of COVID-19 Vaccines.....	29
CHAPTER SIX – CONCLUSION .....	31
6.1 Conclusion .....	31
6.2 Strengths of the study.....	31
6.3 Limitations of the study .....	31
6.4 Recommendations .....	31
REFERENCES .....	33
<b>APPENDIX 2: OPERATIONAL BUDGET .....</b>	<b>37</b>
<b>Appendix 4: RESEARCH QUESTIONNAIRE Serial Number .....</b>	<b>41</b>

**LIST OF TABLES**

Table 1 Socio-demographic Data .....	19
Table 2 .....	20
Table 3 Factors .....	22
Table 4 Hesitancy against COVID-19 vaccination among Marketeers.....	23

## **ABSTRACT**

**Introduction:** COVID 19 brought a lot of economic, social and emotional stress globally and Zambia was not an exception.

**Objective:** To assess the awareness and acceptance levels of COVID 19 vaccines and associated factors among marketeers and their customers at Main Masala Market of Ndola District.

**Methods:** A Mixed Method comprising of both qualitative and quantitative approach was employed among marketers and their customers at Main Masala Market of Ndola District between 01 to 21 April 2023. A total of 286 respondents participated in the study. An Explanatory Sequential Study Design was conducted starting with quantitative data and results were followed up with qualitative data to help explain the results. Statistical Package for Social Sciences (SPSS) Version 16:0 was used to analyze the data.

**Results:** Study findings showed a positive awareness rate of 98.6% for COVID-19 vaccinations, which is higher than that recorded among local traders in the Democratic Republic of the Congo (99.3%) and Uganda (98.3%) (Kabamba et al., 2020). The traders cited the internet (38.4%), television (23.6%), and family/friends (17%) as their primary sources of information regarding COVID-19 vaccines. Furthermore, our participants had a COVID-19 vaccine acceptance rate of 69.2%, which is higher than that observed in Zambia's general population (33.4%) and carers (47%) (Carleen et al., 2021).

**Conclusion:** The study concluded that market vendors at Ndola Main Masala Market had good knowledge levels of COVID-19 vaccinations. However, they were less willing to embrace the offered vaccine due to doubts on its efficacy.

**Keywords:** COVID 19, Awareness, Acceptance, COVID-19 Vaccines, Marketeers, Zambia.

## CHAPTER ONE

### 1.0 Introduction

The novel Coronavirus Disease 2019 (COVID-19) emerged as a global public health problem in China (Liu et al.,2020). The outbreak that began in China later spread to the entire globe and was declared a pandemic on 11th March 2021 by the World Health Organization (Chileshe et al.,2020). COVID-19 is caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) and is highly contagious (Zanke et al.,2020). Due to its ease of transmission and spread, many countries across the globe introduced preventive measures such as lockdowns, restrictions in movements, the universal wearing of face masks, social distancing, quarantine, and adequate handwashing (Greyling et al.,2021).

The deleterious effects of COVID-19 which cause high morbidity and mortality led to the development of vaccines, as they help individuals mount early immunological responses and also achieve herd immunity at the population level (Li et al. 2020). Vaccines have become integral to limiting community and global spread of COVID-19 (Marks et al. 2021). The Drivers of vaccine acceptance include clear and consistent message from health authorities, creating an atmosphere of trust, effective vaccine campaigns, confidence in regulatory bodies and a culturally informed health workforce (Attwel et al. 2021). Attitudes toward the vaccines are affected by complex and dynamic interplaying factors, and considerable changes over time have been observed in acceptance and hesitancy rates (Lazarus et al., 2021; Ipsos, 2020; Mega, 2021; Ipsos, 2021; Wang et al., 2021; Imperial College London, 2021; Lewis, 2020). Social and political differences were found to have a prominent effect on COVID-19 vaccine acceptance, especially that many people assumed political interference in the vaccine and in the pandemic itself (Lin et al., 2020).

Several vaccines have been developed and administered since COVID-19 was declared a pandemic in March 2020. In April 2021 the authorities in Zambia administered the first doses of the Oxford AstraZeneca® Covid-19 Vaccines (Mudenda et al.2021). Zambia through the Countries medicines regulator which is the Zambia Medicines Regulatory Authority (ZAMRA) approved five (05) COVID-19 vaccines that included China's Sinopharm, Johnson & Johnson, AstraZeneca Covishield, AZD12225 Korea AstraZeneca and Pfizer Biotech to be administered on citizens as a preventive measure against the pandemic.

An online based survey by Mudenda et al. (2022) in Zambia found that 99.9% of the participants were aware of the COVID-19 vaccine while only 33.4% were willing to accept the vaccine if made available to them. The study further found that factors influencing

vaccine acceptability included advanced age, being an entrepreneur than a government employee knowing that the COVID-19 vaccine had passed through all the necessary stages and is safe, effective and reduces virus transmission. However, there is scarce information in Ndola particularly among marketers and their customers in Masala Market Ndola on the awareness and acceptance levels of covid-19 vaccines. This study will therefore aim to investigate the awareness and acceptance levels of COVID-19 vaccines and associated factors among Marketers and their customers at main Masala market of Ndola district.

### **1.1 Statement of the problem**

Main Masala market in Ndola recorded a suspected COVID 19 Brought In Dead (BID) case on 22th May, 2020. The market later became Ndola's focal point of the original infection with three additional Coronavirus related deaths by 07 June 2020. Thirty Five (35) cases were recorded during the mass screening at the market and the patients were disengaged and put on treatment (DHO- Ndola 2020 unpublished). Despite the alarming figures of COVID -19 deaths and cases, the uptake of COVID-19 vaccines still remains poor. The market has had a high occurrence rate attributable to its focal area and business community for famers and trans-line dealers all the more particularly from Tanzania through Tunduma/Nakonde boarder and Congo. It is for this reason that this study aims to investigate the awareness and acceptance levels of COVID-19 vaccines and associated factors among Marketeers and their customers at Main Masala Market of Ndola District since business sectors and other food foundations among the exceptionally defenseless open foundations that are visited by many individuals.

### **1.2 Justification**

This study will aim to assess the awareness and acceptance levels of COVID 19 vaccines and associated factors among marketeers and their customers among our people as a way of identifying gaps that may exist in a quest to curb this deadly pandemic which has affected both developed and developing countries. In the quest to identify the risk factors and risky behaviors that influence the prevalence and incidence of disease, Marketeers at Masala Market of Ndola have been identified as the target group most at risk due to their interaction with their customers. The study will help in setting interventional objectives and generate policies that will facilitate positive individual changes through changes in physical and social environment. Marketeers are essential in that they help in disseminating important information to the public and provide goods and services either for personal want or basic need to ensure there is consistent supply of resources needed to meet demand. the study findings will help the Ministry of Health (MoH), local authorities and other interested

stakeholders to put up strategies to ensure an improvement in the awareness and acceptability of COVID 19 vaccines in a quest to curb the pandemic.

