# **University of Zimbabwe**

## **Faculty of Social Studies**

## Urban Informal Manufacturing through the Lens of Planning Law in Zimbabwe: Case of Harare

By

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Thesis submitted in fulfilment of the Master of Philosophy Social Studies Degree,

Submitted for Examination, August 2018

#### DECLARATION

I, Simbarashe Show Mazongonda, student number R056383Q, do hereby declare that this piece of work is a product of original research I undertook in fulfilment of the requirements of the Master of Philosophy Social Studies (MPhilSS) degree. Although I conferred with others in compiling this thesis and drew upon an assortment of sources cited in this study, the content of this thesis report is my original work.

### DEDICATION

To my son, Akudzwe McShow,

To my wife, Mhamha Chenge, for providing me with invaluable support throughout the study

period,

To my parents, Emily and Nicholas Mazongonda, who encouraged me to press on,

To my brothers, Wellington, Bester, Learnmore, and sister, Shine, for affording me unlimited

moral support.

#### ACKNOWLEDGEMENTS

I begin by acknowledging the contribution made by my principal supervisor, Prof. I Chirisa. His way of reducing concepts to familiar language was a basis of great motivation. "*Writing is all about rewriting. Do not limit yourself because writing is an unceasing process*". These were his words during the supervision period. I restructured the thesis several times, and this helped me to improve on self-criticism and writing. He was always ready and eager to help, even after working hours.

Special thanks also go to my associate supervisors, Prof. M Mzumara and Prof. T Gumbo from Bindura University of Science Education and University of Johannesburg respectively. Prof Mzumara helped me to keep my writing style precise and concise. He continuously discouraged verbosity at the expense of delivering facts. Prof Gumbo trained me critical analysis. It was through him that I fully appreciated the significance of background information in situating a discourse in existing knowledge. The advice of my associate supervisors in carrying out this research was invaluable.

I also wish to thank Mr Smart Dumba for the moral support. He was studying for his Doctor of Philosophy Social Studies (DPhilSS) Degree at the time I was working on this thesis. We shared our experiences in undertaking field work and reporting findings. As we conjointly studied, I learnt a lot from the way he navigated through issues, particularly in developing a review chapter. Thanks also go to Mr Isaac Chikutukutu, a data scientist, who developed a mobile—based geo—application that was used for data collection during the sample survey. He also served as an enumerator and technical facilitator during fieldwork, and later helped me with data reduction and analysis. His keenness to learn and share his experience as a statistics scientist was priceless.

I acknowledge Tonderai Mudhiriza, Martha Murindagomo, Tafadzwa Dube, Thomas Karakadzai, Samson Mutarisi, Aaron Maphosa, Liaison Mukarwi, Witness Mawona and Kudakwashe Chaweka who assisted with the survey and enumerations. A big thank you goes to Mr Luckmore Guzhazha who assumed the political facilitator role. During this phase of the survey, he was secretary for education with the ZANU–PF youth wing. He helped ease admission to the Complex and Siyaso home industries considering that there were political gate keepers. He also excused enumerators from attending a compulsory meeting called for by ZANU–PF during collection of data in Siyaso home industry.

I acknowledge the invaluable contribution made by Mr Chaeruka of the Department of Rural and Urban Planning, University of Zimbabwe, Justice Dube of the High Court, and Mr Chiwanga, a town planning assessor, for suggesting on areas that needed improvement. Special thank you also go to Takunda Munashe Mandebvu who helped me with pagination and formatting of the final document. His contribution is much appreciated. On a similar note, a big thank you goes to Folen Murapa who refined the thesis and removed obscurities in meaning. Her editorial role improved the flow of the study.

Above all, I express gratitude to God Almighty for the opportunity to undertake this study. Though challenging at times, God availed to me friends, colleagues and family to encourage me, support me when stressed.

#### ABSTRACT

This study was motivated by the clarion call by the Zimbabwean government to compile a national informal sector database to ease tax collection. The thesis was designed as a multipleembedded situational study of Gazaland, Complex and Siyaso home industries in Harare. Harare, being the capital city, attracts large volumes of activity and specific study sites were purposively selected because they are the main home industries in Harare. Secondary data was gathered using document analysis and primary data was gathered using participant observation, vital informer interviews and a self-administered questionnaire entrenched in a mobile geoapplication. The questionnaire survey used census blocks, that is, all manufacturers (642) in three sampling windows took part in the survey. One instrumental finding of this thesis is that stakeholders need different data sets for them to make knowledgeable decisions. These include demographic, psychographic, behavioural, spatial and compositional datasets. The identified data needs were merged into the database model. The Application Programming Interface (API) of the prescribed database model provides users with different data privileges classified in this study as view, write, edit and delete privileges. The database model was designed in a scalable form to allow for incorporation of other sites elsewhere and to add variants of informality not taken in the thesis. A total of 44 tests carried out to analyse the association between informal manufacturers psychographics and town planning principles revealed that there is a very weak association between these two variables with a coefficient of resolve of fewer than 2% ( $r^2 < 0.02$ ). This means that the performance of manufacturers in interpretation of town planning principles is, to a larger extent, explained by some factors other than their knowledge, perception and attitude towards town planning objectives such as order, safety, amenity and health. Also observed and mapped is the reality that manufacturers conglomerate alongside roads and in open spaces within home industries. Some have even permanently made impassable entrance roads for five years plus. Moreover, property owners in home industries subdivide and parcel out land without the permission from the Local Planning Authority (LPA). A common development noted across study sites is that several manufacturers are dotted around boundaries of home industries where they occupy open spaces and backyards of residential properties. It also emerged that specialisation, workmanship, strong social ties, mentorship, and tool and knowledge sharing are several untold elements cementing the informal sector. The study also showed that psychographics (attitude, knowledge and perception) of manufacturers are weak predictors of their behavioural reactions to the anticipated tax measure, but politics of space and societal connections were found as the major determinants. Viewing the study findings through planning law lens brought to light issues concerning the prerequisite to redevelop planning areas since the operative master and local plans have been outpaced by informal activities. The thesis puts forth three major contributions to existing knowledge on urban informality. It compiled comprehensive, spatial and quantitative data about informal manufacturers in Harare, Zimbabwe. Firstly, it is comprehensive because it assembled a wide spectrum of datasets that served as building blocks to the database called for by the Zimbabwean government. Secondly, the spatial statistics approach used enabled ease of analysis of manufacturers with respect to their relative spatial locations. Thirdly, the study quantified psychographic and behavioural attributes described in most accessible studies. The assemblage of comprehensive, spatial and quantitative data about informal manufacturing in Harare makes the study findings credible and easy to replicate with a low variance. The study recommends the scaling up of planning education, transforming operational orderliness into spatial orderliness, redevelopment of affected planning areas, scaling up the proposed database to capture other variants of informality and geographical areas not covered in the thesis and progression of a tax approach that considers concerns of manufacturers.

Key Words: Urban Informality; Database Model; Spatial Statistics; Home Industry; Harare

## LIST OF ACRONYMS

ACA	Administrative Court Act
API	Application Programming Interface
CBD	Central Business District
DPO	Database Privileges 'Onion'
DPP	Department of Physical Planning
DST	Duality School of Thought
EMA <sub>1</sub>	Environmental Management Act
EMA <sub>2</sub>	Environmental Management Agency
EO	Enforcement Order
ESAP	Economic Structural Adjustment Programme
FTLRP	Fast Track Land Resettlement Programme
GIS	Geographical Information System
GoZ	Government of Zimbabwe
GPS	Geographic Position System
IADB	Inter-American Development Bank
IEEA	Indigenisation and Economic Empowerment Act
ILO	International Labour Organisation
IMF	International Monetary Fund
IP	Internet Protocol
JSON	Java Script Object Notation
LBCS	Lovedale Brake and Clutch Specialists
LEDRIZ	Labour and Economic Development Research Institute of Zimbabwe
LPA	Local Planning Authority
MDC M	Movement for Democratic Change Mutambara
MDC T	Movement for Democratic Change Tsvangirai

MDC	Movement for Democratic Change
MFED	Ministry of Finance and Economic Development
MSMSE	Ministry of Small to Medium Scale Enterprises
NLP	Natural Language Processing
NSSA	National Social Security Authority
OECD	Organisation for Economic Cooperation and Development
OM	Operation Murambatsvina
PBC	Perceived Behavioural Control
РО	Prohibition Order
PPMCC	Pearson Product Moment Correlation Coefficient
QGIS	Quantum Geographical Information System
RA	Roads Act
RTCPA	Regional, Town and Country Planning Act
SDG	Sustainable Development Goal
SI	Statutory Instrument
SST	Structural School of Thought
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
VAT	Value Added Tax
ZANU-PF	Zimbabwe African National Union Patriotic Front
ZESA	Zimbabwe Electricity Supply Authority
ZIMRA	Zimbabwe Revenue Authority
ZIMSTATS	Zimbabwe National Statistics Agency

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#### **CHAPTER ONE**

#### **INTRODUCTION**

#### **1.1 Background to the Study**

Urban informality is growing at an unprecedented rate (International Monetary Fund (IMF), 2007; Mujumdar and Borbora, 2012; Uzhenyu 2015). Globally, sources concur that over half of the populace is employed in the informal sector and it is projected that urban informality will overtake the formal sector as it is taking off on an upward trend (IMF, 2007; Schneider, Buehn and Montenegro, 2010; IMF 2013). As of 2007, the spatial distribution of the informal sector in Sub–Saharan Africa was 38.4%; 36.5% in Europe and Central Asia (mostly transition countries), and 13.5% in high–income Organisation for Economic Cooperation and Development (OECD) countries (Schneider *et al.* 2010). This is a true image that the informal sector, in comparison to the formal sector, is very large in Sub–Saharan Africa as compared to some portions of the world.

The magnanimous scope of the informal sector in Sub–Saharan Africa is evidenced by huge amounts of money circulating in this sector (Shah, 2012; Government of Zimbabwe (GoZ), 2014a; Murwira, 2014). It is approximated that seven billion dollars (US\$7bn) was in circulation in the Zimbabwean informal sector as of that date (Murwira, 2014; Uzhenyu, 2015). This total worth of trade outweighs the total worth of the Zimbabwean 2014 national budget, which stood at over four billion, four hundred million dollars (US\$4.4bn) (GoZ, 2014b). This case is not peculiar to Zimbabwe (Shah, 2012; Keen and Kanbur 2015). Likewise, Zambia is concerned about non–payment of corporate tax by the informal sector despite its large size and hefty quantities of money circulating within it (Shah, 2012).

The character of informality is that it is visible in all stages (primary, secondary and tertiary) of production (Chirisa, 2007; Majumdar and Borbora, 2012; Shah, 2012). Importantly, the informal manufacturing sector, in the secondary level of production, has risen above various methods of informality because it directly creates employment (Schneider, 2005; Luebker, 2008a) and indirectly creates linkages with other organisations (Majumdar and Borbora, 2012), and generates high value of trade. Goings—on in the manufacturing sector involve processing of raw supplies which requires a fixed place of operation and this brings spatial planning into play. Spatial planning has been defined as a reciprocal relationship between spatial structures and socio—economic processes, and is about facilitating and conditioning socio—economic processes by way of analysing the accurate location of measures of analysis (Bertolini, 2006).

Existing research has shown that economies of the metropolitan regions in emerging economies are increasingly transforming from formal into informal economies (International Labour Organisation (ILO), 2002; Schneider, 2000; Schneider, 2002). Thus, a new economic niche is developing and huge amounts of money are in circulation in this economic niche (IMF, 2013; Murwira, 2014; Keen and Kanbur, 2015). There exists dearth on the specificity of their accurate spatial locations. As such, suggestions have been put forth on different fronts to compile comprehensive, spatial data on urban informality (Chirisa, 2007; Sparks and Barnnet, 2010; Dube and Chirisa, 2012; GoZ, 2014a). Precisely, the GoZ, through sections 395 to 400 of the 2014 Mid–Term Fiscal Review, called for the expansion of a national informal sector database to include, "the landscape of trade, address, among other things, and this information would be shared with micro–finance institutions, banks and Zimbabwe Revenue Authority (ZIMRA)" (GoZ, 2014a, p. 97). This is imperative since informal enterprises are rapidly growing and seem more 'free riding' than anything (Chirisa, 2007; Dube and Chirisa, 2012).

The period that the GoZ intended to compile all—inclusive statistics on urban informality was characterised by scarcity, unreliability and incompleteness of data about urban informality (Dube and Chirisa, 2012). This follows the consensus that issues surrounding informality are complex and ever dynamic (Schneider, 2005; Miraftab, 2009; Moreno–Monroy *et al*, 2012; Keen and Kanbur, 2015). This is partly described by the point that there is a plethora of alternative views, as deliberated in part in Chapter Two, on urban informality (Schneider, 2005; Kanbur, 2009; Villamizar–Duarte, 2015). As such, literature on urban informality is vast, disjointed and fast expanding in different directions. To this effect, Kanbur (2009, p. 1) claimed that, *"the literature in total is in a mess*". This compels the necessity to assemble metadata and end–user data about informal manufacturing.

#### **1.2 Problem Statement**

Outside regulated markets, informal operators enjoy free riding, evade taxes and operate in desecration of land use zoning laws (Kanbur, 2009; Shah, 2012, Keen and Kanbur, 2015). Generally, there is absence of complete, spatial and accurate data about informal enterprises and it is posited that collecting tax from this sector remains a mammoth task (Shah, 2012; Sparks and Barnett, 2010; GoZ, 2014a). Further, general absence of information on practical realities makes it challenging to formalise, capture value and ensure effective revenue collection (Jerie, 2013; Uzhenyu, 2015). Therefore, this poses serious challenges, such as devising sound management systems, to planning since policy formulation requires precise and comprehensive data.

Several studies have called for compilation of accurate all-inclusive statistics on urban informality to ensure informal sector accountability and straightforward its management (Shabaneh, 2008; Sparks and Barnet, 2010; Shah, 2012; GoZ, 2014a). However, in as much as

it can be determined, empirical studies that seek a comprehensive, spatial analysis of informal enterprise in Zimbabwe are missing despite numerous suggestions to do so. Academic attempts responding to this call have been done (Chirisa, 2007; 2009b; 2013a; Muponda, 2012). However, these were largely non-spatial and descriptive. They borrowed information from small geographical areas (case study) without concern to their relative spatial locations. The emphasis of this thesis is to provide spatial data on informal trade in Harare, through which end user requirements are met. Unless such kinds of researches are carried out, nurturing of informal enterprises and collection of tax remains a challenge.

#### **1.3 Objectives**

Overall, this study seeks to create a prototype geo-database (assembling operational, psychographic, behavioural, locational and demographic data) of the informal trade sector in Harare and analyse assembled data of manufacturers in respect of their citizenry obligations such as paying tax and abiding by planning legislation.

#### **1.3.1 Specific Research Objectives**

The specific research objectives are to:

- review the policy, legal and institutional framework governing informal industries in Zimbabwe;
- assess the data needs of various key stakeholders (revenue authorities, local authorities, banks, micro-finance institutions);
- 3. establish the spatial and compositional features in informal manufacturing industry in Harare with the view of understanding their per standard industrial classification, locational rationale, and their business linkages;
- 4. map the spatial distribution of informal manufacturing activities in Harare with the view

of providing evidence for their intensity and interaction between and within clusters;

- understand cognitive human factors (specifically, knowledge, attitude, and perception) of informal manufacturers in respect of their citizenry obligation to abide with planning law;
- 6. model informal manufacturers' behavioural reaction to the suggested tax ration; and
- collate and coordinate synthesised datasets into a database model for use by different end users

#### 1.3.2 The Research Question

Does compilation of a geo-database of informal manufacturing industry possess a realistic opportunity for understanding its spatial and compositional elements, cognitive human factors of manufacturers in relation to planning ideology, and subsequently provide the basis for promoting manufacturers' citizenry obligations such as paying tax and abiding with laws of planning?

#### **1.3.3 Research Hypotheses**

Stated in this segment are six conjectural statements used as points of entry into the study of informal trade in Harare. Tests are undertaken in different parts of the study using empirical evidence to test the rationality of the following conjectural statements.

- Nature of products (products that are an end in themselves or can be used as inputs in other processes) produced in home industries do not depend on whether operators have full toolkits;
- The sort of tools used by manufacturers are not influenced by whether one owns a full toolkit;

- Informal manufacturers' psychographics do not hinge on their knowledge of town planning principles;
- 4. The manufacturers' views on the suggested tax measure are independent of the psychometric test carried out;
- 5. Informal manufacturer's population has the same proportion as the Zimbabwean population; and
- 6. Manufacturers' behavioural responses are independent of geographic expanse of home industry.

The six conjectural statements in this segment are meant to test on various matters concerning concentration and collaboration of manufacturers between and within study sites. Outcomes of the survey will prove these hypotheses true or false. Either way, a resultant discovery made will contribute to existing knowledge. Sections 2.8 and 6.2, will explain in full that this study extracted five constructs from existing town planning principles, that is, safety, order, health, amenity and convenience, and used three illustrations encapsulated in psychographics (knowledge, perception and attitude) to assess for freedom of association of manufacturers psychographics and town planning principles.

#### 1.4 Insights to Theory, Methodology, Policy and Practice

In Section 2.2.1 of this thesis, informal sector theories were traced to have a clear understanding of urban informality. This marked and rapid transformation of the informal sector ended by giving a projection of likely theoretical explanations of informality in the near future. An input of this nature can help future researchers in predicting and explaining variables, concepts, ideas, hypotheses and assumptions. Furthermore, evidence from this study suggests that theories should not be assumed as mutually exclusive, but a multiplicity of theories can clarify

complex subjects (informal sector, in this case). Informal sector theories (duality, structural and post-colonial theoretical views) were used to illustrate the advent of informality, cluster theory to explain conglomeration of manufacturers in space, institutional theory to explain their interaction and networking in home industries, and theory of planned behaviour to explain their psychographics and behavioural intents.

In terms of design, this study used a spatial geometric methodology to structure a multiple—embedded situational study of three home industries in Harare. Within the three study locations, the concept of census blocks was effected to survey all manufacturers using a mobile—based data collection strategy. Numerous challenges and by what means they were overcome in using this strategy are noted in the thesis. Specifically, Section 3.11 discusses lessons absorbed during data gathering and exploration which future researchers in similar fields can refer to in structuring their studies. It must be distinguished that the contribution here is not in respect of the approach itself, but its contextual application and inference in studying informal manufacturing because, in as much as it can be established, most accessible studies on urban informality used non—spatial strategies.

The input of this study to practice and policy is significant on three counts of providing comprehensive, spatial and statistical data about informal trade. By compiling a geo-database of informal manufacturing in Harare, this study contributes to the overall goal of having full data on urban informality which was called for by the GoZ because it provides accurate and credible data profile. It is envisaged that access to up-to-date, complete, authentic, and reliable spatial and relational data on informality is vital for policy formulation. The devised spatial geometric approach to studying informal manufacturing gives spatial deviation in intensity, and evidence for clusters of behaviour. It is of primary interest to policy makers to

have contact with 'hard' evidence that effectively anticipates operators' behavioural reaction to the suggested tax measure. It has been recommended that when compiling comprehensive data information must be borrowed equally across all small areas with respect to their comparative spatial localities (Waller and Carlin, 2010). In the current study, comprehensive data is founded on counts of observed cases within small industrial clusters (Gazaland, Complex and Siyaso home industries as outlined in Sections 1.5 and 3.5.2).

#### 1.5 Notes on Study Areas

Briefly summarised in this segment is a remark on the study areas. This lead—in summary gives readers a rough visual impression of study areas before fuller picture is provided. Essentially, it provides an imaginative picture of what to expect in study and contextualises issues discussed in this thesis. The summary in Table 1.1 places emphasis on location, historic background, and growth strides of study areas. Details on how and why these study sites were consciously selected are provided in Section 3.5.2. This thesis was undertaken in three home industrial clusters in Harare. These are the Complex, Gazaland and Siyaso home industries. Table 1.1 shows the summative descriptor of study areas.

As alluded to in Table 1.1 the Complex and Gazaland industrial clusters are South–West of Harare, whereas Siyaso is adjacent to the CBD. As far as development control is concerned, Gazaland and the Complex are in the Western District and Siyaso is in the Central District (Mazongonda and Muromo, 2011). This thesis is limited to the inquiry of informal trade activities in home industries and did not analyse the ancillary activities to the industrial sector. Furthermore, only spatial, behavioural, operational, compositional, psychographic and demographic elements of informal manufacturing were studied. Where other issues are discussed, they are meant to clarify and specify issues inclined to the main thrust of this study. Table 1.1: Summative Descriptor of Study Areas (Brand, 1986; Kamete, 2010; Muponda, 2012; Jerie, 2013; Masarirambi, 2013)

Study Area	Summative Descriptor
Complex	The Complex is in the South-West of Harare's Central Business District (CBD),
	approximately thirty (30) kilometres from the (CBD). It is known widely for manufacturing
	office and household furniture. The cluster organically grew following the continuous
	downturn of the Zimbabwean economy until 2005, the eve of the historical Operation
	Murambatsvina which razed all the illegal structures. The Ministry of Small and Medium-
	Scale Enterprises, in line with Statutory Instrument 216 of 1994, formalised this site and
	then constructed 483 factory shells. The Complex was then assimilated into the Harare
	Master Plan.
Gazaland	Gazaland, a concentration of informal motor-industry firms and individuals, is also situated
	in the South-Western part of Harare's CBD. It is approximately twenty-five (25) kilometres
	from the CBD. This informal industrial site grew soon after independence subsequent to the
	eradication of the colonial urban laws which promoted urbanisation which was not
	supported with adequate formal employment. Gazaland continued to grow following the
	downward trend of the Zimbabwean economy.
Siyaso	Siyaso is adjacent to the Central Business District of Harare, about five (5) kilometres to
	the southern side of Harare's CBD. Siyaso cannot be recognised with a particular form of
	enterprise. A wide array of industrial activities such as sheet metal work, manufacturing of
	furniture and agricultural implements are common in this industrial cluster. Siyaso
	organically started soon after independence with people selling wares along foot paths and
	grew to include manufacturing of an assortment of products. The growth was accelerated
	by the loss of employment as a result of the Economic Structural Adjustment Programme
	(ESAP) launched in the early 1990s. This growth was capped in 2005 by Operation
	Murambastvina which destroyed all the informal structures as a clean-up strategy. Siyaso
	has resurfaced alongside the banks of Mukuvisi River as the informal sector remains
	presenting an alternative course for the country's unemployed and destitute people.

## **1.6 Organisation of the Study**

The study is structured in eleven chapters. Figure 1.1 is a diagrammatic lead—in summary illustrating the arrangement of the study.