### **1.3 General objectives**

To assess the awareness and acceptance levels of COVID-19 vaccines and associated factors among marketeers and their customers at Main Masala Market of Ndola District.

### **1.4 Specific objectives**

1. To determine the awareness and acceptance levels of COVID-19 Vaccines among marketers and their customers.
2. To evaluate factors associated with the current hesitancy on vaccination against COVID-19.
3. To examine the effectiveness of COVID-19 legal enforcement.

### **1.5 Research questions**

1. What are the awareness and acceptance levels of COVID-19 Vaccines among marketers and their customers?
2. What are the factors associated with the current hesitancy on vaccination against COVID-19?
3. How effective is the COVID-19 legal enforcement?

### **1.6 Study scope**

The study will restrict itself to selected marketers and customers who will be divided in three clusters. The first category will involve shop owners and their customers that include taverns, groceries restaurants, butcheries, barbershops, hair salons, boutiques. The second include those selling vegetables both on table stands and those selling in bulk whether on their vehicles or displaying their merchandise in their own way and the last part that will include the bus station core boys' taxi, bus drivers and their customer's respectively.

## CHAPTER TWO

### LITERATURE REVIEW

#### **2.0 Theoretical Review**

##### **Global perspective on awareness and acceptance levels of COVID-19 Vaccine**

The COVID-19 disease is an extremely contagious respiratory illness caused by the novel coronavirus (SARS-CoV-2) and become a worldwide public health, economic and psychosocial threat (Singh et al., 2021). The coronavirus disease 2019 (COVID-19) pandemic infected more than 468 million people, and caused more than 6 million deaths globally by the end of March 2022 (WHO 2022). Vaccination against COVID-19 emerged as a promising measure to overcome the negative consequences of the pandemic (Sallam et al. 2021). It has been recognized early that the race to produce COVID-19 vaccines will not halt the pandemic unless there is a general acceptance by the public to take the vaccine (Neumann-Bohme et al.,2020; Burgess et al., 2021). Therefore, COVID-19 vaccination hesitancy has been studied heavily before and since the early stage of vaccine availability, with high variation in the willingness to be vaccinated among different communities (Sallam, 2021; Feleszko et al., 2021; Lin et al., 2020). However, the availability of vaccination services is one thing, while the implementation of a successful mass vaccination program is quite another (Marco v. 2020).

A study done in Arab Countries by Qunaibi et al.(2021) found low vaccine acceptance 29.4% which was lower in females, individuals with lower academic education, and individuals with no chronic diseases (Qunaibi et al.,2021). The study further revealed that the factors that were associated to the low acceptance level of COVID – 19 vaccines was attributed to the following; that 61.4% of the people were afraid of the side effects of the vaccine; 55.7% of the people felt that there was not enough time to verify the vaccines safety; 46.1% doubted the credibility of the producing company, citing that the vaccine production was rushed (Qunaibi et al.,2021). This is consistent with the literature, which showed high levels of distrust and concern about safety (Lin et al., 2020). Several surveys conducted have shown a decrease in vaccination acceptance (Lin et al., 2020; Ipsos, 2020; Wang et al., 2021; Kreps et al., 2020).

Another study done by Li et al.(2022) on Chinese University students in China showed that 39.4% of students were considered to have a high level of awareness, 20.2% of students had a low level of awareness while 40.4% were considered to have moderate awareness of the COVID-19 vaccine. Regarding acceptance levels of the COVID-19 vaccine for the Chinese University students showed 87.4% for the students who were willing to take the vaccine

while 2.5% of the students were unwilling to accept the vaccine and 10.1% showed a change of attitude from the unwilling to willing (Li et al., 2022). Previous studies have reported that the main reason for the hesitation of the COVID-19 vaccine was worry about its safety, effectiveness, and side effects (Borriello et al.2021).

### **African perspective on awareness and acceptance levels of COVID-19 Vaccine**

The COVID-19 disease is an extremely contagious respiratory illness caused by the novel coronavirus (SARS-CoV-2) and become a worldwide public health, economic and psychosocial threat (Singh et al., 2021). As of August 31, 2021, more than 219 million COVID-19 cases and 4.54 million deaths were reported worldwide and 5.6 million cases and 136 thousand deaths in Africa. Similarly, in Ethiopia, about 310 thousand cases and 4692 deaths were reported (WHO, 2021).

A review study done by Mudenda et al. (2022) in Africa showed COVID-19 vaccine acceptance levels ranging from 15.4% to 55.9% among healthcare workers, medical student and the general population. The study revealed that the highest acceptance rate was reported at 55.9% while the highest hesitancy was at 84.6% (Mudenda et al.,2022). The study revealed that the factors associated to the current hesitancy on COVID-19 vaccine in Africa across different populations was due to safety and effectiveness concerns of the vaccines (Mudenda et al.,2022).

Misinformation about the COVID-19 vaccines has also contributed to the vaccine hesitancy that has been reported in Africa (Kabamba et al.2020). Misinformation and myths about COVID-19 and COVID-19 vaccines have majorly contributed to the unwillingness of people to receive the vaccine (Li HO et al.2020). Political leaders can worsen vaccine misinformation and prevent many citizens from receiving the vaccine (Germani F & Biller Andorno N 2021). Lack of information about the COVID-19 vaccines is also a contributing factor to vaccine hesitancy (Saied et al.2021).