Figure 1.1: Organisation of the Study (Researcher Compilation, 2016)

Chapter one sets the tone of the study by stating the research problem, study objectives and a general framework of the study. Literature Review, Chapter Two, expands on the research problem by giving a detailed review of current and relevant literature and underlying theoretical issues. Chapter Three, Research Methodology and Design, answers the six questions; what,

why, where, how, who, and when data used to advance the model of an informal sector geo-database was hewed. User data needs in Zimbabwe are deliberated in Chapter Four from institutional, legal and policy perspectives. Chapters Five, Six and Seven discuss the practical realities in three study areas (Siyaso, Gazaland, and the Complex) with the view of tracing similarities, congruencies and variations in forms of observations. The Model of a databank for the informal sector is outlined and clarified in Chapter Eight. Large volumes of varied data incorporated in the database model were viewed according to planning laws in Zimbabwe in Chapter Nine. Chapter Ten, Synthesis and Significance of Study Findings, consolidates the results attained and their significance in contributing to existing knowledge. Chapter Eleven, provides Conclusions and Recommendations, and then ties the knot by revisiting the research problem and discussing the accomplishment of objectives set ahead of the study.

#### **1.7 Chapter Summary**

This section has set the scene for what follows by introducing the thesis and stating its objectives. The thrust of this study is to advance a prototype geo-database of the informal industrial sector in Zimbabwe for straight forward tax collection, among other reasons. The proposed database provides a profile of spatial, compositional, operational, behavioural, psychographic and demographic data of informal manufacturers in Harare. This is vital because most accessible studies on urban informality are largely non-spatial and non-comprehensive, and those that explain the conduct of informal operators are descriptive and bereft of hard data. It is envisioned that access to authentic, comprehensive, current and spatial data on urban informality will improve the appreciation of the growing informal sector. The ensuing chapter expands on the research problem by reviewing relevant theoretical, conceptual, analytical and empirical issues in literature. The development of the research problem is essential in exposing the research gap that this thesis plans to fill.

#### **CHAPTER TWO**

#### LITERATURE REVIEW

#### 2.1 Introduction and Structure

This chapter seeks to position the current study in existing literature by expanding on the research problem. The issue of urban informality is a paradoxical discourse since it is interpreted differently by different people (Schneider, 2005). The first portion of this chapter shapes different perspectives (theoretical and disciplinary) on urban informality with the view of developing an informed conceptual framework. Since theories are abstract in nature, a section on empirical evidence contextualises the first fragment by providing studies that validate theories under discussion.

Both theoretical and disciplinary perceptions on urban informality acknowledge that informal activities happen in space which is the domain of laws on planning (Bertolini, 2006). The second part in this chapter offers a brief appraisal of the laws on planning highlighting the philosophy that gave rise to the institution of planning standards, regulations, processes and procedures. Specifically, the philosophies of order, health, amenity and safety are discussed.

A fundamental concern of this thesis is to realise the accurate location of informal operators. Spatial statistics is among the tools used to accurately locate and analyse units of analysis in space. The third portion of this section reviews the application of spatial statistics in studying spatial point pattern. It is crucial to note that literature on spatial statistics is inferred to urban informality based on lessons observed from its application across disciplines. Much attention was paid to extraction of variables from different study situations and manipulation of spatial statistics to suit the study objectives. The three key parts of literature review are from different areas of study (urban informality, planning law and spatial statistics) and are not directly linked to each other. As such, literature review settles with a gap analysis and lessons observed to expose what is amiss in most accessible studies.

#### 2.2 Theoretical Perspectives on Urban Informality

Inspired by Monaghan's (2009) assertion that a solution to a challenge is best designed when the theory about its cause is well known. Informal sector theories, cluster theory, the planned behaviour theory and institutional theory form topics of Sections 2.2.1 to 2.2.4.

#### 2.2.1 Informal Sector Theories

The debate on urban informality has a long pedigree, dating some decades back (Hart, 1973; Despres, 1988; Meagher, 2007). Evident in literature is the mounting recognition that there is controversy and general lack of consensus on issues surrounding informality, especially from a theoretical viewpoint (Despres, 1988; Chen, 2012; Ntlhola, 2010). The controversy is firmly rooted in several dichotomies and paradoxes dominating informal sector theories. Metamorphosed over time, so the argument in this sub–section goes, informal sector theories have passed through a sequence of stages. Discussed in forthcoming paragraphs are three hypothetical stages of informal sector theories dubbed as appearance, competition and dominance.

This first appearance of informality in economic debates gained precedence in the 70s (Hart, 1973). Then, the trending belief was that informality is temporary and will fade away with economic advancement since informality is only a reflection of a malfunctioning economy (Hart, 1973; Despres, 1988; Onoshchenko, 2012). This belief is explained well by the Duality School of Thought (DST) which argues that formal and informal sectors are inversely related.

As the formal sector collapses, the informal sector increases in size and as the economy gradually moves from recession to boom, the informal sector fades away. It can be reasoned that as an economy grows, business activities have a tendency to become more formal. The relational set—up of formal and informal sectors is best illustrated by a trade—off relationship summarised in Figure 2.1.



Figure 2.1: Trade-off relationship between formal and informal sectors (Adapted from Onoshchenko, 2012)

As illustrated in Figure 2.1, as the magnitude of the formal sector drops from  $F_1$  to  $F_2$ , the extent of the informal sector increases from  $I_1$  to  $I_2$ , and vice versa. Theoretically, this depicts a negative association between the informal and formal sectors because two sectors are plausibly substitute activities (Ntlhola, 2010). In a like manner with this reactionary stance of the informal sector, but from a different dimension, it has been advanced that the growth in the informal sector is a reactionary passage to the growth with inequity of the formal sector's static and inflexible character (Silverman, 1992).

Some scholars who subscribe to the DST explained the temporariness of the informal sector

using the type of employment (Despres, 1988; La Porta and Shleifer, 2008; Luebker, 2008a). The informal sector has been called a temporary absorber of labour set in motion by rapid urbanisation (Despres, 1988). This suggests that the longevity and stability of the informal sector is theoretically questionable (Despres, 1988, Ntlhola, 2010; Onoshchenko, 2012). In as much as the informal sector is providing jobs, it is posited that these jobs are not decent (Luebker, 2008a). Decent work has been described as an engagement that enables one to consume and save (Luebker, 2008b).

The substitutability of the informal and formal sectors propounded by the DST received heavy criticism, especially from scholars and policy makers who consider the two sectors were mutually related. Growing empirical evidence has shown that instead of fading away as explained by dualism, the current trend shows informality as a growing phenomenon (ILO, 2007; Villamizar–Duarte, 2015). The growth in informality has made the sector complement and in instances, compete with the formal sector.

Contrary to dualism, structuralism hinges on the view that formal and informal sectors co-exist and are mutually related. The conjoined set up of the two sectors is such that they are co-dependent rather than liberated from each other. Conforming to the Structural School of Thought (SST), the dynamics in economic systems make it problematic to label an economy as purely informal or formal, but rather as a multifaceted mix of the two (Inter-American Development Bank (IADB, 2006; Kanbur, 2009; Yiftachel, 2009; Keen and Kanbur, 2015). For instance, numerous informal businesses conduct production relationships with formal sector businesses, providing input, finished goods and services either through direct transactions or via subcontract provisions. The same argument resonated by one scholar explained the vertical and horizontal business linkages between the formal and informal sectors in Zimbabwe (Muponda, 2012).

It is collectively advanced that that the two sectors are complementary, synergic, and exhibit counteracting effects (Lund and Srinivas, 2000; Granstrom, 2009; Bairagya, 2010; Muponda, 2012). One scholar lamented that informal sector's exposure to formal sector's competition intensifies the scope of the informal sector in absolute terms, but the degree of relationship with benefits is dynamic and questionable since the two sectors compete for jobs in some instances (Bairagya, 2010). This dynamic relationship has been conceptualised with suspicion where the informal sector is being used as a convenience, with hidden exploitative attributes mimicking the 'predator-prey' relationship (Payne, 2002; Hussmanns, 2004; Musara, 2015). The formal sector takes advantage of low prices and availability of cheap, desperate labour in the informal sector. The 'cheap labour' perception has been criticized for using the informal sector as a reserve army of labour for the formal sector (IADB, 2006).

Regardless the miniature operations in the informal sector, the informal sector plays a central role in absorbing labour force that could not be employed in the formal sector. Sources concur that over half of the populace in the developing world is employed in the informal sector (ILO, 2007; IMF, 2007; Schneider *et al.* 2010; IMF, 2013). This commendable role of the informal sector has seen a noteworthy number of people migrating to Assam in India in search of employment in informal manufacturing (Majumdar and Borbora, 2012). It is argued that employment describes a scenario where one engages in an economic activity that provides at minimum a single United States of America dollar (US\$1) in any given week (Luebker, 2008a).

Framing the informal sector through the dualism ideology has received mass criticism, especially from a crop of structuralism scholars. Using selected case studies, some scholars

have provided evidence on how the DST has lost taste in explaining urban informality due to passage of time (Lund and Srinivas, 2000; Hussmanns, 2004; Granstrom, 2009; Bairagya, 2010). In similar fashion structuralism superseded dualism, contemporary theoretical literature provides that post–colonial theoretical views have superseded structural views. The contemporary view is that informality is now dominating economic systems in developing countries.

Following continuous increase in size, informality has been considered, in modern years, as a subject of renewed attention with resurgence of attentiveness to areas such as urban management (Varley, 2013). It is noted that informality has become order of the period in developing economies (Villamizar–Duarte, 2015). Post–colonial theorists are pushing for policy recognition of informality as a practical identity of developing countries' cities (Varley, 2013; Miraftab, 2009; Yiftachel, 2009; Villamizar–Duarte, 2015). In as much as authorities work tirelessly to contain the informal sector through eviction and other means, the informal sector hibernates and within a short space of time resurfaces wearing a different or modified face.

Contrary to this background, informal activities are now outweighing formal activities. One scholar has described pathways to the dominance of the informal trade as twofold; invited spaces and conceived spaces (Miraftab, 2009). Invited spaces are used to define channels created and legitimised by governments to cope with socio—economic hardships. For example, in Zimbabwe, this includes the enacting the Indigenisation and Economic Empowerment Act (IEEA) [Chapter 14:33] of 2007. Other channels used by the Government in Zimbabwe include both direct and indirect support given to the informal trade by the Ministry of Small to Medium Scale Enterprises (MSME). Invented spaces are collective and unauthorised actions by the poor

to cushion themselves against the eating socio–economic upheavals. These include working from undesignated sites such as roadsides, backyards and industrial clusters (Mazongonda and Muromo, 2011).

Being a combination of invited and created spaces, dominance of the informal sector brought with it the understanding that informality is an existing reality. Noted in this sub-section is the fact that the first appearance of informality in economic debates was viewed as temporary, that is, informality is transient. Although informality was predicted to disappear due to passage of time, evidence showed otherwise leading to theoretical acceptance that informality competes with the formal sector. Culminating evidence has brought in a new twist which views informality as dominant when compared with formality and this trend is expected to continue into the foreseeable future. Particular informal activities, especially ones inclined to manufacturing, agglomerate in industrial clusters.

#### 2.2.2 Cluster Theory

Clusters define the concentration of competing and complementing firms in a given topographical space (Kuah, 2002). Interdependence of firms in a cluster is explained, theoretically, by the cluster theory. Various sources have collectively described competitive lead of clusters, cluster initiative, cluster location, and geography and trade as the four building chunks of cluster theory (Porter, 1990; 1998; Krugman, 1991; Kuah, 2002; Sölvell, Lindquist, and Ketels, 2003). It should be noted that this study's importance is placed on cluster location (spatiality) and cluster initiative. These two building blocks of cluster theory are important in explaining concentration and collaboration of manufacturers in space, and how manufacturers pursuing their own interests result in benefits to others. Cluster theory explains that growth of a cluster is typified by the coming in of new firms creating linkages with existing firms. It is
explained that successful clusters normally span beyond political and administrative boundaries (Kuah, 2002). It is so because the development of successful clusters attracts and creates linkages with key players outside administrative boundaries (Porter, 1998).

Small businesses are mainly found in small-scale industrial clusters. Assam in India is used as an example to explain the agglomeration of small-scale manufacturing firms (Majumdar and Borbora, 2012). To this effect, Assam has been termed mini India because it attracts huge volumes of manufacturing activity and a lot of populaces migrate to Assam in pursuit of employment. Clustering of small manufacturing firms is widespread in many countries including, but not restricted to India, Peru, Brazil, Mexico, Palestine, Kenya, Nigeria, South Africa, Ghana, Senegal and Mexico (Furuya *et al.* 2006; Sverrisson, 2006; and Muponda, 2012). Particularly, Furuya *et al.* (2006) made a significant attempt to collate data on characterisation, product portfolio, geographical location and growth strides of small manufacturing clusters the world over. An extract of the collation made by this trio is shown Table 2.1.

Country	Region/City	Manufactured goods
India	Turuppur and Ludhiana	Knitwear
Pakistan	Sialkot	Surgical instruments
Brazil	Sinos Valley	Shoes
Peru	Gamarra (Lima)	Clothing
Mexico	Guadalajara	Shoes

Table 2.1: Summary of Small Manufacturing Clusters Across the World (Furuya et al. 2006)

Table 2.1 suggests that small industrial clusters strive on specialization and entrepreneurial networking. The spatiality of clustering has been associated with collective efficiency (Beaudry and Swann, 2001; Sverrisson, 2006). The assumed positive correlation amongst small–scale

manufacturers also widens to consist of sharing of tools, knowledge spill over, employment creation, and local economic development. Positive spill over effects of clustering are not only felt within clusters, but have trickling down spatial effects. The characterisation of small–scale businesses, particularly by way of respect to their clustering, has inherent behavioural traits shared amongst the manufacturers.

## 2.2.3 Theory of Planned Behaviour

To explain and improve on the appreciation of informal operators' psychographics in observation of town planning principles and their anticipated behavioural reactions to the suggested tax measure, this study leans on the Theory of Planned Behaviour (TPB). The TPB is premised on three primary building blocks; behavioural, normative and control beliefs (Ajzen, 1991). These primary building blocks feed into secondary building blocks; attitude, subjective norm and Perceived Behavioural Control (PBC), respectively. All three secondary building blocks inform intention which then influences behaviour. However, PBC can directly influence behaviour in selected cases (Armitage and Conner, 2001). The TPB's summative descriptor is best illustrated diagrammatically as shown in Figure 2.2.

TPB explains that behaviour is a role of people's knowledge, perception and attitude, and is therefore a planned for phenomenon (Ajzen, 1991; Armitage and Conner, 2001). The decision to remit or not to remit tax is a result of informal operators' attitude towards the tax system. Attitude relates to a person's evaluation of given phenomenon. Attitude can either be constructive or negative (Ajzen, 1991). Where the attitude towards a specific behaviour is more positive, individual's intent to perform will be stronger (Armitage and Conner, 2001). Whether constructive or negative, attitude hinges on the behavioural beliefs, that is, the assumed cost or benefit of acting in a particular way. In cases where the assumed benefits outweigh costs, individuals tend to cultivate a positive attitude towards something and vice versa.



Figure 2.2: Theory of Planned Behaviour (Adapted from Armitage and Conner, 2001)

It has been reasoned that people use their knowledge, skill, relations and networks to behave in certain ways (Ajzen and Fishbein, 1980; Ajzen, 1991). As such, it can be presumed that the decision to do or to refrain from doing something is decided by an individual, but is shaped by social, locational, sex and eco-political context where individuals find themselves. Subjective norm has been defined as individual's perception of general social forces to accomplish (or not perform) the behaviour (Armitage and Conner, 2001). The intention to act in a particular way depends on one's perception or knowledge that some significant others will accept or object the intended act. In context of informal operators, general social forces are bound to arise from other operators (since they work in clusters) who will probably motivate the endorsement or censure of a certain behaviour. The fundamental feature of the TPB, which differentiates it from the Theory of Reasoned Action (TRA), is the inclusion of PBC. PBC defines potential limitations on action as perceived by the actor (Ajzen, 1991; Conner and Sparks, 1996; Godin and Kok, 1996). PBC feeds from control beliefs which explain the perceived power of inherent factors to facilitate or hinder performance of behaviour (Ajzen, 1991).

The underlying infrastructure of TPB secondary building blocks (that is, attitude, subjective norm and PBC) are corresponding beliefs expounded in the foregoing paragraph. These basic factors are widely known in psychological circles as the underlying cognitive structure (Ajzen, 1991; Van den Putte, 1991; Godin, 1993; Blue, 1995; Armitage and Conner, 2001). It has been observed that "the comparative importance of subjective norm, attitude and PBC in the forecast of intention is expected to vary across behaviours and situations" (Ajzen, 1991, p. 188). A review of the TPB found a multiple correlation coefficient of subjective norm, attitude and PBC, with intention of 0.71 signifying a very strong affirmative relationship (Ajzen, 1991). The current study wishes to determine how attitude, knowledge and PBC of informal traders vary in context of principles of town planning.

#### 2.2.4 Institutional Theory

The analogue of a game of football is used to liken institutions to game rules and organisations to participating teams (North, 1990). Institutions are human devised constraints meant to facilitate exchange, interaction and networking among people (Johansson, 1988; North, 1990; Helmke and Levitsky, 2003). It is important to observe that institutions can be formal or informal (North, 1990; Helmke and Levitsky, 2003; Tabellini, 2010). It is contended that formal–informal institutional collaboration is corresponding, cooperative, competing, or substitutive in nature to facilitate ease of doing business (Helmke and Levitsky, 2003).

Informal institutions grow spontaneously as people interact. In our daily interaction with others, particularly in business activities, the governing structure is defined by codes of conduct, norms of behaviour, and conventions (North, 1990). These constraints define informal

institutions. On the contrary, formal institutions are constituted in governments' constitutions, allied acts, statutory plans, statutory instruments and by-laws (Helmke and Levitsky, 2003; Tabellini, 2010).

Informal constraints are important in themselves, and not simply as appendages to formal rules (Johansson, 1988; North, 1990). This is for the reason that informal constraints are socially transmitted and are part of cultural heritage (Tabellini, 2010). This dense social network points to the expansion of informal structures with substantial stability. One scholar noted that informal institutions can be seen at all levels of production (Tabellini, 2010). Primary institutions explain relationships that are founded and cemented by family ties, whereas secondary institutions are firmly rooted in friendship and working relations, and tertiary institutions define relationship between governing boards and the public (North, 1990; Lawrence and Shadnam, 2008; Tabellini, 2010).

Because of tertiary, secondary and primary institutions, individuals and organisations are forced to be isomorphic, that is, being similar, but not identical in form and practice (DiMaggio and Powell, 1983). It has been seen that isomorphic processes are threefold; coercive, mimetic and normative (Lawrence and Shadnam, 2008, p. 2290).

Coercive isomorphism obtains from formal or informal stresses exerted on the organization by the government, other organizations, or the environmental cultural expectations. Mimetic isomorphism is associated with uncertainty in goals, technology, or market dynamics, which leads organizational decision-makers to adopt structures and practices that model other leading organizations in their fields. Normative isomorphism results from the standards and cognitive frameworks that are created and controlled by professions and other moral standards-making bodies.

Because of these three processes, informal activities are similar, but not identical. A full understanding of the levels of informal institutions is imperative in making an investigation into numerous invisible threads that bind informal manufacturers together in their day—to—day interface.

### 2.3 Empirical Evidence on Validity of Reviewed Theories

This section makes available the pragmatic validity of theories explained in the previous section since real situations are more complex than they are described in theory. Essentially, it outlines objectives, key discoveries and conclusions reached after using theories described in Section 2.2.

## 2.3.1 Dualistic Conception of an Economy (Despres, 1988)

A comparative study of employment in three Brazilian cities (Manaus, Juiz-de-Fora and Joinville) explored whether formal and informal are better expounded by macro theories related to the dualistic notion of an economy (Despres, 1988). Modernisation, Marxists, Neo-Marxist theories determined the empirical validity of dualistic conception. Study outcomes showed that none of the three cities had evidence of a trade-off association between the formal and informal sectors. Following this finding it was concluded that being employed in the informal sector was a choice, as opposed to being a circumstance caused by a malfunctioning economy (Despres, 1988). Reasons such as self-reliance, independence and flexibility were noted as push factors into the informal trade. Most informal operators prefer to commoditise products of their labour and not to commoditise their labour by being formally employed.

#### 2.3.2 Structural Conception of an Economy (Chakrabarti and Kundu, 2009)

In a paper titled "Formal-informal sectors' conflict: a structuralist framework for India", the

structural formation of the economy was used to appreciate the nature of association between formal and informal trade (Chakrabarti and Kundu, 2009). The duo intended to ascertain whether the two entities complement or strive against each other. To achieve this aim, a structure for the Indian agricultural sector was developed and used to undertake two static comparative analyses. Their outcome indicated that the existence of agricultural expansion as a result of technical support is a pointer both the formal and informal sectors expand, but at different rates with the formal sector on the lead. On the contrary, when there is agricultural expansion feeding from land reform, the informal sector grows at a rate more than proportionate the growth in the formal sector. The duo, therefore, concluded that the expansion strategy matters because it determines which of the two sectors grows at a rate more than proportional to the other. The formal–informal conflict is inevitable since the two sectors depend on the same set of limited resources. As such, the two sectors compete against each other.

# 2.3.3 Post–Colonial Conception of an Economy (Varley, 2013)

A review paper, titled 'Post colonializing informality?' on architectural perspective on urban informality aimed at tracing the direction of the postcolonial critiques (Varley, 2013). The results of the literature survey showed that most accessible studies on urban informality aim to disrupt dualistic conception of informality. Instead of eliminating this dualistic conception, existing literature is exacerbating it. It was therefore concluded that most researchers are not using their personal accounts or reported experiences by residents to report about urban informality. As such, their findings are a little distanced from the truth; they give new life to old conceptions. Some of the images portrayed in recent planning and architectural literature attract interventions that are at odds with the goal of humanising cities. Informality should, therefore, be treated as the identity of developing cities and not compared with Western cities as if they (Western cities) are a benchmark of ideal cities.

#### 2.3.4 Spatiality and Clustering in Space (Kuah, 2002)

The study by Kuah (2002) sought to assess the state of knowledge on cluster theory which was first popularised by Porter (1990). It has been propounded that an improved understanding of clusters edifies the function of interaction and networking in micro–enterprising (Kuah, 2002). Study outcomes revealed that existing knowledge on benefits of clusters can be grouped into three main camps; promotes origination and competitive gain, cluster economies of scale, and linkages. It was concluded that, a cluster is a system of firms within a geographical location weaved together by certain commonalities. This increases the impact and frequency of communications and interactions.

# 2.3.5 Psychographics and Behavioural Intentions of People (Armitage and Conner, 2001)

TPB has received massive support in psychological theoretical literature as a useful tool for foretelling different behaviours and behavioural intents (Van den Putte, 1991; Godin, 1993; Blue, 1995; Conner and Sparks, 1996; Godin and Kok, 1996; Hausenblas, Carron and Mack, 1997). Following this mass support, a quantitative integration and review of 185 independent studies published till end of 1997 were undertaken (Armitage and Conner, 2001). The analytic review of the TPB aimed at overcoming the methodological weaknesses of previous meta–analyses and focused on several questions in current TPB research. It was revealed that "27% and 39% of the discrepancy in behaviour and intent, respectively" are accounted for by the TPB (Armitage and Conner, 2001, p. 471). As such, it is a powerful tool for predicting behaviours and behavioural intentions in different context. Emphasis was pointed towards the fact that the projecting supremacy of the TPB is superior in self–reported than observed behaviour. The duo concluded that the biased norm construct is largely a weak forecaster of

intentions as compared to PBC and attitude.

### 2.3.6 Interaction and Networking of People in Space (Mazongonda, 2016)

The soundness of institutional theory to explain practical realities in informal manufacturing was confirmed in a thesis titled "Dissecting informal manufacturing in Harare: experiences and institutional responses" (Mazongonda, 2016). The main aim of the study was to compile institutional and compositional data shaping informal trade in Harare, Zimbabwe. The study revealed that informal industries are shaped by all three levels of institutions; tertiary, secondary and primary levels. At primary level, it was revealed that new members are incepted into manufacturing by family ties, and at secondary level, manufacturers capitalize on friendship ties to share ideas and tools. And at tertiary level, politics shaped by the governing party at the period of the study, Zimbabwe African National Union Patriotic Front (ZANU–PF), was largely influential in day–to–day interaction of manufacturers. Manufacturers noted that ZANU–PF coerces them to behave in certain ways.

#### 2.4 The Link between Reviewed Theories and the Present Study: An Expose

Foregoing paragraphs of this section discussed theoretical issues surrounding urban informality. It is imperative at this stage to explain how the current study has been shaped by reviewed theories. Therefore, this section is an exposition of the connection between reviewed theories and the present study. Discussed are informal sector theories, cluster theory, institutional theory and the TPB. It must be observed that reviewed theories have shaped the present study in four different ways. They helped in; dissecting the informal sector, explaining issues surrounding spatiality and clustering in space, understanding the intrinsic interaction of manufacturers within clusters, and predicting their behavioural objectives to the anticipated tax measure.

Informal sector theories have improved on the appreciation of the informal sector in relation to its past, present and projected structure. The antagonistic, synergistic and paradoxically complementary association between the motivating and restrictive forces of urban informality and how these have shaped the development of the informal sector has been taken to the fore. The present study has taken heed of the point that informal trade is now dominant when juxtaposed with the formal trade. Moreover, it is projected that the informal sector will overtake the formal sector considering its upward trend. This theoretical projection of the informal trade has been dubbed 'inversion' in this thesis. As such, this study has considered urban informality as a pseudo-permanent activity which needs policy salience.

Informal sector theories have made some indications that informal operators conglomerate in certain places where they form clusters. Cluster theory was used to advance the appreciation of what goes on among and within clusters. The present thesis used the concentration of manufacturers in home industries to depict the progression of successful clusters, violation of principles of town planning and presence of operational orderliness which can be capitalized on and transformed into spatial orderliness.

Within clusters, informal operators naturally interact and network. The nature and extent of interaction of manufacturers in home industries in Harare was mirrored on tertiary, secondary and primary institutions described by the institutional theory. Gazing at informal manufacturing through an institutional theory lens has shaped the analysis of how manufacturers interact among themselves and how they interact with the outside world.

Intra-home industry interaction of manufacturers has been explained as a role of individual manufacturer's psychographics. TPB explained that subsequent intention and behavior in any

given setup feeds from the attitude, knowledge and perception of individuals. Some sections of literature have described the informal industry as labyrinth in nature, violating town principles such as order, health and amenity. This thesis used the TPB to do an inquiry on the nature and strength of the interaction between psychographics of manufacturers and town planning principles. Furthermore, psychographics of manufacturers in light of the proposal to income tax the informal sector was used to forecast their resultant intention and behavioral response. Foretelling such behavioral responses is essential in designing effective tax strategy since the Zimbabwean government intends to collect tax in the informal sector.

Overall, this study has been shaped by a bundle of theories. The totality of reviewed theories helped in predicting study variables, drawing up assumptions, shaping concepts, developing hypotheses and choosing relevant research strategies, methods and tools. Different theoretical perceptions on urban informality are firmly rooted in different professional backgrounds. The next segment expands on professional bias and interpretation of urban informality.

### 2.5 Disciplinary Perspectives on Informality

There are different views on informality given its broadness, diversity and cross-sector visibility (Miraftab, 2009). As stated earlier, it means "different things to dissimilar people" (Schneider, 2005, p. 1). The analogue of the *'blind man and elephant problem'* explains different views on urban informality (Schneider, 2005). Everybody touches the animal, yet only understands the part they touch. The first appearance of informality in national discourses was popularised by economists and later by other professionals (Villamizar–Duarte, 2015). Sections 2.5.1 to 2.5.5 discuss professional bias and interpretation of informality from economic, sociological, business, planning and architectural, and psychological perspectives respectively.

## 2.5.1 The Economic Aspect of Informality

Economists view informality through the view of economic fundamentals such as externalities, nature and value of trade, and tax-contribution (Bairagya, 2010; Majumdar and Borbora, 2012). From a tax-contribution point of view, literature calling for the desire to structure the informal sector for simple tax collection, is vast and expanding fast (Granstrom, 2009; Shah, 2012; GoZ, 2014a; Keen and Kanbur, 2015). There is mounting realisation by economists that the informal sector is tax evasive and uses diverse strategies to do so. The nature of tax evasion has been characterised and classified into five categories described in Box 2.1 (Keen and Kanbur, 2015).

#### Box 2.1: Forms of Tax Evasion (Keen and Kanbur, 2015)

- The smallest firms, declare openly and remit no tax because their maximum sales are under the tax threshold;
- Adjusters are huge enough to generate maximum sales beyond the threshold but choose to operate just under the tax threshold to avoid tax;
- **Ghosts**, deceptively proclaim below the tax line or not declare at all;
- Cheats, produce over the threshold and declare certain, but not all, of their sales; and
- Large firms that declare honestly and pay the full amount of tax.

The classification in Box 2.1 was used to substantiate the assertion that the informal industry is dodging paying tax. Where the informal trade is large, relevant authorities find it difficult to collect revenue. This argument resonates well with the conclusion that the Zambian Government is finding it difficult to collect corporate tax from the informal sector though it pays some municipal fees and Value Added Tax (VAT) (Shah 2012). It was also observed that low revenue efficiency in Greece is partly attributed to the vast informal economy (IMF, 2013 cited in Kanbur and Keen, 2015).

Accessible studies on informality by economists used econometric models for analysis and

inference (Sookram, Watson and Schneider, 2006; Chakrabarti and Kundu, 2009; Bairagya, 2010; Majumdar and Borbora, 2012). Amiss and warped in these accessible studies is the spatial component. One duo of scholars emphasised the need for spatial data by noting that economic forces breed interdependence among entities and data from these entities is generated at certain places (Pace and LeSage, 2010). Since the linkage of entities is more geographically concentrated, it seems sensible to scrutinise data using tools that can account for spatial dependence. It has been reasoned that spatial econometric models can quantify how changes in explanatory variables directly impact regions, as well as the associated externalities (Pace and LeSage, 2010).

## 2.5.2 The Sociological Aspect of Informality

Long-running theme is sociology revolves around the welfare of people living and working together (Despres, 1988; Sparks and Barnett, 2010; ILO, 2013). Nitty-gritties such as nature of employment, working conditions and social protection are on the fore of analytical literature and policy discourse on informality (Despres, 1988; ILO, 2007; 2013; Luebker, 2008a; 2008b; Sparks and Barnett, 2010). While issues surrounding informal employment are well documented, understanding of their spatial setting is relatively neglected in literature. Understanding informal engagement in context of its spatial setting sensibly exposes locational driving and restrictive forces.

# 2.5.3 The Business Aspect of Informality

Registration of businesses differs between and within countries. In Zimbabwe, registering a business is three—fold (Mazongonda, 2015). Firstly, an organisation must get clearance from the local authority to start operating from a designated site. If the local authority does not consent, such an organisation is viewed as informal. Evidence from developing countries such

as Zambia, Trinidad and Tobago, Senegal, Jamaica, and India has indicated that a substantial percentage of informal entities are not registered with planning authorities (IADB, 2006; Sookram *et al.* 2006; Granstrom, 2009; Shah, 2012). Consequently, national governments are losing significant revenue because a substantial number of players in informal enterprise do not pay council licenses (Shah, 2012).

Secondly, it is stated that businesses can be seen and analysed through the eyes of their incorporation (Mazongonda, 2015). A significant percentage of organisations in the informal trade operate as sole traders and partnerships, and a paltry number as private limited companies (Mazongonda, 2015). Customers and informal operators prefer sole trader and partnership firms as they have more flexibility (Muponda, 2012; Uzhenyu, 2015). Their operating hours are flexible, they can easily bend to the requirements of customers and they give a personalised touch (Despres, 1988; Muponda, 2012; Mazongonda and Chirisa, 2017).

Thirdly, after successfully registering with the registrar of companies, an entity must register with the revenue authority to remit tax returns quarterly (Mazongonda, 2015). Literature has indicated that informal industries dodges paying tax using an array of strategies discussed in Section 2.5.1. The common strand when registering a business with the three authorities outlined immediately above is having a well spelt out place of operation. This brings the spatial component into play.

## 2.5.4 The Planning and Architectural Aspect of Informality

In recent years, urban informality is a wave of renewed attention, with renaissance of academic interest in informal housing, an area emphasised by architects and urbanites (Varley, 2013). Since informal activities happen in space, this brings spatial planning into play. Spatial

planning has been described as the two-way relationship between spatial structures and socio-economic processes which aims at facilitating and conditioning socio-economic processes by way of spatial structures (Bertolini, 2006). This is primarily achieved through town planning legislation. In Zimbabwe, this includes statutory plans, planning requirements and the Regional, Town and Country Planning Act (RTCPA) [Chapter 29:12].

The preamble of the RTCPA states that planning aims to promote "health, order, safety, convenience, amenity, and general welfare, as well as efficiency and economy in the process of growth and the enhancement of communications". Available studies on urban informality through the eyes of scheduling and architecture have explained how the informal sector violates the goals of planning (Chirisa, 2007; 2009b; Ademola, 2012; Dube and Chirisa, 2012; Uzhenyu, 2015). Whether informal operators' psychographics (their attitude, knowledge and perception) are independent of town principles is yet to be scientifically tested. What has been established with substantial accuracy is that informal operators are clustered in home industries and subject to enforcement because they violate town planning goals (Chirisa, 2007; Mazongonda and Chirisa, 2017; 2018).

The study on enforcement of planning regulations in Harare revealed the geographical distribution of illegal industrial activities (Mazongonda and Muromo, 2011). Empirical findings of this research highlighted that backyard and home industrial activities in Central, Eastern and Western districts of Harare account for 11%, 42% and 47% of enforcement orders served in Harare correspondingly. Welding, carpentry, tailoring, shoe repairing and motor mechanics were noted as the main examples of industrial undertakings being done in home industries. Interpreting these findings, it is conclusive to state that backyard and home industrial activities are largely pronounced in the Western district followed by Eastern and Central

districts in that order. The term 'home industry' is used to define the concentration of firms that undertake industrial activities in residential areas (Mazongonda and Muromo, 2011). Part one of the Statutory Instrument 216 of 1994 states that home industries can house service, warehousing and general industries, and storage and special industries.

Recently, one scholar studied the development of latent entrepreneurship in home industries across Zimbabwe (Muponda, 2012). In Harare, the Complex and Gazaland in the Western district and Siyaso in the Central district were identified as home industries that attract huge volumes of activity (Muponda, 2012). The concentration of informal traders has been met with mixed reactions. For example, the spatiality of clustering has been associated with ease of management and agglomeration of economies of scale (Muponda, 2012; Mazongonda and Chirisa, 2018). On the contrary, one scholar discouraged over–concentration of informal activities in already built–up areas citing the fact that in as much both innovation and pollution have global impacts, these often result in more geographically concentrated impacts (Ademola, 2012). What needs determination, therefore, is the level of occurrence, abundance, or incidence of informal manufacturing per unit area, and the spatial dependence of manufacturers.

# 2.5.5 The Psychological Aspect of Informality

Psychology aims to understand what induces, restricts and exacerbates certain patterns of behaviour in individuals. Urban informality has some trends of behaviour that have been noted over time and described by many scholars (Chirisa, 2007; Shabaneh, 2008; Yiftachel, 2009; Shah, 2012; Varley, 2013; Mazongonda and Chirisa, 2017). Dominating descriptions on trends of behaviour portray the informal sector as shy, disorderly, messy and chaotic. When the heavy hand of planning is visible and more active, informal trade hibernates and resurfaces at a later stage. For example, in Zimbabwe, a harsh clean–up campaign dubbed Operation

Murambatsvina (OM) of 2005 dehumanised people by destroying their sources of livelihood, but the informal industry bounced back after this major clean—up campaign (Tibaijuka, 2005; William, 2006; Gumbo and Geyer, 2011). This type of conduct is succinctly described as resilience, resistance and stubborn informality (Chirisa, 2007; Varley, 2013; Yiftachel 2009).

The resistive behaviour of informal operators is partly explained by general lack of economic opportunities (Kamete, 2010; Jerie, 2013). Some operators engage themselves in informal activities, not from desire, but necessity, and informality presents an alternative outlet for the jobless. A follow—up research on informal trade in Harare after OM revealed that "the engagement by households in informal economies is not only a headache to local authorities in the developing countries but also heartache to the households themselves" (Chirisa, 2009a, p. 257). Informal operators, from an ethical viewpoint, have operated against their desires. It is observed that the entire urban Harare is rather plagued by informal traders who are acting in conflict to their life goals (Chirisa, 2007; 2009a). But the strength of informal operations is yet to be accurately established and mapped to well inform policy.

The authorities have gotten to a point of embracing urban informality as a living reality (GoZ, 2014a). To this effect, some scholars have advocated for nurturing the development of small-firm clusters (Muponda, 2012; Mazongonda and Chirisa, 2017; 2018). This makes it easy to tax and foster effective management systems (GoZ, 2014a). However, informal sector taxation, being a new phenomenon, will probably be met with mixed reactions, misconceptions and misunderstandings. As such, it is vital to determine the likely behavioural reactions to the suggested tax measure ahead of time. It is essential since behaviour is a planned for action as described by the TPB (Ajzen and Fishbein, 1980; Ajzen 1991).

### 2.6 Trending Concepts in Urban Informality

Considering diverse theoretical and disciplinary perspectives, literature on informality is vast and expanding fast in different directions (Kanbur, 2009). It has been claimed that informality "is a term that has the dubious difference of combining maximum policy essence and political salience with minimum theoretical clarity and coherence in the analytical literature" (Kanbur, 2009, p. 2). It is sensible to review the trending concepts in urban informality. Section 2.6.1, 2.6.2 and 2.6.3 discuss the main tenets of the 'Idiom of Urbanisation' and 'Gray Spaces' concepts, and themes emanating from trending concepts, respectively.

#### 2.6.1 Idiom of Urbanisation (Roy, 2009)

In explaining this concept, a metaphorical style was used to describe two scenes in Indian urbanisation. The key feature of this idiom has been identified as informality, and it has been argued that there are two ways in which this idiom has been actualised (Roy, 2009, pp 80-81).

First, informality is inscribed in the ever-shifting relationship between what is legal and illegal, legitimate and illegitimate, authorised and unauthorised. This relationship is both arbitrary and fickle and yet is the site of considerable state power and violence...Second, while it has been often assumed that the modern state governs its subjects and conducts planning though technologies of visibility, counting, mapping, and enumerating, in previous work I argue that regimes of urban governance also operate through an 'unmapping' of cities.

Evidence from Indian cities revealed that informality is not synonymous with poverty, and presents itself in a deregulated fashion rather than unfettered one. Informal subdivisions of land in peri–urban settlements of many developing cities are a mere expression of power by a few powerful individuals. Some informal activities are labelled illegal while some are regularised. It has, therefore, been reasoned that deregulation breeds informality through deliberate privatisation of growth control with the view of accumulation of wealth, misallocating resources and retains electoral loyalty from people exercising informality. Moreover, use of modern technologies such as use of geo-spatial intelligence to manage settlements has been deliberately withdrawn to easily tamper around with city and property boundaries. Likewise, the exact size of informality remains unknown to many, and the amount of players in informal enterprising remains known to vote seeking politicians. The crisis in Indian cities is not a mirror of failure of planning, but an idiom of urbanisation "through systems of deregulation, unmapping and exceptionalism" (Roy, 2009, p. 86).

# 2.6.2 Gray Spaces (Yiftachel, 2009)

A situational study of informal housing in Beer Sheva explains the concept dubbed 'gray spaces' (Yiftachel, 2009). Two instrumental cases of residents partially incorporated in urban community and economy of Beer Sheva, but excluded from membership in city polity expanded on the concept. In one case, residents were evicted several times, but insisted on redeveloping demolished structures for different reasons. In the first case, one resident spelt out that they cannot leave Beer Sheva for more developed urban communities with the view of defending their traditional land. In the other case, one resident indicated that staying in Beer Sheva enables them to save and send money home because they escape urban taxation in its various forms. Partially incorporated settlements, residents and their activities denotes 'gray spaces' "positioned between the 'whiteness' of legality/approval/safety, and the 'blackness' of eviction/destruction/death" (Yiftachel, 2009, p. 88). Upon revisiting planning theory, it was argued that planning, or lack of it, exacerbates, demolishes, criminalises and evicts 'gray spaces' (Yiftachel, 2009). It can be assumed that 'gray spaces' are neither formal nor informal since they lie between two extreme ends, and planning is responsible for that.

### 2.6.3 Themes Emanating from Trending Concepts in Urban Informality

Trending concepts in urban informality collectively demystify perceived wisdom that informality is synonymous with poverty; represents a wide array of unregulated activities, enterprises and settlements; is initiated from below; and reflects planning failure. It has been discussed that informality is associated with wealth and power where it is privatised by a few elite with the view of realising their political gains. Informal operators can easily be bent to align with the requirements of the powerful elite because their activities will be partially regulated. Informal activities are not necessarily unregulated, but are deliberately deregulated through withdrawal of regulatory power. As such, informality is driven from above (Roy, 2009; Yiftachel, 2009). Informality is seen as a special mode of regulation in which power is used to accumulate wealth, retain political loyalty of informal operators and control urban spaces. Therefore, informality is not a mirror of failure of planning, or deindustrialisation, but a calculated move where activities, enterprises and settlements are deliberately unmapped.

#### 2.7 Conceptualising Informality

There is a convergence of views in trending concepts in urban informality. The converging views feed from a background inscribed by diverse theoretical and disciplinary perspectives on urban informality. There is, therefore, a definition quagmire and a plethora of alternative views as one attempts to break the puzzle of what defines informality. Informality varies in intensity and dimension in parts such as land, housing, immigration and economy. Owing to this interdisciplinary nature of informality, there are several definitions which are often contradictory and somewhat clouded with confusion. It has been posited that defining informal work presents many challenges and perhaps the best means to define it is to identify its characteristics (Schneider, 2005).

Extending the proposition of using characteristics in defining informality, some sources advanced that informality is best conceptualised when viewed using the analogue of a continuum scale with two extreme ends of compliance and non–compliance (IADB, 2006; Yiftachel, 2009). In between these extremes are various forms and degrees of compliance ranging from registration requirements to temporariness of operation, and extends to include working conditions and level of productivity. Figure 2.3 diagrammatically shows the continuum scale illustration of informality.



Figure 2.3: Continuum Scale Defining Informality (IADB, 2006; Yiftachel, 2009)

Use of generic labels informal/formal in defining has been discouraged (Kanbur, 2009). Instead, proposition made by Kanbur (2009, p. 1) is that:

Informality and formality should be seen in direct relation to economic activity in the presence of specified regulation(s). Relative to the regulation(s), four conceptual categories that can help frame the analysis are: (A) regulation applicable and compliant, (B) regulation applicable and non-compliant, (C) regulation non-applicable after adjustment of activity, and (D) regulation non-applicable to the activity.

Interpreting this four-factor frame of analysis, only categories A and D merit the label formal, and categories B and C can be regarded as informal with different degrees of complexity (Kanbur, 2009). This conceptualisation can be likened to the tax evasive strategies explained in Box 2.1, Section 2.5.1 (Keen and Kanbur, 2015). Perhaps, juxtaposing the four-factor frame of analysis with tax evasive strategies sheds light on defining informality. Table 2.2 provides a comparative assessment of the two conceptualisations.

Table 2.2: Comparative Assessment of the	Two Conceptualisations	(Kanbur, 2009; Keen at	nd
Kanbur, 2015)			

Four-Factor Frame of	Tax Evasive Strategies (Keen	Comment
Analysis (Kanbur, 2009: 5)	and Kanbur, 2015)	
A: Stay within the range of	Large firms that declare	Firms in this category merit the label
the regulation and comply.	truthfully and pay the full amount	formal since they fully comply with
	of tax.	regulations.
<b>B:</b> Stay within the range of	Ghosts, falsely declare below the	Non-compliance, through cheating or
the regulation but not	tax threshold or not declare at all;	acting as ghosts, qualify firms in this
comply.		category to be informal. It is critical to
	Cheats, which produce above the	note that such tendencies are illegal.
	threshold and declare some, but	note that such tendenetes are megan
	not all, of their sales.	
C: Adjust activity to move	Adjusters are large enough to	Deliberate adjustment by firms to operate
out of the ambit of the	generate maximum sales above	below the tax threshold merit the label
regulation.	the threshold but choose to operate	informal.
	just below the tax threshold to	
	avoid tax.	
D: Outside the ambit of the	The smallest firms, declare	If the aim is to tax the informal sector,
regulation in the first	truthfully and pay no tax because	small firms need nurturing so that they
place, so no need to adjust.	their maximum sales are below the	grow beyond the tax threshold and
	tax threshold	subsequently contribute to fiscus (see
		Muponda 2012)
		Muponda, 2012)

Among a wide spectrum of concepts surrounding informality is informal economy; informal sector; informal enterprise; and micro–enterprise. Informal economy/sector/enterprise defines any economic activity which do not fully adhere to specified regulations (Kanbur, 2009; Keen and Kanbur, 2015). The variances between the words economy, sector and enterprise is on

contextual application across disciplines. Economists mainly use the words economy and sector to explain an economic grouping, whereas business analysts mainly use the word enterprise which can be compared to entrepreneurship when one considers entrepreneurship to mean simply the start—up of new 'small' firms (Muponda, 2012). It has been further asserted that business activity includes innovative actions by firms or individuals, such as the formation of new products or servicing of existing products (Muponda, 2012). Informal enterprises can either be micro or macro, since the emphasis not on size, but on regulation. It can be assumed that micro–enterprises are small firms within or outside the informal sector.

This study centres on the informal enterprise, regardless if it is unregulated or deregulated. Informality is visible at all stages of production; tertiary, secondary and primary (Dube and Chirisa, 2012; Majumdar and Borbora, 2012; Shah, 2012). An example of Assam in India was used to give evidence on the development dynamics of informal manufacturing (Majumdar and Borbora, 2012). Part of the evidence revealed that Assam has been termed 'mini India' because a number of people migrate to this region in pursuit of employment. Apart from creating employment, the contribution to national income by informal manufacturing, both in volume and value of trade, is quite significant (Pedersern, Sverrisson, and Van Dijk, 2004; Luebker, 2008a; 2008b; Majumdar and Borbora, 2012).