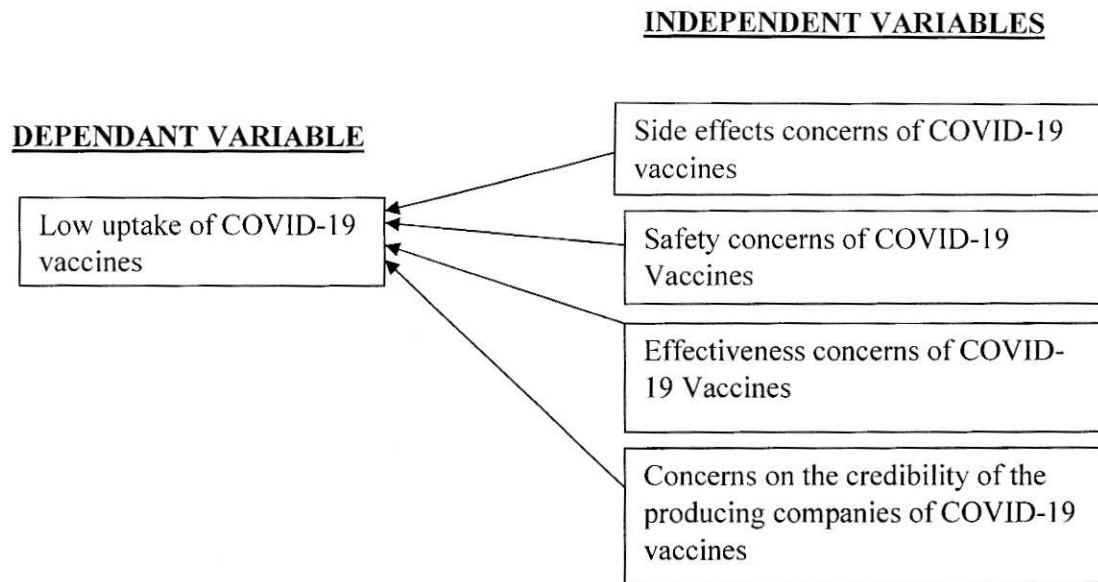
Further, sociodemographic characteristics have also been reported to be among the factors that may affect the acceptability of COVID-19 vaccines. Among the sociodemographic, gender and marital status have been reported to affect the acceptability of COVID-19 vaccines. A study in Uganda reported that male and single medical students were more willing to be vaccinated than female and married medical students (Kanyike et al. 2021). Similarly, a study conducted in the DRC and Egypt reported that male participants were more willing to receive the vaccine compared to female participants (Fares et al.2021).

### **Zambian perspective on awareness and acceptance levels of COVID-19 Vaccine**

The COVID-19 has remained a public health threat and has overburdened healthcare systems globally (Papoutsis et al., 2020). A study done in Zambia by Mudenda et al. (2022) on the general population showed the awareness level of 99.9% on COVID-19 vaccine with 71.8% of the population not willing to be vaccinated if any COVID-19 vaccine was made available because they were concerned about the safety associated with the vaccine. The acceptance level of the COVID-19 vaccine was at approximately 13.3% of the general population (Mudenda et al., 2022). The study further showed the associated factors against COVID-19 vaccine hesitancy to be attributed to the following: Participants were sceptical about the COVID-19 vaccine's potential adverse effects and effectiveness; also the lower number of confirmed COVID-19 infections in Zambia during the study period could have also contributed to vaccine hesitancy; Many participants felt that the COVID-19 vaccines had potential adverse effects; The fear of potential adverse effects has been reported to be one of the major reasons leading to vaccine hesitancy (Edwards et al., 2021). The participants in the study were unwilling to be vaccinated because of concerns about the effectiveness of vaccines. Earlier studies on vaccines have shown that individuals feel that vaccines are not effective.

The COVID-19 vaccine acceptance was low among the adult Zambian population, while awareness was high. This indicates the unwillingness of the majority of Zambians to be vaccinated against COVID-19 (Mudenda et al., 2022). Therefore, there is a need to educate the general population about vaccines and their development stages before being administered to humans. The government and health authorities need to educate the public on the benefits of vaccines and the need for vaccinations.

## 2.1 CONCEPTUAL FRAMEWORK



## 2.2 THEORETICAL FRAMEWORK

### **Behavioral change theory**

This theory is suitable for this study because it is the theory that emphasizes individual choices and responsibilities. It states that interaction with society and environment is what determines behavior and that life choices influences health, therefore, individuals must be encouraged to adopt healthy behaviors. Behavior, social factors and environment interact to determine health. This theory is related or can shape this study by helping in understanding behavior of the people so that Health Promotion programs and interventions can be planned and executed and also help in addressing the factors that affect the behavioral process at individual, group and community level. COVID-19 among marketers can be transmitted through routes such as fomites, faeco-oral, droplets and aerosols. Therefore prevention of the infection requires the disruption of transmission through fomites which are the objects or surfaces that can harbor and cause the transmission of the virus or through faeco-oral routes and also the transport of the virus from the hands of the infected to the fomites and vice versa (Hindson, 2020). Additionally, the infection can be prevented by disrupting the transmission through aerosols or droplets by reducing exhalation of the virus from the infected individuals in droplets and aerosols inhalation of the virus in aerosols or droplets by uninfected individuals.

The behavioral activities needed to disrupt the transmission of COVID-19 include:

- Increased cleaning of objects and surfaces.
- Reduction in touching of the T-zone such as the eyes, nose, mouth with hands and also reduce sharing of objects and increase sanitizing and washing of hands (Dietz et al., 2020).
- Reducing in social contacts in terms of proximity, frequency and duration (Uscher-Pines et al., 2018).
- Increase fresh air and reduce generation of aerosol from hand driers.

Therefore, individuals and the community at large need to adopt the behavioral change approach in order for them to attain reduced numbers of COVID-19 cases among marketers in their households and community at large.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Introduction**

This chapter gives a detailed account of the methodology and other issues necessary.

#### **3.2 Study Approach**

A Mixed Method comprising of both qualitative and quantitative approach will be employed for this study at Main Masala Market of Ndola District. Explanatory Design will be used starting quantitatively and follow up the results with qualitative data to help explain the results. The study population will be drawn from marketers and their respective customers. Qualitative data will be presented in graphs and charts while quantitative data will be checked after being completed by respondents and will be coded and analyzed using Statistical Package for Social Sciences (SPSS) Version 16:0.

#### **3.3 Study Design**

Explanatory Sequential study design will be employed to assess the awareness and acceptance levels of COVID-19 vaccines and associated factors among Marketeers and their Customers at main Masala market of Ndola District. Quantitative data will be collected first, the results will be followed up with qualitative data which will help in explaining the results.

#### **3.4 Study Population/Target Population**

The study will be conducted at Main Masala market of Ndola district. Ndola is the second largest city in Zambia in terms of infrastructure development and third in terms of size and population, with a population size of 475,194 (2010 provisional census). It lies just 10 kilometers from the border with Congo DR. Its geographical location is at latitude 12.9906 ° S, longitude 28.6498 E weather at 31° C Wind E 14 km/h, 23° humidity. The main economic activity for the province and copper mining in Ndola. Main Masala is the largest market and central economic center where farmers and trans-border traders from Tanzania and Congo supply and sell their commodities and thus the market is highly populated and busy.