Culminating evidence from theories reviewed, experiential evidence on validity of reviewed theories, disciplinary perspectives and trending concepts in urban informality has revealed that informal activities happen in space. As argued in Section 2.5.4, space is the domain of spatial planning which aims to condition and facilitate socio–economic processes (Bertolini, 2006). This facilitation, through planning law, is essential since players with diverse interest compete to use land and land–embedded resources.

### 2.8 Brief Review of Planning Law

This section outlines the planning law discipline. It is really an informative breakdown of what planning law is, why it is needed in context of urban informality and what inspired its being.

### 2.8.1 The Coming in of Planning Law

There is politics of space because space is political and people can do anything within their means to control land and land embedded resources (Elden, 2007; Roy, 2009; Yiftachel, 2009). All activities happen in space regardless the form of the activity. Philosophically, activities in space must not be permitted to take course haphazardly, but should be systemised. Thus, the ensuing questions stand: what informs the orientation of activities in space? What is the justification behind systematically arranging activities in space? How best can activities that mushroom in space be controlled? These and such like questions are well answered by the planning ideology.

Planning law can easily be appreciated when the two words are considered separately (Van Wyk, 1999). Planning, on one end, is centred with people and regulation of the situation since all activities happen in the environment (space). One planning theorist argued that planning is the process of assigning resources to different activities or uses, defining development objectives and strategies, and setting principles and devices underpinning development (Faludi, 1987). Law, on the other, is concerned with people and regulation of the society. The discipline seeks to bring about fairness, justice, certainty and uniformity in every society. Since both disciplines, planning and law, are concerned with people, the link between the two brings about planning law. Likewise, planning law has been defined as that area of law which provides for the creation, implementation and management of sustainable planning processes to regulate land use with the view of ensuring health, safety and well-being of society as whole and

upkeep of the environment (Van Wyk, 1999). It must be observed that planning law is not only concerned about regulating the physical aspect of the environment, but also the socio–economic aspects.

Planning law aims to balance two diverse interests; private and civic interests (McAuslan, 1980). On one end, the ideology of private interests seeks to advance, safeguard and realize the rights of property proprietors who are, mostly driven by the profit motive. On the other, the ideology of public interests seeks to safeguard, respect and fulfil rights of the public. The presence of diverse interest renders struggles of interests inevitable. Since planning law sets planning parameters, it is used to resolve conflicts amongst stakeholders (private, public and the government). The fundamental concern of the law of planning is to provide technical foundation for creating, organising, coordinating and controlling developments. It is also critical to note that planning law helps in setting parameters for taxation through zoning (Wekwete, 1989). The primary concern of this study is to compile comprehensive information that is used by relevant authorities to collect tax from the informal sector. The broadness of planning law is theoretically complex and practically controversial, but is justified by its founding principles of spatial planning (Chaeruka, 2002).

# 2.8.2 Historical Justification of Town Planning Goals

Tracing competition for space through historical lens perhaps explains the planning thought and practice. Planning principles can be traced back to the ancient Greek and Roman cities where the structure of settlements was designed to promote order, health, security and safety. Some decades back, one scholar argued that settlement layout and pattern is a way of life because it is shaped by politics of the day (Curl, 1970). The same argument recently resonated in trending concepts in urban informality (Roy, 2009; Yiftachel, 2009). Furthermore, it has been observed that around AD64 the Romans set planning regulations aimed at promoting the living conditions and welfare of people with the view of minimising dangers of fire and collapse of buildings (Mumford, 1938). By then, the maximum height of buildings was set at approximately 21 meters.

Another notable milestone in the account of town planning is the industrial upheaval in Britain of the late nineteenth era. Through this era, there was growth in manufacturing activities which led to over concentration of industries and settlements adjacent to industrial sites. Serious health problems presented themselves and awakened planning authorities to consider separating industrial and residential land uses (McAuslan, 1980; Heap, 1996). Zoning laws were enacted to promote order and public health. Back then, it was argued that town laws of planning were pushed forward to ease problems of informal settlements that organically mushroomed around industries (Harverfield, 1913 quoted by Chaeruka, 2002). The next chapter offers a normative review of the provisions of planning law on informal manufacturing. This is crucial in setting the tone for a reasonable assessment of the normative issues and practical realities.

#### 2.8.3 Informal Manufacturing and Planning Law: A Normative Perspective

This subsection outlines the necessities of planning law in Zimbabwe regarding the informal trade sector. The RTCPA [Chapter 29:12] provides a general plan of the procedure and management of developments. The pillars of the RTCPA [Chapter 29:12] have a huge bearing on informal manufacturing include Part IV on principal and local plans, Part V on development control and Part VI on subdivisions and consolidations. Preceding sections of this chapter have dissected the informal trade sector with the view of improving on the appreciation of the complex subjected. Particularly, Section 2.5.4 brought to light how clustering of informal

activities in space have wider concentrated geographical impacts. In such cases, the Local Planning Authority (LPA) is mandated, under Section 13(1)(b) of the RTCPA [Chapter 29:12], to undertake a fresh research of the development area or neighbouring areas investigating concerns such as violation of existing master or local plans. Such studies will enable a LPA to plan from an informed viewpoint after ascertaining the extent of violation.

Part III of the RTCPA [Chapter 29:12] gives LPAs power to operationalize and alter existing principal and local plans. Where a violation of some sort exists, the LPA can issue a warning, or issue a prohibition order according to Section 34, or enforcement order in line with Section 32. If the affected person is aggrieved with the resolution of the LPA, they can petition the Administrative Court in line with Section 38 of the RTCPA [Chapter 29:12]. If the affected part does not act as specified in prohibition or enforcement orders, and or does not petition against the specifications of these orders, the LPA can seek a court order to demolish or stop activities contravening the operative master or local plan.

The cluster theory, Section 2.2.2, explained the force and interaction of firms in a given geographic area. In context of informality, this concentration can, at times, be against the requirements of the law as described in Sections 2.5.4 and 2.5.5. The RTCPA [Chapter 29:12], through its Part VI, clearly outlines the conditions under which land parcelling should take place. Holders of land parcels cannot just parcel out or consolidate pieces of land short of the permission of the LPA. Any subdivision or merging of land carried out devoid of a permit from the LPA is considered as unlawful and is due for enforcement. If an application of subdivision or merging of property is turned down by the LPA, the aggrieved part can petition against the judgment of the LPA to the Administrative Court in line with Section 44 of the RTCPA [Chapter 29:12].

Requirements of the RTCPA [Chapter 29:12] are expanded in SIs. The SI 216 of 1994 importantly expands on use groups in manufacturing. It must be highlighted that SI 216 of 1994 only provide for 'use groups' 4 (service industry), 5 (warehousing and general industrial use) and 6 (storage and special industrial use) where such activities are may possibly not injure amenity of an area due to noise pollution, fumes, smoke, waste water or dust. The study areas (the Complex, Gazaland and Siyaso) are all in residential areas as stated in passing is Section 1.5 and expanded in detail Section 3.5.2. As such, issues surrounding manufacturing in these spaces are governed by SI 216 of 1994. Finer information on the implementation of development plans are detailed in the Design Manual of 2004. Of importance, any development next to a river should be at a distance of at least 30 metres from the river (GoZ, 2004). This standard is essential since two of the research sites, Siyaso and the Complex, are next to a water course and river respectively.

As stressed in Section 2.5.4, in Zimbabwe, development plans are designed with the view of fulfilling the chief object of the RTCPA [Chapter 29:12]. The Act stresses that standards contribute towards promoting safety, order, aesthetics, health, amenity, welfare, convenience, efficiency and public interests. Parts IV, V and VI of the act provide for master and local planning, development control, and subdivisions and consolidations, respectively. These parts set how issues on such matters should be exercised in the country. Despite the clarity of the framework for planning in managing activities that violate the requirements of planning law, the informal trade sector appears to be 'free riding' than anything, making it difficult to collect tax (Chirisa, 2007; Dube and Chirisa, 2012). It is envisioned that if the accurate location of informal trade operators is established, parameters for collecting tax from this informal trade sector can be set from an informed viewpoint. As such, this research used a spatial statistical strategy to accurately locate and analyse informal industrial activities in Harare. The next part

gives the fundamentals of spatial statistics.

#### **2.9 Fundamentals of Spatial Statistics**

Statistics, is described as "the collection, collation, presentation, study and interpretation of (mainly quantitative) data" (Mazongonda and Mandebvu, 2014, p. 1). Precisely, application of statistical procedures in the fields of mining engineering, agriculture, and forestry, and flare—up of keenness in space and space—time problems saw the emergence of spatial statistics (Gelfand *et al.* 2010). Spatial statistics is described as a model—driven field whose intent is to analyse space—related problems (Diggle, 2010). Its instrumental feature is its concern with the identification of units of investigation that are stochastic in nature. Earth surveillance and Geographical Information System (GIS) enable the gathering of huge volumes of spatial and spatio—temporal datasets across many fields. As such, spatial statistics, in many instances, work together with GIS. It has been claimed that spatial statistics can used by researchers seeking an easy of entry to particular topics (Gelfand *et al.* 2010).

#### 2.9.1 Brief Historical Introduction of Spatial Statistics

This historical introduction is essential in setting the tone for what follows. Spatial statistics, as a sub-branch of the statistics discipline, and is continuously evolving. It has been proclaimed that spatial statistics was first applied in the examination of continuous spatial variation in the fields of physics and astronomy in the 1850s (Diggle, 2010). These applications used Poisson processes, though not bearing that name, to decide the regular number of occurrence per unit area.

Modeling continuous spatial variation was later applied in the fields of agriculture, mining (geostatistics) and forestry (Diggle, 2010). Precisely, work on the expansion of methods for

analysing data from agriculture trials gave an implicit application of continued spatial variation (Fisher, 1966). Geostatistical methods were first used in South Africa to forecast the availability of minerals over a defined spatial region between 1955 and 1965 (Matheron, 1963). In the arena of forestry, it has been noted that Matern developed a parametric family of correlation functions to represent the position of trees in a densely populated forest in the 60s (Diggle, 2010).

The development of methods for studying continued spatial variation was followed by two methodological breakthroughs, that is, discrete spatial variation and spatial point process. This breakthrough gave rise to second and third branches of spatial statistics. It is further noted that "Besag (1974) suggested models and related methods of inference for analysing spatially discrete, or "lattice," data, while Ripley (1977) set out a methodical approach for analysing spatial point process data" (Diggle, 2010, p. 9). This thesis focuses on the third branch of spatial statistics, spatial point processes.

The fundamental feature of spatial point pattern is its concern in handling measures of analysis whose realisation consists of a finite or countable infinite set of points in the plane (Diggle, 2010). Two classical examples of situations that can be examined using spatial point pattern have been given (Diggle, 2010). First, in studying the locations of petty crimes that occurred in each neighbourhood per given period, key research questions would include the incidence of crimes, spatial variation in intensity, and evidence for concentration of crimes. Second, defects in the crystal surface of a silicon wafer can be inspected and their locations recorded. In such a scenario, a study can aim to determine the occurrence of defects, spatial trends in intensity, and spacing between defects. Interpreting these examples, spatial point pattern is worried about the intensity of an observation, spacing and spatial dependents between observed

points, the overall design of observed realities, and whether the perceived pattern is explained by existence of covariates.

### 2.9.2 Data Needs for Spatial Point Pattern

Spatial point processes require data that satisfy four essential needs (Baddeley, 2010). These four pre-requisites set the basis of the sampling design in spatial point pattern analysis. Firstly, the measures of analysis should be observed inside a clearly defined sampling window where the boundaries known. Where they are unknown, they must be accurately estimated using defensible methods (Ripley and Rosson, 1977; Moore, 1984). Secondly, actual position of points under study must be accurately established or estimated with substantial accuracy. This, therefore, calls for the implementation data capturing methods that give the accurate spatial location of individual points. Thirdly, use of accurate data capturing methods is of highest significance since one point should be linked with a spatial location, that is, no two points should lie on one location. Lastly, all points in the sampling window must be surveyed. Reduced to sampling language, a census as opposed to a sample survey must be implemented to enable accurate mapping of a phenomenon in question.

A qualifying example of disease mapping was exploited to suggest that observing the four conditions outlined in the foregoing paragraph, there exist two more additive conditions (Waller and Carlin, 2010). The sampling window must be small enough to allow the production of maps that present a good geographical resolution. On the other, population in individual windows must be huge enough to maintain statistical precision, that is, low variance. Satisfying the two additive conditions is not a simple task. It is claimed that it is hard to have a small geographical area with a very large, satisfying population (Waller and Carlin 2010). There are further details on small expanse estimate (Ghosh and Rao, 1994; Ghosh *et al.* 1998; Rao, 2003).

The goals of analysing spatial point pattern have been categorised into three; intensity of observed measures of analysis, interaction between points, and conjoint focus on intensity and contact (Baddeley, 2010). On one hand, intensity aims to determine the "rate of occurrence, abundance, or incidence of the events recorded in the point pattern" (Baddeley, 2010, p. 342). This is essential in quantifying the number of measures of analysis per unit area, and subsequently maps them. In the current study, the goal is to enable relevant authorities to collect tax from the informal trade sector, so intensity would provide revenue authorities with number of operators per unit area, and whether this number constant or spatially varying. On the other, inter—point interaction aims to compile data related to interdependence of points in space and the assumed positive correlation between them. Perhaps, reviewing how the spatial point data needs were satisfied in other studies clarifies the application of spatial point pattern.

# 2.9.3 Application of Spatial Point Pattern

This section presents one instrumental case that used the spatial point pattern to analyse measures of analysis. In that case, a spatial statistical approach was exploited to identify and map deprived areas where access to grocery foods is restricted due to impoverishment in the sampling window (Lee and Lim, 2009). This was accomplished by creating census block clusters in the city of Buffalo, New York. In each census block group, standardised local statistics was mapped. It has been espoused that mapping only provides a rough visual impression, without providing useful understanding into the actual needs of the study population (Lee and Lim, 2009). In this thesis, mapping will be complemented by 'hard' proof of the spatial variation of manufacturers' anticipated behavioural reaction to the suggested tax measure.

### 2.10 Gap Analysis

The preceding literature survey has indicated that several sources have called for compilation of informal sector database ease of its management and accountability (Shabaneh, 2008; Sparks and Barnet, 2010; Shah, 2012; GoZ, 2014a). In Zimbabwe, specific emphasis has been pointed on compiling comprehensive data that will enable ease of tax collection (GoZ 2014a). Up to date, a few researches have taken heed to this call (Chirisa, 2007; 2009b; 2013a; Muponda, 2012; Dube and Chirisa, 2012). Such scholarly attempts are appreciated. For example, they provide an entry to the appreciation of urban informality because they explain the scope, variance; growth strides, behaviour and nurturing needed to harness maximum value from the informal trade sector. Scholarly contributions of that nature are essential ingredients in data compilation. However, existing attempts are suspect on three counts of comprehensiveness, reliability and accuracy. This study extends previous attempts by providing a comprehensive, spatial statistical analysis of informal manufacturing sector in Harare, Zimbabwe.

First, it can be determined to some extent, numerous accessible studies on urban informality did not consider compiling comprehensive data as called for in literature. Past efforts are fragmented in accordance with theoretical and disciplinary perceptions. Prominent disciplinary perspectives include, but not limited to economic, sociological, business, planning and architectural, and psychological standpoints. This mono–disciplinary strategy has been compared to a blind man and elephant problem (Schneider, 2005). Everybody touches the elephant, yet only the part they would have touched. To have a full understanding of this subject and well inform policy, the compilation of informal trade sector national database has been asked for (Sparks and Barnet, 2010; GoZ, 2014a). This thesis aims to knit and weave together comprehensive data from different fronts that will lay bedrock for simple of tax collection.

Second, most accessible studies are largely descriptive and limited in sampling. In as much as these attempts provide invaluable data profile based on descriptive statistics, they lack associative and inferential analysis which is needed for setting devices underpinning tax strategy development. For example, the behaviour of informal trade operators has been described on several counts in literature (Sookram *et al.* 2006; Chirisa, 2007; Yiftachel, 2009; Gumbo and Geyer, 2011; Ademola, 2012; Varley, 2013). What can edify literature are accurate, statistical predictions of their behaviour to the suggested tax measure. Sound tax strategies are dependent on hard data that can well inform revenue authorities. In addition, no existing attempts used census block groups to exhaustively analyse all units of analysis. The current study analyses all informal industrial activities in the sampling windows under study, thereby satisfying the rations of sampling design for spatial statistics. Use of census block groups guarantees the generation of statistically precise results with low variance. Such catch–all results that are credible and reliable can be generalised and replicated.

Last, the compilation of comprehensive geo-spatial data of the informal trade sector in Zimbabwe becomes imperative to the ease of tax collection because it provides accurate and credible data profile. It is envisaged that access to up-to-date, complete, authentic, and reliable spatial and relational data on informality is vital for policy formulation. However, it can be established that most accessible scholarly endeavours addressed the fundamental problem of analysing case-based data on urban informality for improved understanding, but they were largely non-spatial (Chirisa, 2007; 2009a; 2009b; 2013; Dube and Chirisa, 2012; Muponda, 2012; Jerie, 2013; Uzhenyu, 2015). They borrowed information from small geographical areas (case study) without consideration to their relative spatial locations. Overall, the focus of this study is to provide comprehensive, spatial statistical data on informal manufacturing in Harare, through which end user requirements are met. Unless such kinds of

researches are carried out, nurturing of informal enterprises and collection of tax remains a challenge.

## 2.11 Lessons Drawn from Previous Studies by Others

The core findings of this review are twofold, analytical and methodological. The first set of findings relates to urban informality whilst the second is inclined to the application of spatial statistics as an analytic tool. Theoretically, informality has gone through three stages and views on the current stage are advancing for recognition of informality as a practical reality in developing cities since it is growing into a pseudo-permanent phenomenon. Notable degree of permanency has been associated with some patterns of behaviour. The way informal operators behave is a result of their attitude, knowledge and network. To understand better this behaviour, urban informality has been analysed and structured from different disciplinary perspectives. Various theoretical and disciplinary perceptions on urban informality have inspired this thesis to consider a comprehensive analytic approach. To this effect, this study incorporates together demographic, psychographic, behavioural, spatial and statistical aspects of informal manufacturing.

Methodologically, application of one study approach does not enable formation of an informal sector database considering that it feeds from many building blocks. Some blocks aim at providing the worth of data and some its quantity. As such, the mixed method style serves as an ideal method to compile both qualitative and quantitative data about informal manufacturing. In addition, the literature survey has pointed that spatial statistics can be employed to compile and analyse comprehensive, current and reliable spatial data on any subject. Spatial statistics, through one of its set of tools, spatial point pattern, allows easy scrutiny of the spatial setting of units of analysis. The two chief goals of spatial point pattern,

intensity and inter-point interaction, bring to fore the abundance of an observation, spacing and spatial dependents between observed points, the overall pattern of measures of analysis, and whether the perceived pattern is expounded by spatial covariates. Following this revelation power and interaction have been employed to assemble data related to clustering of manufacturers in space. Figure 2.4 is a diagrammatic summary of reviewed literature and lessons drawn from past studies.



Figure 2.4: Summary of Literature Review (Researcher's Compilation, 2018)

Overall, the review was in three parts; urban informality, planning law and spatial statistics. The study is grounded on urban informality. Lead in literature on urban informality was reviewed with the view of bringing to the forefront theoretical, conceptual, analytical and trending concepts in urban informality. Considering that present study aims to develop database model of the informal trade sector, literature review on spatial statistics gave some indications
on study approach and how the current study can contextualise spatial point pattern in studying informal manufacturing. Informative planning law review indicated the major pillars of planning law which will serve as the view through which study findings can be viewed.

## 2.12 Chapter Summary

The last segment has reviewed literature on urban informality and spatial statistics, and briefly outlined planning law and its founding principles. Theoretical and disciplinary perceptions on urban informality have indicated that most accessible studies are non-spatial, although they give insights into what goes on amongst informal operators. Literature on spatial statistics, borrowed from applications in different disciplines, has taken to light the data needs for spatial point processes. In addition, techniques on how best spatial statistics can be influenced to suit different study objectives were some of the lessons derived from the review. The forthcoming chapter gives an in depth scrutiny of the approach adopted for this study. Issues relating to research philosophy, data collection, study design and analytic instruments used will be discussed. Indications will be made to issues inclined to validity of study discoveries and lessons obtained during the data collection and analysis.

#### **CHAPTER THREE**

## **RESEARCH DESIGN AND METHODOLOGY**

# **3.1 Introduction**

This chapter frames the research approach and design adopted for this study. It answers six questions; what, why, where, how, who, and when data feeding into the informal trade sector database collected, collated, presented, and analysed. The assembling of current, complete, authentic, and reliable spatial and relational data about informal industries in Zimbabwe seeks to generate knowledge. More importantly, the answers for the six questions hinge on the researcher's global views and what constitutes acceptable knowledge. Such views and beliefs are deeply entrenched in the research paradigm and philosophy.

# 3.2 Research Paradigm and Philosophy

Research aims at creating knowledge (Hakim, 2000; Creswell, 2005; Bryman, 2007). How knowledge is created and what constitutes acceptable knowledge is contextual and debatable (Saunders, Lewis and Thornhill, 2009). Most accessible studies on urban informality are framed using the realism philosophy (Shabaneh, 2008; Dube and Chirisa, 2012; Keen and Kanbur, 2015). The rationalisation for using practicality spins on the basis that informal trade sector activities have numerous underlying invisible threads that cannot be easily revealed unless deep analysis is considered (Shabaneh, 2008; Sparks and Barnnet, 2009; Uzhenyu, 2015). Against this background, this thesis was structured with a greater inclination towards realism philosophy which hinges on the belief that observed reality, as opposed to reported reality, is truth (Saunders *et al.* 2009).

Further, it is elaborated that realism falls loosely into direct and critical realism (Saunders et

*al.* 2009). Direct realism is centred on the idea that what one observes is the truth, whereas critical pragmatism states that there is a story behind what one observes. As a result of the unstructured nature of the informal trade sector, the motivating and restrictive forces of informality are beyond what meets the eye at first sight (Shah, 2012). As such, critical realism best explains informal manufacturing because other issues surrounding it cannot be perceived by sheer inspection of activities taking place, but by critically analysing these activities and the relationship between them.

Considering the character of this study, compiling comprehensive, spatial and relational data on informal manufacturing, a wide spectrum of variables feed into the study. Some variables seek to describe the quality of data whilst others aim to describe its quantity. As such, mixed methodology was used to critically analyse issues surrounding urban informal industries in Harare. The use of mixed methods has been justified because it helps bring in different perspectives thereby giving a full picture and deeper meaning of the phenomenon under investigation (Hakim, 2000; Johnson and Onwuegbuzie, 2004; Johnson *et al*, 2007). The research plan details how mixed methodology was employed to structure the study, in the same vein exposing the stage at which mixing took place. This exposition is crucial since there is no clear-cut distinction in literature in accordance with the stage at which mixing should take place (Johnson *et al*, 2007; Bryman, 2007; Saunders *et al*. 2009).