#### **3.5 Sample Size, Sampling Procedure**

The sample size will be drawn among marketers and their respective customers. The market population is divided into 154 core boys, taxi and drivers, 394 shops stands and 565 vegetable stands adding up to 1113. The target population for the quantitative part of the study will be 1113 while the qualitative part will be 30. The 1113 is the number of marketers at the whole market. Therefore, the sample size will be determined using Krejcie and Morgan (1970) formula as follows at 95% confidence level:

$$s = \frac{x^2 NP(1 - P)}{d^2(N - 1) + x^2 P(1 - P)}$$

Where

s = required sample size

$X^2$  = 1 degree of freedom at the desired confidence level (1.96)

N = the population size

P = the population proportion (0.50)

d = the degree of accuracy expressed as a proportion (0.05)

$$s = \frac{x^2 NP(1 - P)}{d^2(N - 1) + x^2 P(1 - P)}$$

$$s = \frac{1.96^2 1113 \times 0.50(1 - 0.50)}{0.05^2(1113 - 1) + 3.84^2 0.50(1 - 0.50)}$$

$$s = \frac{3.841 \times 1113 \times 0.50(1 - 0.50)}{0.0025(1113 - 1) + 3.841 \times 0.50(1 - 0.50)}$$

$$s = \frac{3.841 \times 1113 \times 0.50(0.50)}{0.0025(1112) + 3.841 \times 0.50(0.50)}$$

$$s = \frac{4,275.033 (0.25)}{0.0025(1112) + 1.9205(0.50)}$$

$$s = \frac{1,068.75825}{2.78 + 0.96025}$$

$$s = \frac{1,068.75825}{3.74025}$$

$$s = 286$$

Therefore, a sample size of 286 marketers will be used in the study. Stratified random sampling will be used to come up with the best representative sample. Each random sample from each stratum will be taken in a number proportional to the stratum size in relation to the population size i.e 13.8%, 35.3% and 50.9% of the sample size.

### **3.6 Data Collection Methods**

Quantitative data will be collected using a structured self administered questionnaire while qualitative will be obtained through Focus Group Discussions. The questionnaire will consist of closed ended questions which will enable the researcher to analyze and interpret the findings easily. The questionnaire used will be adopted from Mudenda et al. (2021).

### **3.7 Data Analysis**

Qualitative data will be presented in graphs and charts while questionnaires for quantitative data will be checked after being completed by respondents and will be coded thereafter, it will be analyzed by using Statistical package for social sciences (SPSS) version 16.0 in order to generate the frequency tables, graphs and charts from which variables cross tabulations will be made and later tested using the Chi-square for categorical variable at the value of  $\leq 0.05$ .

### **3.8 Ethical Considerations**

Ethical approval for the research proposal will be sought from the research ethics committee and National Health Research Authority (NHRA). Permission to conduct the study will also be obtained from Ndola City Council and the Market Chairperson. The respondents will be assured that their responses will be treated with confidentiality and anonymity. Respondents will also be assured of their free will to either participate or withdraw from the study should they feel uncomfortable at any point.

**N.B:** The duration of the study is thirteen (13) weeks, with a total budget of K2,420.00. See Appendix 1 and 2 for ease of reference.

## CHAPTER FOUR – RESULTS PRESENTATION

### 4.1 Socio-demographic characteristics of participants

A total of 280 marketeers participated in the study. The majority 60% (168) were between the ages of 31 and 39; 62.9% (176) were married; 40% (112) had completed at least their primary school; 98.2% of the population were identified as Christian and over 72.1% of the participants drank alcohol as shown in Table 1.

**Table 1 Socio-demographic Data of participants**

Variable	Category	Frequency
Age	18 - 30 years	31.1% (87)
	31 - 39 years	60% (168)
	40+ years	8.9% (25)
Marital Status	Married	62.9% (176)
	Single	23.9% (67)
	Divorced	8.9% (25)
	Widowed	4.3% (12)
Educational Level	Never been to school	5.7% (16)
	Primary	40% (112)
	Secondary	31.1% (87)
	Tertiary	23.2% (65)
Religion	Christian	98.2% (275)
	Islam	1.8% (5)
	Hinduism	0
	Other	0
Alcohol Consumption	Yes	72.1% (202)
	No	27.9% (78)

#### 4.2 Knowledge and acceptance levels of the COVID-19 vaccination.

Nearly all respondents (98.6%) were aware of COVID-19 vaccines, but only 69.2% said they would take the vaccine if it were made available. A majority (60.1%) of individuals who knew about the vaccine were between the ages of 31 and 39. Additionally, 40.2% had completed at least their primary education, and 63.2% were married as shown in Table 2. The majority 99.6% and 38.4% respectively, identified as Christians and used the internet to research the COVID-19 vaccines. On the other hand, 56.2% of those who accepted vaccinations were between the ages of 31 and 39. 52.1% of people had completed their primary school, and 72.2% were married. In addition, all of the vaccine recipients were Christians, and 42.8% of them found out about the COVID-19 vaccines online. The respondents' marital status and educational attainment were both substantially related to their willingness to receive the vaccine ( $p=0.024$  and  $p=0.03$ , respectively). On the other hand, religion and informational sources were linked to vaccine awareness ( $p=0.048$  and  $p=0.023$ , respectively).

**Table 2: Knowledge and acceptance levels of the COVID-19 vaccination.**

Variable	Category	Aware of Vaccine		P-value	Acceptance of Vaccine		P-value
		No (%)	N Yes (%)		No (%)	N Yes (%)	
<b>Age</b>	18 - 30 years	25% (1)	31.2% (86)	0.355	30.2% (26)	31.4% (61)	0.093
	31 - 39 years	50% (2)	60.1% (166)		64.6% (55)	56.2% (109)	
	40+ years	25% (1)	8.7% (24)		1.2% (1)	12.4% (24)	
<b>Marital Status</b>	Married	25% (1)	63.2% (175)	1	40.7% (35)	72.2% (140)	0.024
	Single	25% (1)	24.2% (67)		19.8% (17)	10.3% (20)	
	Divorced	25% (1)	8.7%		16.3%	9.8% (19)	