# **3.3 Research Design**

A research design feeds from a needs assessment. Its function is to detail the sort of data needed to answer the research question, its uses and intended users. This is essential in ensuring that only relevant data is collected with the intention of responding to the research question in an explicit manner. The current study seeks to develop a geo-database model for the informal industrial sector in Harare and analyse the implication of its building blocks on planning law. A database feeds from a wide array data expressed in the gap analysis, Section 2.10. These data needs are expanded and packaged in Chapter Four, and the sources of these data sets are described in Section 3.4. Clearly described data needs partly enabled the progression of a plan on how, when and where data addressing the research question was collected and analysed. It is briefly summarised that research design is a procedure of transforming research questions into a research project (Robson, 2002). It collectively encompasses settling on research strategies, research choices, and time horizons (Saunders *et al.* 2009). It is must be observed that research design is independent of research methodology and sources of data (Yin, 2003).

The research plan of this thesis was twofold. The current study officially started in January 2015. The first leg of the research was approximately a two-year period, November 2012 to December 2014, before the onset of the study. This was followed by the second part of approximately two years, January 2015 to February 2017, after the onset of the study. When the GoZ called for the growth of an informal trade sector database, the researcher had collected unstructured and unsystematic data on compositional fundamentals in informal manufacturing. This data was gathered as a daily record of the researcher's interaction with car mechanics at Gazaland and it partly contributed to the database that was called for. Upon embarking on the research January 2015, the first three months ending 31 March 2015 were devoted to literature review whilst sorting data collection clearance issues. After getting the clearance, systematic and structured data was then collected from Gazaland, Siyaso and the Complex.

To gather primary data, a situational study research design was employed. In this scenario, a situational study denotes the sampling window (Baddeley, 2010). This decision was largely influenced by the point that the situational study strategy enables gathering extremely rich,

detailed, and in-depth information characterising a particular group of people or sector of the society (Champion, 1993; Robson, 2002; Yin, 2003; Saunders *et al.* 2009). Case studies can be categorized using two discrete dimensions; single versus multiple cases and holistic versus embedded cases (Yin, 2003).

Using the first dimension, single situational study focuses on one case only and aims to reveal unusual or peculiar issues whereas multiple case studies focus on similar, but not identical cases. This study used the multiple case study of three home industries (Siyaso, Gazaland, and Complex) inside Harare, Zimbabwe. Section 3.5.2 gives concrete information on the reasons why these three sites were selected. A somewhat similar strategy was employed to study informal employment in three Brazilian cities (Despres, 1988). The current study is different on its scale of operation because it centred on three sites in one city and this offered scope for cross-examination of issues and generalization of study findings.

Concerning the second dimension, it is observed that a holistic case involves studying selected case(s) in total whereas embedded case has a bias towards studying particular section(s) within selected case(s) (Yin, 2003). This thesis used the embedded case of informal manufacturing within the multiple case studies of three home industries in Harare. Perhaps, justifying why informal manufacturing was chosen as an embedded case will bring about clarity. Section 3.5.1, Selecting Informal Manufacturing, provides that justification. Figure 3.1 diagrammatically illustrates the numerous-embedded case study design adopted for this study.

Drawing up experiences from three different cases, arguably, guaranteed conclusive power (Yin, 2003; Johnson and Onwuegbuzie, 2004; Creswell, 2005; Saunders *et al.* 2009). This strategy is essential since the multiple-embedded case study design helped in tracing

similarities, congruencies and variations in behaviour trends and assumed positive association between operators working in neighbouring areas. Within the multiple-embedded case study, ethnography and sample survey were used to collect data from the informal traders. It has been opined that research strategies should not be thought of as being mutually exclusive (Saunders *et al.* 2009). As such, more than a single strategy can be made use of in one study.



Figure 3.1: Multiple-Embedded Case Study Strategy (Adapted from Yin, 2003; Johnson and Onwuegbuzie, 2004)

To get an accurate profile of behavioural and compositional data of informal manufacturers, the ethnographic strategy was used. Ethnography allows the researcher to explain and describe a phenomenon within the context in which it occurs and in a manner in which research participants would explain it (Saunders *et al.* 2009). It, therefore, occurs over a prolonged period (Yin, 2003; Creswell, 2005). Therefore, informal manufacturers working in Gazaland were studied over a four year period, two years before the onset of this research and then two years later its inception. For Siyaso and the Complex, manufacturers were studied for two years after the inception of this research.

The results from the ethnography study ignited strong interests to know whether the behaviour of informal trade operators depends on their psychographics in view of town principles. Town planning principles rose as an important set of variables because they govern the usage of space. A survey was then used to gather hard data on power and interaction of informal trade activities in space, and data on the relationships between psychographics of informal trade operators and town planning principles. That survey also helped in mapping the spatial distribution of informal industry activities in home industries. Figure 3.2 uses the set notation to summarise how the current study used three research strategies (case study, ethnography and survey).



Figure 3.2: Research Strategies (Adapted from Saunders et al. 2009)

Figure 3.2 depicts that ethnography and sample survey were used as sub-strategies within the multiple-embedded case study. The two sub-strategies where used in a sequential way with the sample survey being a follow up strategy to broaden and deepen the appreciation of how behaviour of informal trade operators relates to their psychographics in line with principles of town planning. Furthermore, the sample survey was employed to map the spatial and compositional fundamentals in informal manufacturing which were first viewed through ethnography. A summarised version of explained research design appears in Figure 3.3.



Figure 3.3: Research Design in Summary (Researcher's Compilation, 2018)

Figure 3.3 outlined that, when it comes to time frames, the research plan was two phases. The second phase was split into three sub-phases were the two main tiers are on data gathering and the last tier on data reduction, analysis and reporting. The last tier of the second part is expanded in Section 3.7. It is crucial to note that strategies adopted in the second phase were largely informed by the lessons obtained from the review of literature. Forthcoming sections detail the

determinants of study population and sampling procedure used; the methods, tools and strategies made use of to gather data; the techniques used in data reduction and analysis; how ethical issues were handled; and matters related to reliability and validity of study findings.

#### **3.4 Sources of Data Used to Answer the Research Question**

Both primary and secondary data were made use of in the development of a prototype geodatabase, in this research. Secondary data was used as the main evoker of experiences in the second part of this study. This secondary data was gathered using literature review and documentary examination of administrative documents. Text books, journals, unpublished studies and conference papers were the main sources of literature. These sources helped in establishing what has been and what is yet to be studied and they also provided rich, current scholarly information on urban informality. Documents reviewed include statutory plans, parliament acts and statutory instruments that govern urban informality in Zimbabwe because Zimbabwean planning law is explained and expanded in statutory plans, acts and instruments. So it was sensible to review these documents to assess their provisions. In addition, the 2014 mid-term fiscal review policy was reviewed with the view of understanding the government's position concerning taxing the informal trade sector. This was essential since it enabled analysis of existing institutional framework in creating inclusive space for informal industries in particular and informal trade sector in general.

Primary data was gathered from informal manufacturers and key respondents such as representatives from ZIMRA, financial institutions, Administrative Court, High Court and practicing planners. Representatives from financial institutions, ZIMRA and the MSMSE provided data related to their needs from the informal trade sector. Informal manufacturers gave data relating to psychographics in line with town principles, their likely reaction to the suggested tax measure, nature of products they produce, their relation with others in their working environments and in what way they secured their area of operation, among other data. Practicing planners, and Administrative and High Court judges helped in interpreting some issues inclined to planning law observed and reported by manufacturers.

## **3.5 Population and Sampling Procedure**

This section explains sampling techniques and the technique used to collect data on informal manufacturing. Details are specifically given on how and why informal manufacturing, specific study sites, key informers and respondents were chosen.

### 3.5.1 Selecting Informal Manufacturing

Informality within Zimbabwe and other places is cross sector visible (Miraftab, 2009; Dube and Chirisa, 2012; Majumdar and Borbora, 2012; Shah, 2012; Varley, 2013). Informality is found at tertiary, secondary and primary levels of production. In comparison to other levels of production, the secondary production level generates huge volumes of activity and employs a substantial amount of people (Hart, 1973; Despres, 1988; Sparks and Barnett, 2010; Mazongonda and Muromo, 2011; Majumdar and Borbora, 2012). As such, this study purposively selected informal manufacturing, in the secondary level of production, because it accounts for a larger proportion of activities in accordance with level and value of trade.

# 3.5.2 Selecting Study Sites

Thorough information on the geographical location, pattern of activities and growth strides of three home industries studied is represented in Section 1.5, Note on Study Areas. Reasons on why the studied sites were selected follow Figure 3.4 which shows the geographic location of selected study sites in Harare.



Figure 3.4: Location of Study Areas (Google Map, 2016 on Google Earth Extract)

In studying informal employment in Brazil's three cities, it has been reasoned that the cities in question were purposively chosen based "upon their regional location, the different socio and cultural origins of their working-class populations, and the point that each city revealed a somewhat different pattern of urban-industrial and population increase" (Despres, 1988, p. 6). Inspired by this ground-breaking work on comparative research of informality, the current

study used three home industries in Harare (Despres, 1988). The reasoning behind the selection of the sites in question followed the conclusions in existing literature about their large sizes, and differences in industrial pattern of activities and geographic location (Mazongonda and Muromo, 2011; Muponda, 2012; Uzhenyu, 2015).

Among other home industries in Harare, Gazaland, Siyaso and the Complex attract huge volumes of activity (Jerie, 2013; Masarirambi, 2013; Uzhenyu, 2015). As such, studying the three sites, arguably gave an indicative picture of issues surrounding informal industries in Harare. Furthermore, purposively choosing three different sites partly enabled the comparative examination of practical realities across sites as there are differences according to industrial activities between and within study sites. For example, Gazaland, has been described as "a conglomeration of small businesses involved in a plethora of activities such as sheet metal fabrication, light engineering, motor vehicle maintenance and repairs, spray painting and panel beating among others in the retail business like the supply of vehicle spare parts and general merchandising" (Muponda, 2012, p. 2).

# 3.5.3 Selecting Interviewees during the Survey: Informal Operators

The description of Gazaland in the preceding chapter is a reflection that a complicated mixture of activities takes place in a home industry. In that regard, the survey of informal trade operators largely relied on references to identify operators in informal manufacturing. References to other operators made it easy to utilise the spatial setting and assumed positive association between manufacturers in establishing the trade flow network connecting informal operators. Use of probabilistic sampling methods like simple random sampling could not yield intended results since numerous activities, including non-manufacturing activities, happen in home industries. Because this research is focussed on manufacturing activities, specific emphasis was paid on

avoiding accidentally choosing non-manufacturing operators.

To this effect, this study relied on a census blocks because the intent was to survey all manufacturers in each sampling window. The enumerators interviewed one and the next in a row. Enumerators came back for those not present. It is crucial to observe that the survey was exhaustive in nature, that is, all manufacturers in three sampling windows were surveyed as prescribed by the sampling design of spatial point patterns (Baddeley, 2010). This concept of census blocks (that is, analysing all units of analysis) was made use of in the city of Buffalo, New York (see Section 2.9.3) to identify and map deprived areas where access to grocery foods was restricted due to impoverishment (Lee and Lim, 2009).

# 3.5.4 Selecting Key Respondents during Ethnography: Informal Operators

Site key respondents were established through references to one person from at least five operators in a home industry. Number of years an operator has worked in a certain home industry and spontaneous leadership were used as the criteria to establish site key respondents. For example, the reception given by Mupostori (a key informant working in Gazaland whose role is discussed in Sections 3.6.1 and 5.3) when the researcher first visited Gazaland in November 2014, and spontaneous leadership skills he demonstrated at the duration of the field work made him a key informant. Through his links and network, Mupostori referred the research scientist to many other influential manufacturers working in Gazaland.

# 3.5.5 Selecting Key Respondents: End Users and Practicing Planners

Inspired by Sections 395 to 400 of the 2014 Mid-Term Fiscal Review, the informal trade sector database "will be distributed to micro-finance institutions, banks and ZIMRA" (GoZ, 2014a, p. 97). As such, to establish and structure the data needs of different end users, purposive

sampling was employed to ascertain main respondents. Key respondents were taken from the ZIMRA, banks, micro-finance institutions, Harare City Council, and MSME. Upon approaching these organisations, it was much easier to ascertain the key respondents because references were made to individuals who are mandated to handle urban informality issues.

After designing the database according to identified user needs, planning practitioners were purposefully selected to provide feedback on the implication of the database on planning law. Among the six selected practitioners were one High Court of Zimbabwe judge (who handled planning law cases since 2004 when she was a judge at the Administrative Court), selected town planning assessors with the Administrative Court, and former Deputy Director of the Department of Physical Planning (DPP) in Zimbabwe. These planning experts were selected since they are daily exposed to planning related issues. As such, they have experience and expertise in handling and interpreting planning law.

## 3.6 Data Collection Methods, Tools and Techniques

This section explains how the data was gathered using photography and observation, in-depth interviews, a tailor-made mobile geo-application, and content analysis.

# 3.6.1 Observation and Photography

The researcher first entered Gazaland home industry in November 2012 after purchasing his first second hand car from Japan. During this first visit the researcher wanted the services of a car mechanic who could help with a minor service. Approaching Gazaland from Willowvale road, old vehicles parked along roadsides met his eyes. Intermediary activities are quite common in this area. As such, the researcher felt welcome when two men escorted him. Of these two men, one pseudo-named Mupostori ended up being a chief informant in the

ethnographic study that extended over approximately four years. Since then Mupostori became the researcher's contact person in Gazaland.

Transcended walks in Gazaland proved important in identifying practical realities as they occurred. In the two years before the onset of the current study, the observation was unstructured and unsystematic. In spontaneous interaction with manufacturers, as a customer, it was only out of interest that trends of behaviour were observed and diarised as they unfolded without revealing it to manufacturers. No effort was made to seek for special consent or bother to reveal this because it was just a record of daily contact with different manufacturers and not for academic purpose or else. The researcher remembers a set of notes dated 14 March 2014, titled 'notes taken one day in a brake moulding workshop'. This method, termed participant observation, enabled ease of collection of rich, relational data about informal manufacturers in their natural setting (Saunders *et al.* 2009).

Upon embarking on the research on compilation of all-inclusive data on informal manufacturing, it was realised that the greater part of the data that was observed during the first part indirectly answered the research question of the current study. This realisation ignited researcher's interest to note whether observed realities were uniform across all informal manufacturing sites in Harare. This gave rise to the collective observation of manufacturers in Gazaland, Siyaso and the Complex for easy generalisation for another two years. During these years, manufacturers were observed with informed consent after revealing the researcher's identity and they (manufacturers) quickly accepted and expressed unconditional keenness to be involved in the research following the relationship and trust that had developed during the first phase. For Gazaland it was so easy to enter the study site because of existing

long-lasting relations. Through references and links from participants in Gazaland home industry it was easy to establish points of entry into Siyaso and the Complex.

During the second phase of collective observation, an observation checklist was designed in line with study objectives. This design was partly enabled by themes of what was observed during the two years of unstructured and unsystematic observation. Emphasis was placed on specifying and clarifying issues observed in the first two years. The observation checklist was made use of to capture behavioural and compositional fundamentals in informal manufacturing, and the trade-flow network that weave different operators' activities together. To help remember important events and subsequently tell stories, the photography technique captured important events.

# 3.6.2 In-depth Interviews with Key Respondents

One-on-one in-depth interviews with representatives from the Harare City Council, ZIMRA, banks, micro-finance institutions, and the MSME were undertaken. Their strong interest in informality issues better positions them to spell out the sort of data they want from the informal trade sector. Emphasis was placed on specifying follow-up and probing questions. This helped in getting the interviewees clarify their data needs and in what way they intend to use the data.

To navigate through assumed positive association between informal operators, unstructured interviews with influential operators were conducted. Through references from at least five players working at a certain site (see Section 3.5.4), influential players in home industries were established. For example, at Siyaso in Mbare, special consent to interact with manufacturers had to be granted by an influential player before getting close contact with individual players. It has been observed that some influential individuals arise spontaneously as people associate

together (Denzin and Lincoln, 2005). Such individuals are custodians of informal institutions. Other key respondents happen to be operators who have worked and or are living in an area over a lengthy period. Through referrals such individuals were sought for interviews.

Six planning practitioners were interviewed to give comments on the implications of compiled data on planning law in Zimbabwe. Such interviews were structured to first give background information on the study's purpose, data gathered and field experiences. Following this background narration, questions were then modelled on the implications of study discoveries on subdivision and consolidation, key and local planning, development control and public participation. These were informal interviews to give practitioners room to comment without limit. Short notes were jotted down during interviews, and then expanded and structured after individual interviews.

# 3.6.3 Tailor-Made Mobile-Based Geo-Application

A customised android mobile geo-application based on Geographic Position System (GPS) was developed by a data scientist specifically for use in data gathering for the survey of informal industry in Harare. This mobile application was cloud-hosted to enable instant interaction between the mobile devices and server. As an enumerator pressed the final submit button after a structured interview with a participant, research data were transferred instantly to the central server. The mobile geo-application was also designed in a way that it captured and stored the respondent's data (including geographical location) whilst offline and then automatically upload it to the main server when internet connectivity was available. This helped in accurately mapping spatial pattern of informal trading activities during internet connectivity disruption with minimal delay. The tailor-made mobile geo-application embedded a digital, semi-structured questionnaire and which was loaded on android mobile devices of ten enumerators. This questionnaire was self-administered to all manufacturers in three sites over three days. Data on informal manufacturers' behavioural reaction to the proposed measure by the GoZ to have the informal trade sector taxed the informal trade sector, and whether this behavioural reaction is expressed by informal manufacturers' psychographics (their knowledge, attitude and perception) in interpretation of principles of town planning was captured using scenario-based questions on a scale of one to five (appendix six). The questionnaire also captured data on socio-economic demographics, number of employees, their legal standing where registration is concerned, level of tax compliance, sources of raw supplies and their target market.

# 3.6.4 Content Analysis

Content analysis is defined as the technique of extracting important facts and derives themes from existing data (Saunders *et al.* 2009). Secondary data to partly address the research problem was gathered using literature review and document analysis. In both instances, content analysis was employed to peruse, skim, collate and generate themes from existing literature and administrative documents. Relevant literature was identified using key word search (for example, informal manufacturing and database development) and subsequently perusing abstracts of various published works on informal manufacturing. Literature review was used as the main evoker of experiences in informality, planning law and learning platform for applications of spatial statistics. The review of literature was done in three key parts. The first comprised theoretical and analytical literature on urban informality. The second provided a brief planning law review with specific prominence on the philosophy that led to the institution of planning standards, regulations, processes and procedures. The third segment of the review comprised literature on spatial statistics; particularly how variables for spatial statistical examination are extracted, structured and analysed.

Secondary data for use in analysing and clarifying issues in parliament acts, statutory instruments, and statutory plans guiding informal trade sector in Zimbabwe was gathered using document analysis. To better the understanding of the suggested tax measure by government (taxing the informal sector), Sections 395 to 400 of the mid-term fiscal review of 2014 was analysed. The RTCPA [Chapter 29:12], SI 216 (use group regulations) of 1994, and the layout plan for Harare city were analysed to better the understanding of spatial requirements of the informal sector.

## 3.7 Data Organisation and Analysis

Data collected using methods and tools outlined in the previous section were examined using qualitative, quantitative and spatial techniques. Detailed information on data reduction, organisation and analysis is outlined in Sections 3.7.1, 3.7.2 and 3.7.3.

#### 3.7.1 Organisation and Analysis of Qualitative Data

Qualitative data gathered using interviews was examined using sentimental analysis through text mining. Precisely, five steps were followed in sentimental analysis. Firstly, comments by manufacturers were imported into Natural Language Processing (NLP) as text files. Secondly, imported text was converted into vector format which is compatible with NLP. Thirdly, data was then cleaned to remove punctuation, numbers and synonyms. Fourthly, a term document matrix was developed. Development of this matrix made use of snowballing to accumulate words into a dendrogram. Lastly, a word cloud was built based on the occurrence of words in the document term matrix. Figure 3.5 is a typical example of a word cloud and word frequency.



Figure 3.5: Collective Word Cloud and Word Frequencies (Study Finding, 2017)

Interpreting Figure 3.5, the word size in the word cloud shows the rate of occurrence in sentiments of manufacturers. Colours of words, generated by a colour brewer, were used to differentiate the words rendering their frequencies for easy identification and interpretation. In this thesis, word clouds and word frequencies were exploited to examine behavioural responses of manufacturers to the proposal to collect tax from them. Figures 7.3, 7.4, 7.5 and 7.6 are word clouds and frequencies for all study .Sentimental analysis gave rise to the generation of themes. This technique was also used in analysing descriptive data captured using the digital questionnaire and content analysis where possible, coding of themes was used for easy entry of data into the Spatstat for frequency analysis. Data captured using observation and photography helped in remembering instrumental cases within the multiple-embedded case study, and subsequently told stories. Intersemiotic relationship (picture-text relationship) of such instrumental cases was reported through narration. The examination of findings was partly enabled by use of vital qualitative communication skills like interpreting experiences (conversation analysis) from stories narrated by participants. Behaviour trends were also grouped into themes.

## 3.7.2 Organisation and Analysis of Quantitative Data

With the help of a data scientist, Python Scripts (PS) were used for data cleaning through removal of null responses, erroneous (illegal values) due to typographic errors by enumerators. For example, age value of more than 100 or below five years. The cleaned and normalised data was first analysed in R language's Spatstat package to find measures of central tendency and measures of dispersion. Further analyses were done in R language using chi-square tests to ascertain whether cognitive human factors (attitude, knowledge, and perception) of individual operators depend on their understanding of principles of town planning (order, safety, amenity, and healthy).

A total 44 tests (that is, 11 per study site, reducing to 33 tests, plus 11 for all the three sites collectively) were undertaken (see Chapter Six) to decide the independence of association of manufacturer's psychographics and town planning principles. Where there was dependence, the relationship was quantified using regression analysis and the strength of association was calculated using Pearson Product Moment Correlation Coefficient (PPMCC). A host of other statistical tests to test hypotheses set ahead of the study in Section 1.3.3 were carried out using Spatstat. Complementary to the statistical analysis is a force field analysis which systematically analysed the restraining and driving forces surrounding this complex town planning and urban informality impasse.

## 3.7.3 Organisation and Analysis of Spatial Data

Examination of spatial data was exploratory based on use of many packages to derive insights from the data. R language's Spatstat package served as the key tool in the examination of spatial data captured by the mobile geo–application. Attractive visual displays were crafted in QGIS package, Google analytics and Plotly packages through R studio and Spatstat. A total of

fourteen (14) observed manufacturers whose geographical locations were not accurately captured were dropped at the data reduction stage. This is so because the fundamental concern of this research was to capture the accurate location of manufacturers for ease of clustering units of analysis.