			(24)		(14)		
	Widowed	25% (1)	3.9%		23.2%	7.7% (15)	
			(11)		(20)		
<b>Educational Level</b>	Never been to school	50% (2)	5.%(14)	0.09	1.8%	6.7% (13)	0.03
			(5)		(5)		
	Primary	25% (1)	40.2%		20%	52.1% (101)	
			(111)		(56)		
	Secondary	25% (1)	31.2%		0.7%	9.8% (18)	
			(86)		(2)		
	Tertiary		23.6%		8.6%	32% (62)	
			(65)		(3)		
<b>Religion</b>	Christian	~	99.6%	0.048	84.2%	100% (194)	0.116
			(275)		(81)		
	Islam	100%	0.4% (1)		5.8%	0	
		(4)			(5)		
	Hinduism	~	0		~	0	
	Other	~	0		~	0	
<b>Source of information</b>	Family/Friends		17% (47)	0.023	1.1%	19.6% (38)	0.384
					(3)		
	Health Workers	50% (2)	10.9%		2.5%	9.3% (18)	
			(30)		(7)		
	Internet		38.4%		8.2%	42.8% (83)	
			(106)		(23)		
	Radio	50% (2)	10.1%		4.3%	6.2% (12)	
			(28)		(12)		
	Television		23.6%		7.9%	22.2% (43)	
			(65)		(22)		

<b>Overall</b>	4 (1.4%)	276 (98.6%)	86 (30.8%)	<b>69.2% (194)</b>
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### 4.3 Factors associated with awareness and acceptability of COVID-19 vaccines

Being a Christian was linked to lower odds of knowing about the COVID-19 vaccination compared to other religions (aOR=0.01, 95% CI: 0.01-0.20), when information source was controlled for. Male sex, being single, and being unemployed, on the other hand, were characteristics associated with vaccine acceptance. Additionally, respondents who were single had a 2.65 higher likelihood of consenting to vaccination than those who were married (aOR=2.65, 95% CI: 1.06-6.63). On the other hand, respondents with higher education were less likely to accept vaccination than those were less educated (aOR=0.32, 95% CI: 0.16-0.46), as shown on Table 3.

**Table 3 Factors associated with awareness and acceptability of COVID-19 vaccines**

Variable	Category	Awareness of Vaccine		Acceptance of Vaccine	
		aOR (95% CI)	P-value	aOR (95% CI)	P-value
<b>Marital Status</b>	Married			Ref	0.029
	Single			2.65 (1.06 – 6.63)	
	Divorced				
	Widowed				
<b>Educational Level</b>	Never been to school			Ref	0.002
	Primary			0.32 (0.16 – 0.46)	
	Secondary				
	Tertiary				
<b>Religion</b>	Christian	Ref	0.006	Ref	0.138

	Islam	0.01 (0.01 – 0.20)	0.2 (0.03 – 1.67)
	Hinduism		
	Other		
<b>Source of information</b>	Family/Friends	Ref	0.098
	Health Workers	0.3 (0.08 – 1.24)	
	Internet		
	Radio		
	Television		

#### 4.4 Reasons for hesitancy to be vaccinated against COVID-19

Out of the 86 participants who were hesitant to receive the COVID-19 vaccine, the majority 48.8% did not want to take the COVID-19 vaccines (Table 4). Similarly, 53.5% did not know if the COVID-19 vaccines had passed through all the stages of the clinical trial process, which led to them not taking the vaccines.

**Table 4 Hesitancy against COVID-19 vaccination among Marketeers**

Reasons for hesitancy	Frequency	Percentage
What is your reason for being hesitant to be vaccinated?		
<b>COVID-19 vaccines are not effective</b>	2	2.3%
<b>Concerned about the safety of the vaccine</b>	13	15.1%
<b>Does not need vaccination</b>	42	48.8%
<b>The COVID-19 outbreak in Zambia is not severe</b>	14	16.3%
<b>Other reasons</b>	15	17.4%
<b>Total</b>	86	100
Do you think COVID-19 vaccines have passed through all		

stages of clinical trials to ensure their safety?		
<b>I don't know</b>	46	53.5%
<b>Yes</b>	3	3.5%
<b>No</b>	37	43%
<b>Total</b>	86	100

#### 4.5 QUALITATIVE ANALYSIS

##### 4.5.1 Theme 1: perspectives on acceptance of the COVID-19 vaccine

Analysis of the findings from the short demographic questionnaire administered to the respondents IDI showed that more than half (69.2%) of the total sample (IDI participants) had received the vaccine (Table 2). The analysis of IDIs also confirmed that most participants had a positive attitude towards the COVID-19 vaccine and were willing to be vaccinated. They mentioned that the vaccine was mainly available and administered in the urban health facilities.

*The vaccine has been accepted.... because people have been vaccinated; if they had not accepted the vaccine, they wouldn't have been vaccinated (IDI informant).*

*They aren't so many people that have been vaccinated. It is because the people vaccinating are rarely seen here ( IDI participant).*

*For those who live in far-flung places, we don't know if they get vaccinated. I think it would be best to ask them ( IDI participant)*

*We can accept the vaccine, but we need sensitisation because even when we were going to school, our parents would tell us whether to accept the vaccine or not (IDI participant)*

*We have not accepted the vaccine because we don't know how it's going to affect the life of someone in future. In short, we don't know what the life span of people will be. This is the reason why we have not accepted it in our communities (IDI participant)*

##### **Theme 2: factors affecting acceptance of the COVID-19 vaccine**

Analysis of IDI data showed various factors contributing to the acceptance of the vaccine among study participant including lack of knowledge and information, myths and misconceptions, and negative attitude towards the vaccine. These factors are presented below

#### **4.5.2 Knowledge about COVID-19 vaccines**

Most Participants knew about the COVID-19 national vaccination programme. Although most community members ( IDI participants) perceived the vaccines to be beneficial, most participants lacked information about the vaccine, the various types, mode and frequency of administration. They explained that many would accept the vaccine if they had adequate information. Limited access to information, especially in rural areas, was cited as the main reason for the low acceptance of the vaccine. Marketeers and health workers were unanimous on the information gaps in their communities.

*People don't have the truth about the vaccine. The health team should come to educate us on how the vaccine works. They should come to communities, gather people and teach them about the COVID-19 vaccine (IDI Participant)*

*We know about the COVID-19 vaccine...most of us youth have heard about COVID-19 and know about the new vaccine (IDI Participant, health worker)*

#### **4.5.3 Limited access to information about the COVID-19 vaccine**

Overall, our findings show that there was limited access to correct and quality information about the COVID-19 vaccine among most community members who participated. Limited access to information was mentioned as a major reason for the low vaccine acceptance among the participants. Participants from urban settings had better access to information than those from rural areas.

*Many people get the information from the radio and TV. They listen to the radio and TV to hear what the Minister is saying. (IDI, Participant)*

*Many people don't watch TV here....they try to listen to the radio... They have TVs but they can't see anything....the signal is poor. Government needs to improve TV and radio signal here (IDI, Participant)*

*People in this area know nothing about the vaccine because they have never been sensitised. We need to be told what we can do so that we have an idea, the way it is at the moment, we don't have any idea (IDI participant)*

*We just hear from others in the community, because here most of the things we just hear them from these health workers when they pass and tell us, so we also believe what they tell us (IDI participant).*

*Most of us use our phones to get information.... we get everything from social media on our phones (IDI participant)*

#### **4.5.4 Myths and misconceptions about the COVID-19 vaccine**

One of the myths held among most IDI participants (especially in urban settings) was that western countries brought the vaccine in order to eliminate the African population. According to them, westerners brought the vaccine because they wanted to collect people's blood and kill them. They were concerned why certain vaccines given to the Africans had been rejected in Western countries.

*There is a rumour that people in our community are spreading that the medicine [vaccine] was made to kill us Africans because we are too many. So even as we accept that this must be true (IDI participant, Ndola).*

The other strongly held belief IDI participants from urban and rural sites (but not the youth) was that the vaccine was brought into the country for political reasons. They explained that politicians had gone into some contractual agreement with western countries to administer vaccines to their people in exchange for money. The money would then be used for political campaigns since it was a presidential and parliamentary election year (2021) in the country

*Some people are saying that they have brought the vaccine in an election period because they want them [community members] to die after giving them the injection so that they are sacrificed (IDI participant, Lusaka)*

*Some say when you get vaccinated, you will just live for a few years, and then you get sick and die; that is why we are scared of getting vaccinated (IDI participant).*

#### **4.5.5 Attitude towards the COVID-19 vaccine**

Analysis of IDI data shows that participants expressed different types of attitude towards the COVID-19 vaccine: positive, negative and ambivalent. The detailed findings on these attitudes are presented below.

Most IDI participants expressed a positive attitude towards the COVID-19 vaccine despite the misconceptions and lack of vaccine knowledge. Interestingly, our findings did not show differences in attitude between. Rather, rampant myths and misconceptions about the COVID-19 vaccine and personal or family's previous experience with the COVID-19 disease or vaccination seemed to have influenced the participants' attitude but in most cases not

much. In general, individuals or families who had not experienced the disease or seen someone suffer or die from COVID-19 disease expressed a negative attitude.

*I know the benefits are building our immunity and we don't get a chance to catch COVID-19, though people are saying even those that got the jab have tested positive, they don't have severe disease (IDI participant, Health worker)*

*The people to vaccinate us must be from our community; otherwise, when an outsider comes to vaccinate us, we will be sceptical because we don't know them (IDI participant)*

*We do not know the truth, and we are scared, that is why we don't go for the vaccine injection. We have been told that the vaccine injection is harmful to consumers (IDI participant).*

*What we are saying is that they should bring us someone who has been vaccinated so that they tell us about the goodness of being vaccinated (IDI participant)*

*We don't know how these things came, we are scared that we may die, and we can also be infected with other diseases. We don't see people who have been vaccinated, to tell us how they feel (IDI participant)*

## CHAPTER FIVE – DISCUSSION

### 5.1 Introduction

The study found that 98.6% of respondents knew about the COVID-19 vaccine, however, only 69.2% of them chose to receive it. Being a man, working, and single were all associated to vaccine acceptability, while being a Christian was linked to lower vaccine awareness.

### 5.2 Awareness and Acceptance Levels of COVID-19 Vaccines

The study found a positive awareness rate of 98.6% for COVID-19 vaccinations, which is higher than that recorded among local traders in the Democratic Republic of the Congo (99.3%) and Uganda (98.3%) (Kabamba et al., 2020). The traders cited the internet (38.4%), television (23.6%), and family/friends (17%) as their primary sources of information regarding COVID-19 vaccines. This could be related to awareness initiatives and information available on news and social media. However, this differs from a study done in the United States of America (USA), where mass media and health agencies were the main sources of information leading to a greater awareness of the COVID-19 vaccines.

Furthermore, our participants had a COVID-19 vaccine acceptance rate of 69.2%, which is higher than that observed in Zambia's general population (33.4%) and carers (47%) (Carleen et al., 2021). If Zambia intends to immunise the bulk of its people and lessen the impact of future waves, these low rates need to be addressed (Mudenda et al., 2022).

### 5.3 Reasons for Hesitancy to be vaccinated against COVID-19

Similar to other communities, the Zambian population has experienced increasing vaccine hesitancy as a result of false information and misconceptions concerning the COVID-19 vaccine (Mudenda et al., 2022a; Mudenda et al., 2022b). The results of the current study are comparable to low acceptance rates of 29.4% found among the public in Jordan, Kuwait, and Saudi Arabia (Sallam et al., 2021a), 34.9% among university students in Jordan (Sallam and al., 2021b), and 37.3% among students studying medicine in Uganda (Kanyike et al, 2021). This contrasts with noticeably higher percentages of 73% to 77% among medical students in the US 76.3% among college students in China, 86.1% among students at universities in Italy and 91.99% among medical students in Poland. Poland's high acceptability could be explained by the study's medical students' anxiety about getting sick and infecting their loved ones. Additionally, we have observed inconsistent vaccination acceptance rates among HCWs and others internationally. Similar to the students in our study, these range from low

acceptance rates of 21% in Egypt, 23,4% in Taiwan, and 27,7% in the Democratic Republic of the Congo to 55% in Russia, 71% in South Africa and 78.1% in Israel (Sallam, 2021), 78.5% in Greece (Papagiannis et al., 2021), and over 90% in China.

The current investigation found a link between religious affiliation and vaccine awareness and reluctance. This is in agreement to other study findings elsewhere that also found that religious beliefs have an impact on vaccine acceptance and awareness. In a study among medical students in USA, participants felt that prayers were more effective for preventing COVID-19 than vaccines, despite having excellent attitudes and awareness of the disease (Lucia et al., 2021). A study conducted in Zimbabwe found that Apostolic church members who trusted in the efficacy of prayer to keep them healthy had low vaccination awareness and acceptability (Machekanyanga et al., 2017). As a result, it is critical to consider spiritual and religious beliefs when developing interventions to increase vaccine awareness, acceptability, and uptake. Close coordination with religious authorities, as well as doctors and other healthcare experts with major power inside religious institutions, is required.

#### **5.4 Factors Influencing Awareness and Acceptability of COVID-19 Vaccines**

In our study, people who were married and unemployed were less likely to take the COVID-19 vaccine. In addition, educated traders had a greater rate of vaccine acceptance, which may be attributable to their knowledge of the benefits of vaccination.