K-means clustering was used for this reason. It is the most preferred machine learning system for segregating provided data set into a set of k groups (that is, k clusters), where k stands for the sum of groups specified beforehand by the analyst (MacQueen, 1967). Where observed locations could not be known by a specific cluster, the closest neighbouring distance was exploited to estimate clusters such points lay. These clusters partly enabled mapping the pattern and spread of informal trading activities, and subsequently develop a prototype geo-database for the informal trade sector.

#### 3.8 Objective–Approach Matrix

As already explained, this study used a wide array of methods and tools to collect and analyse data that contributed to the geo-database prototype of the informal industrial sector. In this case, the database is a compilation of a wide range of varied and related data about informal manufacturing in Harare. This justifies why documents reviewed and methods of inquiry used were necessary. The objectives-methodology matrix in Table 3.1 summarises the strategy used to address the objectives set ahead of the research. It is important to observe that objectives were not addressed in an undeviating fashion. The process was largely iterative and interactive.

Objective	Approach
To review the policy, legal, policy and	Literature review and documentary analysis was employed for this reason.
institutional framework governing	Key word search was made use of in reviewing literature on urban
informal trade in Zimbabwe	informality.
To assess the data needs of various	Structured interviews with end users including ZIMRA, local authority,
end users (revenue authorities, local	banks, and micro-finance institutions helped bring to light the data needs of
authorities, banks, micro-finance	various end users. Specifying and probing questions were made us of to get
institutions).	the interviewees to explain their data needs.
To establish the spatial and	Through participant observation, as a customer, over a four-year period,
compositional features in informal	data on spatial and compositional elements that weave together informal
manufacturing industry in Harare with	manufacturers was strewn together. Unstructured informal interviews with
the view of understanding their per-	selected manufacturers helped in clarifying observed realities.
standard industrial classification,	
locational rationale, and their business	
linkages.	
To map the spatial distribution of	A tailor-made android geo-application based on GPS was used to capture
informal manufacturing activities in	coordinates and spatial point pattern of informal manufacturing activities.
Harare with the view of providing	This mobile application was cloud-hosted to enable communication
evidence for their intensity and	between the server and mobile application.
interaction between and within	
clusters.	
To understand cognitive human	Data on knowledge, attitudes and perceptions of informal manufacturers on
factors (specifically, knowledge,	town planning principles and statutory business requirements was captured
attitude, and perception) of informal	using scenario-based questions on a scale of 1 to 5. The survey used a digital
manufacturers in respect of their	questionnaire loaded in a tailor-made android geo-application based on
citizenry obligation to abide with	GPS. In total, 44 tests were carried out to establish this relationship.
planning law.	
To model informal manufacturers'	An inquiry into the knowledge, attitude and perceptions of operators was
behavioural reaction to the suggested	used to predict their behaviour. A section on scenario-based questions was
tax ration.	incorporated in the questionnaire to capture the knowledge, attitude and
	perceptions of operators regarding taxing the informal sector.
To collate and coordinate synthesised	Data captured by the mobile geo-application was be analysed using R
datasets into a database model for use	Language's Spatstat package and QGIS to develop a prototype database for
by different end users	the informal sector.

# Table 3.1: Objectives-Approach Matrix (Researcher's Analysis, 2017)

#### **3.9 Validity and Reliability**

This section brings to the fore issues surrounding validity and reliability of data collected with the view to address the study objectives. The point of departure of spatial statistics is the presence of accurate location of units of analysis. Table 3.2 is a summary of descriptive data on level of precision in metres for all three sampling windows combined.

Table 3.2: Summary on GPS Precision Level (Field Experiences, 2017)

Descriptive	Sample	Minimum	Maximum	Mean	Lower	Median	Upper	Standard
Measure	Size	Value	Value		Quartile		Quartile	Error
Statistic	642	6	98.4	13.5	9	11	16	0.25

It must be highlighted that the greater the number of metres, the lower the level of accuracy. The results suggest that, on average, the location of all units of analysis was captured at a range of 13.5 metres and 75% of spatial points fell in a range of 16 metres. This is a true reflection that the accuracy level was very high. Taking the sample size in account, a standard error of only 0.25 metres was experienced implying that the locations of manufacturers deviated from the mean by 0.25 metres. Presence of outliers slightly stretched the mean upwards. Had it not been that, the average GPS precision level could have been lower than 13.5 metres.

However, the precision level was generally high regardless of the present outliers. The normalised collective precision level for the three study sites had a maximum value less than 30 metres. In this case, outliers describe very low precision level not compatible with other levels of precision in the data set. Perhaps, the following questions regarding precision level are worth to answer: are these outliers spatially distributed? Were the outliers experienced on selected days of the survey? These two questions are best answered by a detailed analysis of

precision level per site per day. As explained earlier in this chapter, Gazaland, Siyaso and the Complex were surveyed on days one, two and three respectively. The Mosaic Plot in Figure 3.6 provides the per-site GPS precision level and the percentage share of individual sites at different levels of accuracy. In the diagram, the three sampling windows, the Complex, Gazaland and Siyaso are represented by blue, brown and orange respectively. The horizontal axis gives different levels of accuracy ranging from 7 to 25 metres, and the vertical axis shows the percentage contribution by sampling windows at different levels of accuracy.



Figure 3.6: Home Industry by GPS level of precision (Field Experiences, 2017)

The thickness of bars in the Mosaic Plot describes the dominance in precision level. Figure 3.6 suggests that 7 to 13 metres ranges are dominant. Very few units of analysis were captured in the range above 13 metres as signified by the very thin bars. The column titled missing describes some results without geographical location. In spatial point analysis, such data is regarded as redundant. To enable further analysis, all manufacturers' results without geographical location were deliberately omitted from the database at the data reduction stage. Only usable data (that is, data with corresponding spatial location) was considered for further analysis. Though the percentage of such cases were insignificant (thin bar), it partly

compromised the results of the study because the concept of census blocks (Baddeley, 2010) could not be realised, that is mapping manufacturers in three sampling windows in their entirety. To complement this explanation and further clarify per-site GPS level of accuracy is the per-site, per-day GPS precision level indicated in Figure 3.7.



Figure 3.7: Per-Site, Per-Day GPS Precision Level (Field Experiences, 2017)

The set of Box and Whisker Plots in Figure 3.7 suggest that for all the three sites, 75% of study sites' geographical location were very accurately captured with a series of less than 20 metres. Extreme outliers were experienced on day one of the survey (in Gazaland) with a maximum range being 98.4 metres. After the technical facilitator attended the problem experienced on the first day of the survey, reasonable outliers of below 40 metres were documented on the second day of the survey (in Siyaso).

After critically studying the causes of outliers and taking corrective measures, all spatial locations captured on day three were devoid of outliers. Outliers were caused by capturing geographical coordinates under roof for manufacturers who work in closed spaces and some concerns in the underlying infrastructure of the mobile geo-application. This challenge was rectified by capturing the spatial coordinates outside buildings. It is critical to highlight that

only two enumerators had serious challenges in recording the spatial location of respondents in the first day of the survey. Figure 3.8 is a rough visual impression of per-site, per enumerator GPS precision level.



Figure 3.8: Per-Site, Per-Enumerator GPS Precision Level (Field Experiences, 2017)

The heat map in Figure 3.8 shows that in the first day of the survey two enumerators' data collection devices reported geographic coordinates which had a lower accuracy degree. Level of accuracy was largely compromised by a high range of 98.4 metres which subsequently increased the total variance and standard deviation. The technical assistant fixed this challenge during the lunch break of day one. The level of accuracy then improved to at most 40 metres whilst using the mobile devices offline. Further clarifying issues surrounding reliability and validity of the findings of the study is the section on ethical considerations.

# 3.10 Negotiating Access and Ethical Considerations

In this research, all efforts were made to make sure that aspects of ethics were observed

throughout. A reasonable amount of time (approximately 3 months) was lost in seeking for clearance from the Ministry of Finance and Economic Development (MFED) following the call by Minister to develop a national database of the informal trading sector. The researcher was later advised that the ministry has no mandate to clear research programmes outside the MFED (Appendix 3). Following the lessons that were learnt from past studies by others that informal sector surveys are politically sensitive, the research then sought for clearance from the ZANU-PF youth wing responsible for education (Appendix 4). In the process of seeking for clearance, the researcher worked on other research areas such as fine-tuning literature review and survey preparation since these areas did not require clearance.

To protect respondents, pseudonyms were used in the presentation of the results. Participants were guaranteed that collected data was private and confidential, and could not be manipulated for anything outside research purposes. In photography, the requisite permission was sought. A camera was only used when permission to do capture was granted. One participant wished his picture could be part of the final report as he thought this could enhance publicity of his work. He said, "If I must be in the book, kindly make sure I am right on the cover". It was only through explanation that this participant got to understand that this picture cannot be on the cover page, but probably the final report after careful considerations.

Furthermore, during the fieldwork, respect for the respondents was expressed in various forms. One of them was to let the participants know that being part of the research was optional and not compulsory. All participants were briefed on the type of study and possible usages of the data they were providing before asking them for their willingness and ability to participate. The participants were quite keen to participate and unreservedly gave their consent. Overall, it was the observance of research ethics that made this study possible.

## **3.11 Lessons Learnt During Data Gathering and Analysis**

There is vast literature concurring that compilation of field experiences revolves around description, application and learning (Schwarz, 1996; Glass, 2005; Early, 2007; Sert and Seedhouse, 2011). This section, intends to link researcher's fieldwork experience with conceptual observation on the application and learning because these two attributes call for more flexibility and dexterity. A warning against using research methods as described in theory has been given in literature (Chirisa, 2013b). Instead, it is recommended that researchers should jigsaw fit methods of research in situation of the circumstances and issues around the fieldwork (Chirisa, 2013b). Description gives the general outline of research strategies, tools and techniques. How these strategies and tools are tailor made to fit research situations is represented in the application, and learning gives lessons that future researchers on a similar subject and such like situations can make use of in designing their studies. As such, researchers should share their field experiences for aspiring, existing and seasoned researchers (Crick, 1989).

As noted prior in this study, informal sector surveys are super-sensitive, especially in postconflict phases (Shabaneh, 2008). The sensitivity differs between and within countries. It is, therefore, essential to share how this sensitivity was dealt with in studying informality in Harare. This experience can be partly compared to the Palestinian case because informal trading in Harare, Zimbabwe was studied during the post-conflict era (Shabaneh, 2008; Mzumara *et al.* 2015). Experience shared in this segment is on switching sampling windows, mixed reactions by respondents, politics of space in the informal trading sector, and the use of multi-level facilitation. The main aim of this section is to share the curving, structuring and fusion applied to existing methods in tapping information from informal manufacturers in Harare.

### 3.11.1 Switching Sampling Windows

Initially, the survey was scheduled to be run over a period of three days from 20 to 22 February 2017 (one day on each study site), starting with the Glen View Complex, followed by Gazaland in Highfield, and lastly Siyaso in Mbare. The reasoning behind this plan was influenced by the geographical location of study sites. Glen View is further from the Central Business District (CBD) of Harare, followed by Highfield, and lastly Mbare, which is adjacent to the CBD. Figure 3.4 is a map of Harare showing the siting of the three sampling windows.

So, the idea was to use an outside-inside approach that is starting from the outskirts of Harare and moving inwards approaching the CBD. After the enumeration team assembled at the Complex, on day one, for briefing before starting, the Environmental Management Agency (EMA<sub>2</sub>) representative informed the enumeration team of a major clean up exercise. EMA<sub>2</sub> is a board mandated to, among other functions, regulate and monitor and regulate the collection, disposal, treatment and recycling of waste. It is provided for by Part IV of the Environmental Management Act (EMA<sub>1</sub>) [Chapter 20:27]. It was therefore difficult to gather data amidst a major clean up exercise. Plate 3.1 is an image that was captured by one of the enumerators when they were arranging to switch to the second sampling window.

From Plate 3.1, it is amply clear that respondents' business premises were surrounded by accumulated uncollected waste from nearby businesses and residents. It would be difficult for enumerators to access operators' working sites. The enumeration team was then forced to act at the swiftly. The next best site was Gazaland, five minutes away, driving time, from the Complex since the two sites are in one district of Harare. The researcher quickly contacted Mupostori (a key participant) to mobilise manufacturers in Gazaland since they were expecting the enumeration team on the second day of the survey.



Plate 3.1: Waste Due for Disposal at the Complex (Field Experiences, 2017)

Luckily, Mupostori was on site and he did as per the request, but transport to ferry enumerators from the Complex to Gazaland proved an immediate challenge. They had one car with a carrying capacity of four passengers, yet there were ten enumerators plus two facilitators. By logical deduction, three trips were considered to ferry all the enumerators to the following study site. Approximately one and half hours of enumeration time was lost. The lost time was then compensated as most manufacturers in Gazaland knew the researcher at personal level following the four-year ethnographic study that was done in this area. It was, therefore, just an issue of explaining why the survey was run a day earlier than scheduled.

During the lunch break of day one, a facilitator, who worked with the enumeration team made prior arrangement with the contact person in Siyaso (third site) that the enumeration scheduled for day three would now be done out on the second day of the survey. This was meant to set the stage and avoid the challenge of start-up lost time experienced in switching between the Complex and Gazaland sampling windows on the first day of the survey. This arrangement received no resistance. The same arrangement was also made with the contact person at the Complex that the enumeration will be pushed to day three of the survey after the clean-up campaign which was scheduled to end on the second day two of the survey. Two things were learnt out of this switch of sampling windows.

Firstly, when conducting surveys, one must be flexible, open-minded and use scenario planning to respond to unexpected events like the clean-up exercise by EMA<sub>2</sub>. Secondly, use of management of objectives strategy is another key attribute that a researcher must have with him or her. Researchers must embrace unexpected events as they unfold whilst not compromising the overall aim of the study. Instead, they must alter the objectives to tally with the situation at hand. The Complex was supposed to be considered first, but that objective was changed, without altering the main of the survey, that is to study three sampling windows. The clean-up initiative by EMA<sub>2</sub> improved accessibility of the Complex on day three of survey. Apart from the challenge on switch of sampling windows, research participants met use of mobile devices to gather data with mixed reactions, misinterpretations and misunderstandings.

#### 3.11.2 Mixed Reactions by Respondents

Collecting data with mobile devices was not without its disadvantages. Some manufacturers did not sit well with these devices, thinking they were voice recorders. In as much as the devices could record voices, they were solely made use of to fill a digital questionnaire embedded in the mobile application. Local facilitators played a central role in explaining how the devices would be used to record geo-location with the view of analysing their interaction and intensity in space. One instrumental case in Siyaso home industry was that of a respondent who posed the question "what sort of a survey is this where you use mobile devices to collect data; we are familiar with the 'pen and paper' way of collecting data?" The answer to that and such like

questions revolved around explaining the advancement in technology and increased digitisation which they all understood.

Despite this scepticism, some participants were enthusiastic to participate and know about the use of mobile devices in collecting data. One respondent in the Complex asked if his products could be captured using a camera and, if possible, feature in the final report. The respondent was told that not all images would feature in the final report, but only selected images would be used after careful considerations. Following that explanation, he was willing that images of his products be considered, in case they might feature in the final report. We learnt that use of unfamiliar tools in collecting data attract mixed reactions with a greater inclination towards resistance. It is crucial that enumerators possess the ability to explain the tools they use to gather data in cases where some respondents do not fully appreciate unfamiliar tools.

#### 3.11.3 Politics of Space in the Informal Sector

This sub-section is inspired by an article by Elden (2007) entitled "There is a politics of space because space is political", which argues that space is a political and philosophical issue, and should be treated as such. Indeed this proposition is a reality in Harare's home industries. Siyaso provided an instrumental case which strongly supported this proposition. In the midst of data collection, after interviewing roughly 33% of manufacturers, a compulsory youth meeting was called for by the ruling party, ZANU-PF, and this disturbed the enumeration process. All the enumerators, being of youthful age, were not an exception. One facilitator, who was by then the secretary of education for ZANU-PF Glen View district, quickly interjected and excused all enumerators. The survey took a forced break till the meeting was over because all research participants stopped their manufacturing activities and attended the compulsory meeting. Luckily, the meeting lasted for about 45 minutes and enumeration

resumed thereafter. The major lesson drawn was that politics is an overriding project. It is essential for a researcher to be politically immune so that research undertakings are not disturbed by acts of politics.

#### 3.11.4 Multi–Level Facilitation

In data collection, a researcher succeeds through and with other people, herein mentioned as facilitators. In this research, facilitation was threefold; technical, political, and local. Considering that data was gathered with mobile devices, technical support played an instrumental role where technical challenges presented themselves. As explained prior in this chapter, the major test was on capturing the spatial location of manufacturers. Without such technical support, geographic location of some respondents might not have been captured. Technical backup was an important ingredient in improving and maintaining a higher accuracy level.

It has been advanced that informal sector surveys are politically sensitive (Shabaneh 2008). Following this warning, the researcher seriously considered diluting this sensitivity by making the study as apolitical as possible, whilst getting the much-needed data with ease. The researcher first sought clearance from the ruling party, ZANU-PF, to conduct the survey in home industries as mentioned earlier in this chapter. The secretary of education for Glen View district offered a facilitator role. He made all the arrangements with political figureheads which made smooth the assessment. A hiccup was experienced in Siyaso when all youths were called for compulsory meeting as explained before in Section 3.11.3. The political facilitator cushioned the enumeration team from being forced to join the rally. It was learnt that politically sensitive surveys can be easily done with the help of political facilitators.

Over and above, technical and political support, local facilitation is essential in introducing and directing the enumeration team to manufacturers. For example, in Gazaland, Mupostori, a car mechanic, mobilised manufacturers in Gazaland to participate in the survey and introduced the enumerators. The enumerators were warmly welcomed in all study areas because of this invaluable service. As explained prior in this chapter, a wide array of activities are housed in a home industry, so it takes a reasonable amount of time for one to locate an activity of interest if not acquainted with the area (Muponda, 2012). Through the help of local facilitators, it was so easy and fast to locate manufacturers working in home industries.

#### 3.12 Chapter Summary

This segment has detailed the research approach and strategy used in gathering and analysing data made use of in addressing the research problem. Essentially, the information related to the; philosophy and paradigm that informed this study design that has been adopted, sampling procedures and processes used, data collection techniques and tools used, and techniques of analysis used have been unveiled and justified. Issues relating to reliability and validity of the findings of the study and lessons obtained during data gathering and analysis were also discussed. Overall, the foregoing chapter answered the six questions what, why, where, how, who, and when data on informal manufacturing was collected, collated, presented, and analysed. Since huge volumes of varied data were collected with the view of developing a database model, the following chapter analyses and structures the user data needs in Zimbabwe from legal, policy and institutional perspectives. The scrutiny of user data needs will further justify why huge volumes of varied data were collected. This is crucial because this research is a reactionary study to the data needs of different end users.

#### **CHAPTER FOUR**

# POLICY, LEGAL AND INSTITUTIONAL PERSPECTIVES ON THE USER DATA NEEDS IN ZIMBABWE

#### **4.1 Introduction**

Inspired by the Zimbabwean government's call to initiate a national informal sector database, this chapter seeks to package data needs by different stakeholders. Sections 395 to 400 of the 2014 mid-term fiscal review specified that the proposed database should capture data needs of ZIMRA, banks and micro-financial institutions. Users stated in the mid-term fiscal review are just indicative in nature as there is room for the database to be made use of by many other users. This is so because the geo-database model in Chapter Eight of this research contains huge volumes of varied data. To put the data needs into context, this chapter starts by reviewing the background of informal trade sector development in Zimbabwe. Following this review is an examination of user data needs from legal, policy and institutional perspectives.

## 4.2 Background of Informal Enterprise Development in Zimbabwe

Before the realisation of independence in 1980, informality was at its minimum considering the existence of heavily enforced statutes and instruments like the Town and Planning Act of 1946, the Vagrancy Act of 1960, and the Vendors and Hawkers' By-laws of 1973 (Brand, 1986; Gumbo, 2013). At that time, the society was racially divided (Chirisa and Dumba, 2012). It has been argued that during that pre-independence era, informal manufacturing activities that were common in African locations included welding, carpentry and crafts (Gumbo, 2013). The assessment in this chapter is limited to post-independence (from 1980 onwards) realities because before 1980 informality was largely insignificant to receive mass attention, a situation which extended into the greater part of the first decade after attaining independence (Weketwe,
1989; Zinyama et al. 1993; Gumbo and Geyer, 2011).

Gradual gripping socio-economic upheavals of the late 1980s ignited the government to seek for a conditional loan from the International Monetary Fund (IMF). One of the conditions attached to this loan was the nation's adoption of an Economic Structural Adjustment Program (ESAP). Hasty implementation of ESAP saw the chronic exodus of industrialists, a downward spiral of economic activities, privatisation of firms, among other notable changes (Zinyama *et al.* 1993). Landslide retrenchment of workers pressured them to find sanctuary in informal enterprise. Further precipitating the progression of informal enterprise was the awarding of millions of dollars in compensation to ex-combatants in the late 1990s which left the country's economy in tatters (Mzumara *et al.* 2015).

The onset of the fresh millennium was characterised by the historical Fast Track Land Resettlement Programme (FTLRP) which led to further massive exit of industrialists leaving people jobless (Mabhena, 2012). The gradual 'wilting' of the formal trade sector coupled with client decrease and corruption saw the retrenched workforce joining the informal trade sector where they formed small-manufacturing clusters (Chirisa, 2007; Muponda, 2012; Gumbo, 2013). This reactionary resort by desperate employment-seeking citizens gave rise to a marked increase in informal enterprise.

Whilst earning a leaving through informal activities, a harsh clean-up campaign dubbed OM of 2005 dehumanised people as it destroyed their sources of livelihood (Tibaijuka, 2005; William, 2006; Gumbo and Geyer, 2011). Drawing lessons from the parable of endurance, when there lacks a second option, people press on. This has been highlighted as one of the explanations why informality is resistant to enforcement forces (Chirisa, 2007; Miraftab, 2009; Varley, 2013). The period after the historical OM was marked by an increased tension between

the ruling party, ZANU-PF, and two formations of the main opposing party, Movement for Democratic Change (MDC T and MDC M). This political crisis was largely pronounced in form of socio-economic crisis characterised by another significant rise in informality. Table 4.1 succinctly summarises this growth in informal enterprise development in Zimbabwe.

Period	Probable Cause	General Description	Comments
Early 1990s	Adoption of ESAP	ESAP presents the following	Reduction of state aid in diverse
		prescriptions among others:	sectors exposed companies to
		$\checkmark$ Deregulation of the	heavy shocks and stresses
		transportation sector	which saw the downfall of
		$\checkmark$ Privatisation of	many companies. Other
		companies	retrenched workers found
		$\checkmark$ Withdrawal of state aid	sanctuary in the informal
		on some companies	trading sector.
Late 1990s	Awarding of millions	This left the economy in tatters	Appeasement of ex-combatants
	of dollars to ex-		at the expense of addressing
	combatants		pressing issues is tantamount to
			misplacement of priorities. This
			strained an already overstrained
			economy. Various effects were
			pronounced in increase in
			informal activities.
Early 2000s	Fast Track Land	Transfer of land title from White	Being an agro-based economy,
	Resettlement	minority to the Black majority	a significant percentage of
	Program		upstream and downstream
			industries collapsed leaving a
			substantial quantity of people
			jobless. This partly pushed
			employment-seeking citizens
			into informality.
Late 2000s	Political and socio-	General lack of consensus	Protracted political and socio-
	economic conflict	amongst the ruling party, ZANU	economic conflict melted the
	amongst political	PF, and two formations of the key	economy down to its knees.
	parties	opposing party, MDC T and	Nearly all systems became
		MDC M, especially prior to,	dysfunctional and everything
		during and after the 2008	turned informal with high levels
		presidential elections.	of clientalism and corruption
			more pronounced.

Table 4.1: Informal Enterprise Development in Zimbabwe (Adapted from Weketwe, 1989; Zinyama et al. 1993; Gumbo and Geyer, 2011)

The summary in Table 4.1 has indicated that informal enterprise development was not an event, but a process which fed from political and economic policies adopted by government from 1980. The same argument resonates well in one study that tested and proved the hypothesis that the development of the informal trading sector is resultant of economic and political policies adopted by the new Zimbabwean government from 1981 to 2010 (Gumbo, 2013). Confirmation of this hypothesis followed a historical trace that packaged the economic and political ideologies adopted by the Zimbabwean government over a thirty-year period with view of bringing to fore their implications on informal trade sector development (Gumbo, 2013). Three major ideologies were noted as socialism (1981 to 1990), neo-liberalism (1991 to 2000) and authoritarianism (2001 to 2010). Each of these ideologies contributed towards the growth of the informal sector. Informality has grown to a point where it is now more of a pseudo-permanent development than anything. It is against this realisation that the government called for the compilation of a national informal sector database in 2014. This chapter intends to answer two major questions. Who are the final users of the called for database? What sort of data do these users need for them to make knowledgeable decisions? Responses to these questions constitute the major discourse of this chapter.

#### **4.3 Policy Perspective Data Needs**

The previous section has revealed that policies adopted by the government since attaining independence in 1980 partly explain the state of the informal trading sector today. As such, this section views data needs by different users through the policy lens. Practice and policy have a mutual relationship where policy is informed by practice and in turn informs practice. To well inform policy, there is necessity for complete, accurate, reliable and up-to-date data.

This is essential following the conclusion that "literature on the spatial distribution of the

informal trading economic sector and the various linkages that exist is insufficient and sometimes misleading... to date there exists no studies that rigorously demonstrate links" (Moreno-Monroy *et al*, 2012, pp. 2020-2026). In the same vein, it is claimed that very little is known about its composition and size (Losby *et al*. 2002; Duminy, 2011). As such, accurate and reliable data must be tapped from trustworthy sources free of bias. In this case, legitimacy of data can be guaranteed if the spatial location of manufacturers is captured. It is also essential to capture all measures of analysis that is, using census blocks to capture all manufacturers working in all sampling windows. Providing such data enables ease of analysis of intensity of manufacturers, at same giving the accurate number of manufacturers working in home industries.

To ensure compilation of up-to-date data, primary data as opposed to secondary data, should be used in the development of an informal sector database. Where secondary data is used, it must be made use of to clarify and specify certain issues. This is important because the historical analysis of informal trade sector development in Section 4.2 has unravelled that informality in Zimbabwe is an incessant state of change since 1980. Use of current information is important in giving up-to-date size, composition and spatial location of informal activities. It is likewise critical to structure a database that allows for editing to incorporate changes as they show up.

## **4.4 Legal Perspective Data Needs**

The literature survey in Chapter Two has indicated that the informal trade sector violates planning and business statutory requirements (Chirisa, 2007; Ademola, 2012; Dube and Chirisa, 2012). Despite the existence of precise statutory acts, regulations on planning and instruments, the informal trade sector continuously violates the specified regulations. For this

reason, the conduct of the informal trade sector has been described as resilient and stubbornly informal (Chirisa, 2007; Yiftachel, 2009; Varley, 2013). This section seeks to compile data needed to make existing regulations and instruments effective, and proffer possibilities, constraints and capacities for revising existing statutory plans, acts, instruments and regulations.

Section 13(1)(b) of the RTCPA [Chapter 29:12] provides undertaking a fresh study of the area of planning to establish perfect information about changes in the planning area. In this scenario, all the three sampling windows under study are provided for by SI 216 of 1994. Anything outside what is provided for by this SI is subject to enforcement. Groups 4, 5 and 6 of SI 216 of 1994 only provide for service industry, warehouse and general industrial use, and storage and special industrial use that serve the local people without generating noise, air and water pollution. To this effect, a fresh study should try and establish whether home industries in residential areas are not expanding beyond their boundaries. Furthermore, the new study should try and establish if activities in manufacturing in home industries are permissible by law. From a legal viewpoint, there is necessity to find out the sort of activities being undertaken in home industries and the degree to which they result in water, air and noise pollution, and whether these activities are within the specified boundary fences.

#### **4.5 Institutional Perspective Data Needs**

This section builds up a case for the user data needs using various newspapers articles published in Zimbabwe between 2014 and 2018. Organizations such as ZIMRA, National Social Security Authority (NSSA) and the SMSE are proliferating in most newspaper articles. Issues ranging from nature of employment to economic contribution and from behaviour to prospects of the informal trade sector in Zimbabwe have been reported. One reporter advanced that presence, let alone rising trend of informality is an indication of a lifeless economy (Lubinda, 2016). It is further reasoned that in such a failing economy, some level of permanency is inevitable and there is need for government to invest in training the youths since most informal enterprises die during the first few years of their incorporation because they lack the much-needed skill to sustain their businesses (Lubinda, 2016). This recommendation is a noble one, but very challenging to structure training packages before establishing the existing skills. A fresh study is therefore needed, to stock take current skills and establish future needs in as concerns advancing the existing skills is concerned. Perhaps, this may be established by ascertaining the education levels of informal trade operators and the kinds of training they received, and the sort of products they manufacture.

Concerning the magnitude of the informal trade sector, there is general lack of consensus in most accessible news reports since they are based on estimates (Lubinda, 2016; Musarurwa, 2017; The Independent, 2018). In one article, it has been reported that the informal trade sector in Zimbabwe is the 6<sup>th</sup> biggest in Africa. Contrary to that, it has been told that it is the second largest in the world. Regardless of the incoherence, there exists a common trend that the informal trade sector is very large and is dodging paying tax. It is misleading to establish a policy, legal or institutional decision in that environment characterised by estimates. What is the actual extent of the informal sector in Zimbabwe is now the question begging an answer. It is reasoned that the query of size emanates from the usage of questionable methodologies in estimating (Sengere, 2018). Determining the actual size calls for use of census blocks in studying urban informality as this gives perfect information as opposed to sample survey which is normally crippled by errors in sampling and bias. Establishing the exact magnitude of the informal trade sector is essential because it helps estimate the sum of money circulating in the informal trade sector because it is reasoned that there is an association between its size and

income level (Musarurwa, 2017). The comparative proportions of the sizes of informal operations are summarised in Table 4.2.

	Size					
	Individually Micro-enterprise Small-scale M		Medium-scale			
			enterprise	enterprise		
Percentage of	71%	24%	4%	1%		
informal enterprise						
Number of people	0	1 to 5	6 to 40	35 to 75		
employed						
Comment	The majority (95%) of informal enterprises are either run by individuals or have below					
	5 employees. Just a small proportion operate at small or medium scale.					

Table 4.2: Relative Proportions of the Size of Informal Operations (Adapted from Finscope, 2012)

Outcomes of the survey by Finscope in 2012 revealed the number employed by individual entities and their registration status. Following this survey, it is reported that 71% of informal enterprises are individually run with no employees, 24% are micro-enterprises employing between 1 and 5 employees, 4% are small enterprises employing between 6 and 40 people, and 1% are medium enterprises employing between 30 and 75 employees (The Sunday News, 2017). Further, it is reported 85% of informal enterprises are not registered and the other 15% is registered with varying percentages of registration with different organisations including local authorities, registrar of companies and cooperatives, among other institutions. Considering that this data was compiled in 2012 and that the informal trade sector is ever dynamic as revealed by numerous accessible studies cited in literature review, it is necessary to update these statistics by collecting and collating data related to number of employees engaged by individual firms and their registration status.

Provision of up-to-date, complete and accurate and complete data about business statutory requirements registration enables organisations like ZIMRA and local municipalities to

approximate the amount of potential revenue they are losing because of incomplete or nonregistration of informal enterprises. Furthermore, data employment structure helps organisations like NSSA in protecting and promoting welfare of employees. One newspaper article reported that NSSA is finalising the scheme for the informal trade sector (The Independent, 2017). Access to accurate and current information about employment structure in the informal trade sector partly enables NSSA to finalise their scheme from an informed viewpoint.

As explained in Chapter Two, various sections of literature have revealed that the informal sector is resistant to enforcement (Chirisa, 2007; Yiftachel, 2009; Varley, 2013). Recently, these behavioural tendencies were reported in Beitbridge and some parts of Harare (Zimbabweland, 2016). It has been recommended that authorities should channel efforts towards accommodating, encouraging and supporting the informal trade sector and not controlling, suppressing and ignoring it (Zimbabweland, 2016). Considering that the new wave is in the course of collecting tax from the informal trade sector, a virgin development altogether, there is need to accurately predict the behavioural responses by informal operators ahead of schedule to avoid resistive behaviours. Their likely behavioural response can easily be predicted using their psychographics as described by the TPB in Section 2.2.3.

#### **4.6 Chapter Summary**

An overall appraisal of the user data needs has revealed that various users need different data sets to satisfy their requirements. Data sets ranging from psychographics to behavioural, widening to employment structure and nature of registration, and extending to including locational and sort of activities has been asked for by different stakeholders. The exposition of these data needs justifies why a wide array of varied data was collected, collated and incorporated into a database model deliberated in Chapter Eight of this research. The next chapter presents compositional and working data of informal manufacturers in different study sites. Data on compositional elements is essential in showing the interaction and intensity of manufacturers in space.

### **CHAPTER FIVE**

# SPATIAL AND COMPOSITIONAL ELEMENTS IN INFORMAL

## MANUFACTURING IN HARARE: IMPLICATIONS FOR URBAN PLANNING

[Section on compositional and operational elements from this chapter has been published<sup>1</sup>] [Section on spatiality and clustering in space from this chapter has been published<sup>2</sup>]

# **5.1 Introduction**

This chapter uses a mapping narrative to provide hard evidence on what goes on among the informal operators. Compositional elements in the informal industrial sector are examined against the long-held negative perceptions that the sector is in a mess, fluid and to some degree, illegal as deliberated in Chapter Two. This shared view of the informal trade sector as chaotic is arguably misplaced because it argues order from a spatial viewpoint. Following is the narrative told by many people who make a living from informal enterprise in Harare.

A lot of people, without perfect facts about our services, speculate that there remains no order in the way we operate and tarnish, if not soil our image. This unsubstantiated common view about our operations is devoid of our day-to-day experiences. Worse still, we are believed to be engaging in nefarious and clandestine dealings.

The basis of this chapter is to link spatial and compositional elements to conceptual observation on order regarding the informal trading sector. Specific emphasis is levelled on interaction and intensity of manufacturers. Their interaction is cemented by strong social bonds, tool sharing, knowledge sharing, consultation information flows, and good workmanship. Quantitative data cementing evidence of these untold elements is also provided coupled with evidence on

<sup>&</sup>lt;sup>1</sup> Mazongonda, S. S. and Chirisa, I. (2017). Order in informal enterprise: lessons from Gazaland Home Industry, Harare, Zimbabwe. *Public Administration and Development Alternatives*, 2(1.1), 16-31.

<sup>&</sup>lt;sup>2</sup> Mazongonda, S. S. and Chirisa, I. (2018). Spatiality, clustering and the agglomeration economies of scale: A spatial statistical approach to informal manufacturing in Harare, Zimbabwe. In J. Mugambwa and M. W. Katusiimeh, (Eds.). *Handbook of research on urban governance and management in the developing world*. Hershey: IGI Global, pp. 224-247.

presence of clusters in home industries. All this is to demonstrate the presence of operational orderliness which when capitalised on will enable ease of tax collection.

# 5.2 Intensity and Density of Manufacturers in Space

This section sets the tone for this chapter by providing evidence on clustering of manufacturers in three home industries under review. Mapping narration on conglomeration is important in providing a rough visual impression on interaction and intensity of manufacturers in space. Figure 5.1a and 5.1b show the collective clusters without and with quadrant count respectively. The clusters were established using *k*-means clustering. It is crucial to observe that the clusters depicted in Figure 5.1 are devoid of study sites boundaries. Clusters with super-imposed boundaries are indicated in other Figures in this study (for example, Figures 5.7, 8.5, 8.6, 8.7 and 9.3)



Figure 5.1: Clusters of Manufacturers in Harare (Study Findings, 2017)

In Figure 5.1, the colours red, green and black represent the concentration of manufacturers in Siyaso, Gazaland and the Complex respectively. In terms of location, it is amply clear that Gazaland and the Complex are near in proximity to each other as shown by their adjacent location to each other. This is reinforced by the observation that these two home industries are

in Harare's Western district (Mazongonda and Muromo, 2011). *K*-means clustering of the three sites generated 12 quadrants where 5 of them have no manufacturers and 3 have the greatest concentration of manufacturers. Quadrants with very few manufacturers explain the existence of outliers that is manufacturers working outside the sampling windows. On absolute number of operators, the three study sites have almost the same number of manufacturers, with an average of 212 manufacturers per site. Interestingly, regardless of site, manufacturers are denser at centres of home industries. Figure 5.2 is a heat map collectively illustrating how manufacturers are concentrated on centroids of home industries.



Figure 5.2: Collective Density of Manufacturers (Study Findings, 2017)

Interpreting Figure 5.2, the lighter the colour, the lesser the distance between neighbouring manufacturers. This, therefore, means that manufacturers normally conglomerate at the centre of home industries. This is expounded by many spatial covariates including tool sharing, knowledge sharing and presence of social bonds cementing relationships. Also noteworthy is the observation that the heat map in Figure 5.2 bundled Gazaland and the Complex since they are spatially inseparable. Their adjacent location has been spatially regarded as one home

industry by QGIS package. Further supporting evidence of clusters with small neighbouring distance are graphs on expected (theoretical) and observed (practical) locations, and the minimum and maximum distances between manufacturers (see Figures 5.3). Figure 5.3 provides a rough visual impression of the outcomes of the pattern test of the Complex only because all the three sites studied sites produced the same pattern.



Figure 5.3: Results of Pattern Test for the Complex (Study Findings, 2017)

Expected pattern ( $K_{theo}$ ) that was generated from the observed locations ( $K_{obs}$ ) was juxtaposed with least and most distances ( $K_{lo}$  and  $K_{hi}$  respectively) between manufacturers. From the pattern, it can be assumed that there remains a slim deviation from the expected distance between adjacent manufacturers, implying that their working sites are very near to each other. This indicates that manufacturers in the three sites studied spatially rely on each other. From general spatial dependence within home industries, clusters showing concentration of manufacturers in similar lines of trade were generated and the outcomes of such are illustrated in Figure 5.4. This analysis provided evidence of intra-cluster and inter-cluster dependence, that is dependence within clusters and dependence between clusters.



Figure 5.4: Clusters of Manufacturers within Study Sites (Study Findings, 2017)

Figure 5.4 suggest that, regardless of study site, manufacturers conglomerate into clusters according to type of manufacturing activity. Use of different colours clearly shows the existence of spatial patterns. Clusters with a similar colour, but in different locations indicate that similar activities are undertaken in various clusters signifying existence of camps in manufacturing. This observed reality augments existing literature on specialisation between home industries by providing evidence on specialisation and clusters within home industries

(Brand, 1986; Kamete, 2010; Gumbo and Geyer, 2011; Jerie, 2013; Muponda; 2012; Masarirambi, 2013). Forthcoming parts of this chapter explain certain parts of the spatial covariates weaving and knitting manufacturers in clusters and at centroids of home industries. These covariates are described by the interaction of manufacturers between and within clusters.

## 5.3 Type of Premises

Spatial covariates explained in this chapter are a function of premises used by manufacturers in their day-to-day operations. Regardless of the industrial cluster, the general observed reality is that manufacturers work from sidewalks, public spaces and within designated properties. This section is structured to describe and explain the nature of operations within these premises. There is a concluding portion meant to provide descriptive statistics profiling use of the premises discussed in this section.

#### 5.3.1 Sidewalk and Public Spaces

In context of this study, sidewalk is used to describe space at the side of a road for use by pedestrians. In planning circles, such spaces are widely known as servitudes or road reserves. Servitudes are used by utility companies such as Zimbabwe Electricity Supply Authority (ZESA) and Telone to line up power and telephone lines respectively. Where such spaces are used as road reserves, they are meant for future expansion of carriageways. Contrary to these desired uses, manufacturers are using sidewalks as working sites. Three major challenges result from occupation of sidewalks. First, they inconvenience pedestrians who are in turn forced to use carriageways. Second, they put pedestrians at risk of being hit by vehicular traffic when they use carriageways instead of sidewalks. Third, congestion is inevitable because vehicular traffic is forced to slow down as a precautionary measure to avoid hitting pedestrians.

### 5.3.2 Within Designated Properties

Most manufacturers, 85.83% collectively, operate from designated properties. Designated sites include built-up and non-built up spaces provided in layout plans of home industries as manufacturing spaces. Manufacturers acquire these spaces using different strategies leading to varying property rights. Political links, subletting, own property and cooperative ownership are the form of property rights experienced by manufacturers. Finer details on property rights are discussed in detailed in Chapter Seven.

# 5.3.3 Summative Analysis of Type of Premises

Overall, a significant percentage of manufacturers (85.83%) are working within designated premises. Considering that per-site, all three sampling windows have exhibited the same trend with low variance.

Relationship	Collective (N=642)		Gazaland (N=189)		Siyaso (N=242)		Complex (N=211)	
	Absolute	Percentage	Absolute	Percentage	Absolute	Percentage	Absolute	Percentage
Sidewalk and Public Spaces	91	14.17	62	9.68	8	1.25	21	3.27
Within Designated Properties	551	85.83	127	19.78	234	36.45	190	29.60

Table 5.1: Type of Premises used by Manufacturers (Study Findings, 2017)

Interpreting Table 5.1, there are very few cases of manufacturers working in sidewalks and public spaces. Such instrumental cases are discussed in detail in Chapter Nine.

### 5.4 Significance of Social Ties Cementing Relationships

Formation and sustenance of clusters within home industries feeds strong social links between manufacturers. This keeps working relations strong and reinforced. It is easy for one to join existing operators through identifying contacts and connections first. For Mupostori, a car mechanic working in Gazaland, it was easy to secure an operating site because of his connections with already seasoned car mechanics. So, he quickly joined the bandwagon and established his base through exploiting existing social links. Sentimental analysis of narrations by different manufacturers revealed that it is easy for them to operate as a group since their relationship engagement is beyond a working relationship. These social links stretch to after work as a huge number of the manufacturers and non-manufacturers who provide ancillary services to manufacturers dwell in the neighbourhood surrounding the business area. Their families (wives, children and parents in some instances) are also bonded by good social relations.

Marketers of different supplies (spare parts, raw materials, engineering services and food) penetrate home industry through these social ties. Customers willing to purchase commodities or services from third parties are mentioned as suppliers in the manufacturers' social network. One such example is Mupostori business network with Lovedale Brake and Clutch Specialists (LBCS). The company specialises in rebinding brake pads and skimming of brake discs. It also owns a property directly opposite to car mechanics working site. LBCS provides informal car mechanics with free ablution facilities and shelter during harsh weather conditions. In return, any work related to brakes and clutch is referred to LBCS. Politically, to a certain extent, operators in home industries have the same political ideology. These people have the same socio–economic background. Thus, political parties try to infiltrate these areas through

established social interactions as the informal operators have a unity of purpose. They cling to the idea 'injure one, injure all'.

#### 5.5 Reflections on Natural Advantage: An Insight on Sharing of Tools

A total of 642 manufacturers participated in the sample survey, with a distribution of 29%, 38% and 33% in Gazaland, Siyaso and the Complex home industries respectively. A chi—square independence of association test was collectively used for the three sites to ascertain whether nature of products (products that are an end in themselves or those that can be used as inputs in other processes) produced in home industries depend on whether operators have full toolkits. A collective chi—square calculated value of 2.5432 was compared with a chi—square prescribed value of 3.180 (see Table 5.2). The outcomes suggest that nature of products does not rely on whether an operator boasts a full toolkit or not. It can, therefore, be assumed that even operators without full toolkits can successfully produce goods that serve as an end in themselves. This is a true reflection of spatial interdependence as manufacturers share tools to successfully manufacture goods of different types, finished and semi—finished. Manufacturers in a similar line of trade use similar tools. As such, it is easy for them to share tools when in adjacent locations.

Interestingly, 65% of manufacturers operate without full toolkits. This percentage is significant because it outweighs that of those with full toolkits, yet they produce both finished and semi-finished goods. Figure 5.5a shows the percentage distribution of manufacturers who own full toolkits and those without full toolkits. More than half (65%) of the doughnut represents the grand percentage of manufacturers without full toolkits. Most of the manufacturers narrated that their manufacturing processes are job-based, that is, they manufacture as per order (just in time) and only stock a few products for display. This enables easy sharing of tools and

optimises their usage since one manufacturer does not normally use all of them simultaneously. In the long—run, sharing of tools reduces capital expenditure on individual manufacturers, and thereby dropping the price of production. At the same time, this promotes interaction and networking since they are interdependent.



Figure 5.5: Aggregate Facts on Tools Ownership and Type of Tools (Study Findings, 2017)

Regardless of if operators own full toolkits, an investigation into the sort of tools used in manufacturing was conducted. 50% of manufacturers use a mixture of power and hand tools, whereas 42% and 8% use hand tools and power tools only respectively. The doughnut in Figure 5.5b shows this distribution. In an inquisitive attempt to know the association between tool ownership and type of tools used, and whether tool ownership depends on geographic location of study sites, data was collated, analysed and briefed in Table 5.1. These relationships are instrumental in explaining the level of spatial interdependence among the manufacturers.