Similar to students and health care professionals in other nations, vaccine reluctance among our traders was mostly caused by a lack of willingness to receive the shot (Saied et al., 2021; Fares et al., 2021; Kanyike et al., 2021; Patelarou et al., 2021). This includes worries that the COVID-19 vaccines have not successfully completed all necessary clinical trial phases to guarantee their safety and efficacy. The greater percentage of vaccine hesitancy shown in our study may possibly be related to unfavorable social media stories, conspiracy theories, and a general lack of awareness campaigns regarding the efficacy and safety of the various COVID-19 vaccines. Intriguingly, our most recent research in Zambia is consistent with findings from an earlier study conducted in Zambia, which identified traditional beliefs, lack of knowledge about the advantages of vaccines, fear of side effects, and other attitudes as obstacles to vaccine access (Pugliese-Garcia et al., 2018). In order to help community chemists and others when discussing prevention with patients, including providing vaccines where available, it is necessary for health authorities to offer adequate information on the safety and effectiveness of vaccines. In addition, more health education needs to be

distributed by government organisations and HCWs to dispel misunderstandings and misinformation about COVID-19 vaccines. It's quite concerning and needs immediate action that pharmacy students, who will be future HCWs, have a poor vaccination acceptance rate. We advise top academics to deliver enough COVID-19 vaccination sensitization and education programmes to university students immediately in light of this. The general public and HCWs should both participate in these programmes.

Our findings imply that attitudes towards the COVID-19 vaccine have a significant impact on vaccination intentions. While the majority of participants had a mixed opinion of the COVID-19 vaccine, positive, negative, or ambivalent, only half of the participants thought it was beneficial. Place of residence, age, informational availability, vaccine myths and misconceptions, as well as personal experiences with the COVID-19 disease and the vaccine, all appear to have had an impact on participants' attitudes. Participants who had either personally experienced the disease or witnessed a friend or family member suffer from it expressed more favourable opinions of the vaccine than those who had not. In a similar vein, individuals who had either received the vaccine, witnessed it, or heard about someone who had exhibited more appreciation for its advantages than those who had not. The main perceived benefits were protection from COVID-19 and a less severe form of the illness if one contracted it. People's perceptions of the benefits of the vaccine appear to be a significant factor in determining how they feel about it. Participants who felt the vaccine had no benefits expressed a bad attitude. This finding is consistent with the reasoned action approach, which holds that people weigh the risks and advantages of a potential action before taking it. Therefore, a person's attitude will depend on how they assess the perceived benefits in relation to the risks. People who see more benefits are more likely to view the target behaviour favourably and even adopt it. These findings are in agreement with those in Libya as reported by (Elhadi et al, 2021).

## **CHAPTER SIX – CONCLUSION**

### **6.1 Conclusion**

This study revealed that market vendors at Ndola Main Masala Market had good knowledge levels of COVID-19 vaccinations. In contrast, they were less willing to embrace the offered vaccine due to doubts on its efficacy. There was a positive awareness rate of 98.6% for COVID-19 vaccinations among the marketeers, with the source of information being internet, television and family friends. The married and unemployed participants were not willing to take the COVID-19 vaccine. The myths surrounding the pandemic still needs to be untied if vaccine acceptance could be enhanced.

### **6.2 Strengths of the study**

The need for better information on the advantages of vaccines for the general people and merchants across the nation has been made clear by this study, which is the first to analyse the awareness and acceptability of COVID-19 vaccines and associated factors among marketers in Ndola District of Zambia. The study also looked into the influences on COVID-19 vaccination and the causes of vaccine reluctance. This is crucial because it may tell the government, the Ministry of Health and other parties involved about the crucial details to concentrate on while putting vaccination programmes into place.

### **6.3 Limitations of the study**

We are conscious of the limitations of our study. The results of the study cannot be applied to all Zambians because it was restricted to marketers in Zambia. Furthermore, our results might have been impacted by worries about the large proportion of Christians and minority unmarried participants. Despite this, we think the results are solid and offer guidance for the future.

### **6.4 Recommendations**

- Community people should be trained by vaccine ambassadors to spread vital health information in their neighborhoods. Ambassadors work best when they are respected members of the community who hold similar values to their peers. Being an ambassador is open to everyone; it is not just for community or political leaders and thus it should be highly embraced in the healthcare system in order to have the majority of the Zambian community vaccinated from COVID-19.

- Patient-centered dialogues referred to as "motivational interviewing" can boost the person's motivation and likelihood of adopting the healthy behaviour in this case accept the COVID-19 vaccine. In spite of the WHO declaring the world COVID-19 free on the 5<sup>th</sup> of May 2023, it is still vital for the Zambian Health system to embrace motivational interviewing so as to increase the rates of people getting vaccinated during pandemics. It is just one of the many approaches that could be important for future inference.

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## APPENDIX 1: STUDY TIMELINE

The study period will be 13 weeks.

Time in weeks	1	2	3	4	5	6	7	8	9	10	11	12	13
Identify research area	X												
Formulation of research questions	X												
Formulate research strategy, research design and select methods	X	X											
Write research proposal	X	X	X										
Negotiate access	X												
Literature review	X	X	X	X	X	X	X						
Data collection				X	X	X							
Data analysis						X	X	X	X				
Write first draft									X	X			
Write second draft										X	X		
Write final draft											X	X	
Thesis due													X

## APPENDIX 2: OPERATIONAL BUDGET

ITEM	QUANTITY	UNIT COST	TOTAL COST
STATIONARY			
Bond paper	02	50	K100
Binding of Final Report	05	10	K50
Cartridge	01	900	K900

	SUB TOTAL		K1050
QUESTIONAIRES			
Ream of paper	2	50	K100
	SUB TOTAL		K100
OTHER COSTS			
Transport	02	50	K100
Lunch	02	85	K170
Supervision	-	-	K1000
	SUB TOTAL		K1,270
GRAND TOTAL			K 2420

### **Appendix 3: PARTICIPANTS CONSENT SHEET**

**Survey title:** Awareness and Acceptance Levels of COVID-19 Vaccines and Associated Factors among Marketeers and their Customers at Main Masala Market of Ndola District

**Principal Investigator:** Dingani Nkhuwa Contact No: 0979488743

**Supervisor:** Dr Ruth L Mfunne

**Email address:** [lindizyani@gmail.com](mailto:lindizyani@gmail.com)

Dear participant,

You are invited to participate in the research project described below:-

#### **What is the research project about?**

The project is aimed at assessing the awareness and acceptance levels of COVID-19 vaccines and associated factors with a hope of identifying gaps that will enable the researcher make recommendations to relevant authorities in a quest to contain, reduce the prevalence and preferably eradicate the novel corona virus. This positive result may help restore all economic activities to normal owing to the fact that all sectors of the economy have been negatively hit by this novel viral pandemic.

#### **Why have I been chosen?**

You have been chosen because marketers are among the vulnerable people in society owing to the nature of conducting business that makes you more exposed. Your responses will help the researcher to make recommendations to relevant authorities that will enhance your survivability both from the health and economic point of view.

#### **Do I have to take part?**

It is up to you to decide whether or not to take part .If you decide to take part, you will be given a questionnaire that you will answer and will be written in either English or Bemba or will be read to you while your responses being recorded in the spaces provided. If you will not be comfortable with either of these languages, interpreters will help you in either Nyanja, Lozi, Tonga, Kaonde, Kalunda or Luvale respectively. You will still be free to withdraw from the study at any time should you feel uncomfortable. You do not have to give a reason for your withdrawal.

#### **What will happen to me if I take part?**

There is no monetary gain for participating in this study. The benefit is that the results of the findings will help the researcher to disseminate to relevant authorities as the later can make them make policies that will improve our welfare.

#### **What do I have to do?**

Please answer the questions in the questionnaire. There are no other commitments or life style restrictions associated with participating.

**What are the possible disadvantages and risks in taking part?**

Participating in this research is not anticipated to cause you any disadvantages or discomfort nor any potential physical and/or psychological harm or distress.

- ✓ Do not put your name on this questionnaire.
- ✓ Only choose a single answer by ticking in the space provided      [ ]

**Section A: Demographic Information**

1. How old are you?
  - a. 18 – 30 years      [ ]
  - b. 31 – 39 years      [ ]
  - c. 40 years and above      [ ]
  
2. What is your marital status?
  - a. Married      [ ]
  - b. Single      [ ]
  - c. Divorced      [ ]
  - d. Widowed      [ ]
  
3. What is your level of education?Q
  - a. Never been to school      [ ]
  - b. Primary      [ ]
  - c. Secondary      [ ]
  - d. Tertiary      [ ]
  
4. What is your religion?
  - a. Christian      [ ]
  - b. Muslim      [ ]
  - c. Hindu      [ ]
  - d. Other      [ ]
  
5. Do you drink alcohol?
  - a. Yes      [ ]
  - b. No      [ ]

**SECTION B : AWARENESS AND ACCEPTANCE LEVELS OF COVID-19  
VACCINE**

6. Have you heard of the COVID 19 vaccine?
- a. Yes [ ]
  - b. No [ ]
7. Where did you get information on COVID-19 vaccines from?
- a. Family/friends [ ]
  - b. Health workers [ ]
  - c. Internet [ ]
  - d. Radio [ ]
  - e. Television [ ]
8. Which COVID-19 vaccine do you know?
- a. Johnson & Johnson
  - b. Astra-Zeneca
  - c. Pfizer/BioNtech
  - d. Sinopharms
9. Are you vaccinated with COVID-19 vaccine?
- a. Yes [ ]
  - b. No [ ]
10. Can COVID-19 vaccine reduce virus transmission?
- a. I don't know [ ]
  - b. Yes [ ]
  - c. No [ ]
11. Do you think COVID-19 vaccine has passed through all the necessary stages to ensure it's safety?
- a. I don't know [ ]
  - b. Yes [ ]
  - c. No [ ]

12. Are COVID-19 vaccines meant for children only?
- a. I don't know [ ]
- b. Yes [ ]
- c. No [ ]
13. Do you have confidence that when you get vaccinated with COVID-19 vaccine, you can protect yourself, family, and community and eventually be an ambassador in a quest to curb, contain and eventually eradicate this pandemic?
- a. Yes [ ]
- b. No [ ]

**SECTION C: FACTORS ASSOCIATED WITH THE CURRENT HESSITANCY OF COVID-19 VACCINE**

14. Do you have knowledge of the vaccines side effects ?
- a. Yes [ ]
- b. No [ ]
15. Do you have any concerns about the differences in vaccine manufacturers?
- a. Yes [ ]
- b. No [ ]
16. What is your reason for refusal to be vaccinated?
- a. COVID-19 vaccines are not effective [ ]
- b. Concerned about the safety of the vaccine [ ]
- c. Does not need vaccination [ ]
- d. The COVID-19 outbreak in Zambia is not severe [ ]
- e. Other reasons [ ]

17. Do you think COVID-19 vaccines have passed through all stages of clinical trials to ensure their safety?
- a. I don't know [ ]
- b. Yes [ ]
- c. No [ ]

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**SECTION D: RELUCTANCE IN LEGAL ENFORCEMENT**

18. Do you perceive COVID 19 to be a disease that would lead someone to lose his/her life?
- a. Yes [ ]
  - b. No [ ]
19. Does the rate of infection matter to you?
- a. Yes [ ]
  - b. No [ ]
20. As a marketer, how do you handle the COVID 19 situation during trading hours
- a. Its business as usual [ ]
  - b. I make sure I am masked up and sanitize regularly [ ]
  - c. I educate my customers on COVID 19 if they are not masked up [ ]
  - d. Each one for him/herself [ ]
21. From the time when the COVID 19 pandemic was declared, how regular do you implement the preventive measures?
- a. Rare [ ]
  - b. Often [ ]
  - c. Most often [ ]
22. Do you think there is a viable push factor that would make everyone take it upon him/herself to follow COVID 19 guidelines?
- a. Yes [ ]
  - b. No [ ]
23. Do you think, the local authorities or government in particular are doing their level best in legal enforcement towards COVID 19 guidelines?
- a. Yes [ ]
  - b. No [ ]

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**THANK YOU FOR YOUR PARTICIPATION**

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**SCHOOL OF MEDICINE AND HEALTH SCIENCES  
RESEARCH ETHICS COMMITTEE**

Ref no: IORG0010092-2023/018

Date: 15<sup>th</sup> DECEMBER, 2022

DINGANI NKHUWA - BSPH1713131

**Re: RESEARCH TITLE: AWARENESS AND ACCEPTANCE LEVELS OF COVID 19  
VACCINES AND ASSOCIATED FACTORS AMONG MARKETEERS AND THEIR  
CUSTOMERS AT MAIN MASALA MARKET OF NDOLA DISTRICT**

The above research was submitted to the research ethics committee for review. The study has no major ethical problems and is approved subject to the following:

1. The study cannot be changed without express permission of the UNILUS Research ethics committee
2. Approval from the Lusaka District health Management or equivalent health authorities should be sought.
3. The study tools should be added.
4. An informed consent form should be attached and filled by all study participants (If dealing with primary data)
5. The risks and benefits should be included in the consent form.
6. Ensure before commencement that approval is sought from ZNHRA

Congratulations and the committee wishes you success in your work.



Prof Kasonde Bowa  
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