	Do you own a full toolkit ?		Nature a	nd type of t	Products		
	Yes	No	Combination	Hand tools	Power tools	End products	Input to other processes
Gazaland	107	82	108	58	23	135	54
	(26.1%)	(35.3%)	(33.5%)	(21.8%)	(42.6%)	(26.3%)	(42.2%)
Complex	147	64	89	107	15	196	15
	(35.9%)	(27.6%)	(27.6%)	(40.2%)	(27.8%)	(38.1%)	(11.7%)
Siyaso	156	86	125	101	16	183	59
	(38.0%)	(37.1%)	(38.8%)	(38.0%)	(29.6%)	(35.6%)	(46.1%)
Totals	410	232	322	266	54	514	128
	(63.9%)	(36.1%)	(50.2%)	(41.4%)	(8.4%)	(80.1%)	(19.9%)
Pearson's Chi-squared test (with Yate's continuity correction)			Pearson's Chi-squared test			Pearson's Chi-squared test ( <i>with</i>	
data: location vs toolkit			<b>data</b> : type of tools vs toolkit			<i>Yates' continuity correction</i> )	
X-squared = 7.4227, df = 2, p-value =			<b>X-squared</b> = 1.1693, <b>df</b> = 2, <b>p-value</b>			<b>data</b> : Type of products vs tool	
0.02444			= 0.5573			Kit	
						<b>X-squared</b> = <b>value</b> = 0.110	2.5432, <b>df</b> = 1, <b>p</b> - 8

Table 5.2: Results on Analysis of Data on Tool Ownership (Study Findings, 2017)

It must be observed that for the relationships between geographical location and toolkit ownership, and type of products and toolkit ownership Pearson's chi-square test was performed for both aggregate and site-specific combinations using  $2 \times 2$  contingency tables. As such, the Yates continuity correction was applied to account for the inherent upward bias caused by use of  $2 \times 2$  contingency tables in Pearson's chi-square tests (Thompson, 1988; Hitchcock, 2009). Since these two tests are based on  $2 \times 2$  contingency tables, they gave one degree of freedom and chi square threshold of 3.841 at 0.05 level of significance. For the association between sort of products and toolkit ownership, any chi square calculated value above 3.841 led to the rejection of the null hypothesis (there is no relationship between the proximity of operators and sharing of toolkits) and vice versa. As indicated in Figure 5.6, only Siyaso gave a chi square value of 5.455 that lie in the rejection (blue) region. This means that, for Siyaso, type of products produced rely on whether one owns a full toolkit, whereas for other sites (including aggregate), types of products produced do not depend on whether a manufacturer has a full toolkit. Being an odd result, an inquiry was then made into what explains this anomaly.



Figure 5.6: Chi Square Rejection Criteria (Study Findings, 2017)

It was found out that independence of association test for Siyaso gave results that are contrary to the null hypothesis. Figure 5.7a indicates that manufacturers without full toolkits form clusters of between 2 and 5 manufacturers, and in some instances conglomerate around manufacturers with full toolkits. These outcomes suggest that operators without full toolkits can only manufacture goods to some magnitude and then contribute into production processes of other manufacturers without full toolkits or those that have full toolkits. So the presentation of spatial dependence of manufacturers working in Siyaso is different from that of manufacturers working in Gazaland and Complex. In Siyaso, manufacturers are not reliant on tool sharing, but on feeding one's output as input in someone's production process. On the contrary, in Gazaland and Complex manufacturers rely on each other's tools to produce either finished or semi-finished goods. So in both instances there is clear evidence of spatial dependence, irrespective of the variance in its nature.



Figure 5.7: Siyaso's Spatial Distribution of Tool–Ownership and Type of Tools (Study Findings, 2017)

Concerning the sort of tools that manufacturers working in Siyaso use, a significant percentage (52%) make use of a combination of hand and power tools, followed by 42% and 6% who use hand only and power only tools respectively. A test on whether type of tools used depend on whether one owns a full toolkit gave an aggregate chi—square value of 1.1693 which fell below a prescribed chi square value of 2.920 at 0.05 level of significance and 2 degrees of freedom. This reveals that type of tools used hinge on whether one owns a full toolkit. Half (50.2%) of

the manufacturers in the three sites use a combination of power and hand tools since most products require use of combined tools when manufacturing. Because of undercapitalisation, 41.4% of the manufacturers do not afford to buy power tools so they use hand tools only.

Figure 5.7 (both a and b) provides evidence of successful growth of Siyaso home industry. This is described by the fact that Siyaso has attracted new manufacturers working outside the sampling window, but dotted around the administrative boundary. This is not peculiar to Siyaso, but common to both the Complex and Gazaland. As such, it might be concluded that the three clusters are organically growing as evidenced by manufacturers dotted around administrative boundaries of clusters. Spatial interdependence of manufacturers within the sampling window and those in and out of the sampling window mainly revolves around tool—use economies of scale. Other than sharing tools, manufacturers also share knowledge on manufacturing at different fronts.

## 5.6 Reflections on Knowledge Sharing

Spontaneous mentorship programmes are common throughout the three sites. Mentorship has been called a long-term endeavour to enhance the skills of a cluster of people through innovative direct and indirect contact (Camagni, 2009). New players who join seasoned manufacturers in the trade undergo informal training. Initially, induction training, to familiarise the new player with the working environment, is provided. This is trailed by on-the-job training given as and when they do their day-to-day duties. Experts in human resources training argue that on-the-job training is highly effective, especially in a field that needs hands on experience (Stoner 1996). 'Learning by doing' buttresses understanding of practical issues. This form of drill is more practical-centred, than theory-centred. Such mentorship programmes mimic 'master-servant' relationship. A recruit should be submissive to seasoned

members in exchange of good mentorship. One should be prepared to work for at minimum one month without anticipating any remuneration, only to get food and a beverage during work.

A resounding 66.67% percentage of manufacturers, in aggregate terms, received local training through strong ties in form of family kinship and friendship. This is reinforced by the contribution made by North (1990) and Tabellini (2010) who explained that people tap knowledge from each other spontaneously as they mix and mingle. There was not much difference in this self—reported discovery across sites as it was fairly the same for all three sampling windows. It can be inferred that manufacturers across sites are cemented by family and friendship ties discussed in Section 5.4. Table 5.3 is a breakdown of the total number of manufacturers and the sort of training they received for each home industry.

Type of Training	Gazaland	Complex	Siyaso	Aggregate
Apprenticeship	26	21	32	79
Certificate	0	0	2	2
Degree and above	3	0	2	5
Diploma	20	10	12	42
Local mentorship	121	145	162	428
None	17	32	29	78
Secondary school	0	3	1	4
Self-taught	2	0	2	4

Table 5.3: Type of Industrial Training Received by Manufacturers (Study Findings, 2017)

Local mentorship, accounted for 67.7%, outweighing the other types of training that collectively accounted for only 33.33%. This, coupled with the information on a wide range of activities taken by these informal manufacturers, spanning from chemical manufacture, rubber

moulding to sheet metal work shows the free flow of information and skills in the informal trade sector. A further combination examination of the data clarified issues on the multi-tasking and multi-skilled abilities acquired by the informal manufacturers since they started working in home industries studied. The study results, as displayed in Figure 5.8, revealed that 68.8% of manufacturers specialised in one area of trade whilst the remaining 31.2% had at least two areas in which they focused on. It was also highlighted that the secondary skills acquired by the informal manufacturers were 'spilled-over' to them by their neighbouring counterparts during social gatherings, observational learning and subcontracting.



Figure 5.8: Specialised versus Multi-Skilled Manufacturers (Study Findings, 2017)

Sharing of basic skills among informal manufacturers was mainly necessitated by slumps in demand or seasonal demand of certain skills or products they manufacture. For example, a boom in demand for ox-drawn carts during the sale of the tobacco season by farmers with a major slump during the off-season affected the welders and sheet metal workers mainly in Siyaso. The suppleness of informal manufacturers challenges conventional wisdom in the formal sector with large corporations as it reduces the friction on the transfer of factors of production. For example, in this instance, transfer of labour towards wherever they are required

the most as dictated by forces of demand. This created a self-stabilising economy through balancing off demand and supply in a short space of time, offsetting price spikes or flooding of commodities on the market.

Also of consequence, was the amalgamation of skills acquired by participants (informal manufacturers) who were proficient in a minor specialised skill as they tended to possess the major skill owned by many of their counterparts? These skills included, but were not restricted to welding, carpentry, car mechanics and reconditioning as displayed in Figure 5.9.



Figure 5.9: Degree of Specialisation (Study Findings, 2017)

Figure 5.9 suggests that in the arena of carpentry, reconditioning and sheet metal work, manufacturers are taking these areas of engagement as supplementary additives to their areas of specialty. Such supplementary skills are acquired through learning by doing as manufacturers interact and network. This is a clear signal that manufacturers not only share tools but also share knowledge that glues them together. Car mechanics and welding are largely considered by manufacturers who specialise in those engagements. This is partly described by

the fact that these areas require more technical input thereby diluting the ease of entry. Mentorship programmes not only apply to new members, but extends to existing operators. Forms of consultation also constitute mentorship as existing players guide each other to fulfil specific troublesome tasks.

## 5.7 Consultation–Information Flows (Jobholder versus Expert)

Strategic technical persons acknowledge the presence of other more skilful experts. This awareness necessitates consultation. During the ethnography study, it was found out that Mupostori consistently consulted for expert advice. Consultation at Gazaland takes three forms: seeking for advice, seeking a hand and delegating the job to another person with more experience and skills. In this situation, consultation is on a continuum scale with seeking for advice and passing on the contract resting on the two extreme ends of the scale. On one end, seeking for advice entails asking for instructions only to fulfil specific pressing tasks. Somewhere along the continuum scale is where an expert is sought to work closely with the jobholder to fulfil a challenging task. On other hand, passing the job involves a highly specialised task that is beyond the capacity of a jobholder. In such cases, the expert 'jets' in and fulfils the task under the 'eagle eye' of the jobholder. The contingency table, Figure 5.10, relates two factors: 'type and level of input' and 'type and level of responsibility'.

The first factor, 'type and level of input' describes the input by an expert as direct or indirect. Indirect input entails instructing the job holder on how best to accomplish a pressing task whereas direct input portrays a scenario were an expert gives a hand. The second factor, 'type and degree of responsibility' summarises the type of responsibility ahead of an expert. Essentially, it explains the association between the job holder and the expert in relation to whether the responsibility is not transferred, shared or transferred. Critical to note is the fact that irrespective of the 'type and level of responsibility', the job holder retains the authority.



Figure 5.10: Forms of Consultation in Gazaland (Study Findings, 2015)

Interestingly, in Gazaland, consultation of specialists' service is paid for. Like in the formal sector, in informal enterprise, the idea is somewhat similar with some deviations. Consultation in the method of giving instructions is a service given free of charge building on social capital. When one gives assistance, the jobholder decides what amount to remit to the expert. Sometimes the payment may come as a token of appreciation, which will not necessarily attract a price tag. When a job has been delegated to an expert, an expert can charge separately, but works under the supervision of the job holder.

Consultation services are available because some trades are too technical and not easily penetrated. This was mainly observed and reported by car mechanics in Gazaland. Through participant observation, it was found out that mechanics in Gazaland home industry are using specialisation to realise their goals successfully. In this situation, specialisation is portrays the breaking of an activity (specifically, business activity) into its component parts to enable concentration on individual tasks. Gazaland local facilitator, pseudo-named Mupostori, is a simple duty mechanic. By time of compiling the final report, Mupostori was thirty-four (34) years of age and married. He is a former Amtec (a formal car servicing and maintenance firm) employee with experience in Toyota, Mazda and Nissan engine servicing. Through interaction with Mupostori over a four-year period, the researcher was referred to brake specialists, radiator experts, cable experts, suspension and spring mavens, and exhaust wizards. A lot was learnt from their expertise, experience and excellence since they are directly in constant contact with their substantive mechanical areas.

There are varied areas of flexible specialisation. Since these roadside mechanics do not possess machinery to conduct their operations, they recommend their clients to informal entrepreneurs that are into that line of business. Interestingly, to complement each other, radiator experts are 'referred to' to do all the jobs relating to servicing, reconditioning and repairing of damaged radiators. Mechanics with expert knowledge of cables are in charge of servicing and replacement of various types of cables (accelerator, brake, window, bonnet and boot cables).

When all other components of a car are catered for, making the car comfortable is to do with servicing and replacing springs, shocks, shock pads and the underlying suspension. All these comfort-bearing services are catered for by suspension specialists. To beautify and enhance the life-span of a car, additional features like a silencer and a booster are applied. Such forms of modification are the domain of exhaust wizards. Specialisation in informal enterprises can be equated to highly organised business activities that embrace specialisation and dissection of labour (Kotler, *et al.* 2010) and employ these business practices to improve on dexterity and proficiency. Observed realities on consultation from experienced people points towards the need of manufacturers to be nearby each other should a job be transferred to the next expert.

Likewise, they conglomerate strategically to enable them to consult and train each other. This promotes good workmanship practices described in the following section.

#### 5.8 Issues of Workmanship

Mandating one another instructions on how best to fulfil specific tasks and giving a hand in some circumstances is a true depiction coined 'one-anotherness' (Ndlovu, 2014). Manufacturers capitalise on social ties to foster operational linkages. They manipulate the relationships that spontaneously arise as people mix and mingle to tap knowledge from one another. During numerous informal unstructured interviews, most manufacturers contend that it is virtually impractical to obtain an operating place (even though some operate on roadsides) unless one is already connected to those already in the trade. For example, roadside car mechanics in Gazaland conglomerate themselves according to substantive mechanical areas. For instance, engine specialists are situated in close proximity to each other; brake mavens occupy their own section and so on.

Informal car mechanics order themselves along roadsides. Planning can bank on this in trying to promote spatial orderliness at micro–level. One of the principles of planning, order breeds about the idea of zoning. At macro–level, industries are arranged according to nature of activity. For instance, light industries, service industries, and heavy industries are not located on a similar site, but systematically linked.

The outstanding form of teamwork (one-anotherness) being practiced in home industries is deeply entrenched in the way new players are incepted in existing teams. As such, there exists no mammoth task when it comes to car mechanics as they join hands to conquer challenging assignments thereby moulding strong teams. Their daily adage is, '*rume rimwe harikombi* 

*churu*' (which translates to 'one succeeds through and with other people'). Exchange of ideas, skills and experiences constitute good workmanship. The 'cornucopian' view believes that most people are better placed to generate ideas in general and in the event of a crisis. From the manufacturers who took part in the research, no one among them is a proud owner of a full tool kit, but they share loose tools. Joining their hand tools together culminate into a complete toolbox as described in Section 5.4. This means they are well off when they work in unison. Sharing of different aspects in manufacturing explains why interdependence is of increased value than independence. Their interdependence is largely cemented by their residential backgrounds. A large number of them come from settlements neighbouring home industries.

## **5.9 Local Employment Creation**

There is overwhelming evidence that home industries in Harare result in more geographically concentrated benefits to the neighbourhoods they are located. Table 5.4 is a summative descriptor of the total number and percentage of manufacturers residing within and outside neighbourhoods of home industries.

	Within the Neighbourhood		Outside the	Neighbourhood	Per Site Total	
	Absolute	Percentage	Absolute	Percentage	Absolute	Percentage
Gazaland	111	58.7%	78	41.3%	189	29.4%
Siyaso	79	32.6%	163	67.4%	242	37.7%
Complex	124	58.8%	87	41.2%	211	32.9
Per Variable Total	314	48.91%	328	51.09%	<u>642</u>	<u>100%</u>

Table 5.4: Summative Descriptor of Locale–Site Relationship (Study Findings, 2017)

A significant 58.7% and 58.8% of manufacturers working in Gazaland and the Complex

respectively reside within the neighbourhoods of their home industries. These percentages are regarded as substantial because the remaining percentages of manufacturers working in home industries are spread across the spatial extent of Harare. This even explains why 32.6% of manufacturers working in Siyaso are a weighty percentage, though outweighed by that of Gazaland and Complex, because the 67.4% of informal manufacturers working in Siyaso come from elsewhere. Approximately half (48.91%) of the manufacturers stay within locations central to their working places. Harare's suburbs and towns contribute 51.09%. It can be, therefore, be assumed that footprints of home industries span across the spatial extent of Harare, with more geographically concentrated effects within their locale. A rough picture of the spatial distribution of places of residence of manufacturers not staying within neighbourhoods of home industries is provided in Figure 5.11.



Figure 5.11: The Sphere of Influence of Home Industries (Study Findings, 2017)

Values of 20, 40 and 60 imprinted on circumference of three concentric circles in Figure 5.11

show the total number of manufacturers who reside in different Harare suburbs and outside Harare. The longest yellow arm provides that significant percentage (35.6%) of manufacturers working in Siyaso is not resident in Mbare, but they come from Epworth, a peri—urban area. Glen Norah, Hopely and Budiriro suburbs and out of Harare towns, particularly city of Chitungwiza, are homes of a considerable percentage of manufacturers who are not resident in the locale of home industries. Homes of other manufacturers are dotted around other suburbs of Harare signifying that three sampling windows under study are creating employment for the Harare populace. In backing this finding, Majumdar and Borbora (2012) also discovered that people migrate to Assam (an industrial cluster in India) in pursuit of employment.

## 5.10 Implications of Intensity and Interaction of Manufacturers

Foregoing paragraphs have provided evidence supporting the usage of cluster theory for explaining the assembly of manufacturers in industrial clusters. Evidence of clusters is distinct despite the densification of manufacturers on centroids of home industries. The informal trade sector, disorderly as it appears, is kept strong by hidden compositional elements. Results of the spatial statistical assessment revealed that individual manufacturers rely on unmeasured or difficult—to—collect variables, such as mentorship practices, tool ownership, type of products (finished or semi-finished) being produced, circle of influence of home industries and spatial point pattern of explaining such variables.

Manufacturers dotted around administrative boundaries of sampling windows signify growth of home industries. This finding is supported by results of previous studies by other scholars that successful clusters normally span beyond political and administrative boundaries as new players come to join existing clusters (Porter, 1998; Kuah, 2002). Irrespective of whether manufacturers work inside sampling windows or outside clusters, they all spatially rely on each

other through tool sharing. It has been posited that informal operators are characterised by general lack of tools (Romjin, 2000). This supports the self-reported finding discovered by this thesis that informal manufacturers in the Complex and Gazaland share tools. Through sharing tools, manufacturers cut cost of operations and subsequently widen the range between revenue and cost. This practice has here been dubbed tool-use economies of scale. However, this finding cannot be general to all manufacturing sites as was evidenced by manufacturers working in Siyaso who do not rely on sharing tools, but rely on each other's output.

It has been argued, using the situational study of the Complex that the informal trade sector in Zimbabwe has revolved around four myths (Luebker, 2008a; 2008b; Muponda, 2012). First, most informal workers find themselves on the border of the law. Second, these traders lack right to capital markets and emerging technology. Thirdly, the operators lack warehousing facilities to store their raw supplies, unfinished work and finished goods. Lastly, that the operators are unprotected to all elements of weather. As has been documented by other studies, the current study of informal manufacturers from 2012 to 2017 has revealed that several of these myths are realities in Harare's home industries. For instance, many of the manufacturers lack warehousing facilities to lock in their hand tools, and they lack right to gain capital and money markets. Peculiar about Gazaland, car mechanics use complex adaptive systems and social networks to share knowledge, tools and lock their tools at LBCS (their business associate) premises. During the rainy season, they repair cars under the shade provided by LBCS at zero cost.

Considering the way manufacturers arrange themselves along road sides and relate through inherent social ties, planning can capitalise on such like elements to manage the informal trade sector, foster operational linkages, and harness value out of their operations. Identified social networks among the informal operators keep them motivated as they enjoy working together naturally. Through strong social ties, the informal operators share and maintain a common pool of data of their customers. This is an apt image that they have a client database. An organised collection of comprehensive data about individual customers aids manufacturers to keep in touch with their customers. Maintaining a customer database assists as a complimentary additive to direct marketing since they communicate directly with customers, often on a one—to—one, interactive basis. This partly enables manufacturers to learn about their customers in detail, and cater for special preferences and behaviours of target segments. As such, a database may be an important tool for building tighter long—term customer relationships.

This chapter also showed that within industrial clusters, manufacturers are bonded by mentorship practice where existing manufacturers train new manufacturers joining the trade. This is typical of learning by doing as knowledge is shared in an incremental fashion from seasoned manufacturers to upcoming manufacturers. The conclusion that spatial clusters of similar and relative economic activity affords prospects for the spread of sticky, non–articulated, tacit forms of knowledge between firms located in the same cluster supports mentorship practices in Harare's home industries (Kuah, 2002). The totality of concerns deliberated in this segment informed existing knowledge on spatial and compositional fundamentals in the informal trade sector. Long back, it was concluded that not much is known about composition and characteristics of urban informality (Morawetz, 1974), and recently one scholar claimed that informality means "different things to diverse people" (Schneider, 2005, p. 1).

### **5.11 Chapter Summary**

The intensity and inter-manufacturers interaction in home industries and the repercussions of the two has been discussed in the foregoing paragraphs. It is critical to highlight that despite the densification of manufacturers on centroids of home industries, evidence of clusters is distinct. These clusters are interwoven daily by interaction in the manner of tool and knowledge sharing, strong social ties, consultation practices, and good workmanship practices.

Overall, the spirit and drive of this study is to provide inclusive data on informal manufacturing with the view of devising a tax approach that can be made use of by relevant authorities to collect tax from the informal trade sector. As expounded by the TPB in Section 2.2.3, the decision to remit tax or not to is a product of one's knowledge, perception, and attitude towards the tax system. Does intensity and inter—point interaction explored in foregoing paragraphs partly explain or as explained by manufacturers psychographics in line with of town principles facilitate and condition the usage of space? This worthy to answer question is addressed in the following chapter using statistical data on psychographic. The answer to this key question is an important component in the growth of an informal sector database and growth of an operative tax strategy because informal activities happen in space and the decision to remit tax is a function of manufacturer's psychographics.
#### CHAPTER SIX

# INDEPENDENCE OF OPERATORS' PSYCHOGRAPHICS FROM TOWN PLANNING PRINCIPLES

[Part of this chapter has been accepted for publication<sup>3</sup>]

# **6.1 Introduction**

The preceding chapter analysed spatial and compositional fundamentals in the informal trading sector in Harare, Zimbabwe. Details on interaction and intensity of manufacturers in home industries were unveiled against the background that informal operators violate town planning principles (Section 2.5.4). Understanding cognitive human factors of informal manufacturers in line with town planning is fundamental in predicting their behavioural reaction to authorities' initiatives such as taxing the informal trade sector (GoZ, 2014a). Psychographics define mental vignettes (also known as cognitive human factors) such as opinion, attitude, value, knowledge, and view of individuals or group of participants as related to a specified phenomenon (Ajzen, 1991; Armitage and Conner, 2001). One scholar claimed that "the relative essence of attitude, subjective norm, and perceived behavioural control in the prediction of intention is expected to vary across behaviours and situations" (Ajzen, 1991, p. 188). Accurate prediction of intentions and behaviour is, therefore, a product of understanding hard data on the essence of attitude, perception and knowledge of a provided situation.

Noted in the review of literature is the idea that there are few studies that analysed psychographics of informal trade operators for example, (Sookram *et al.* 2006; Chirisa, 2007). Not one of the accessible studies used hard data to explain the association between informal

<sup>&</sup>lt;sup>3</sup> Mazongonda, S. S., Chirisa, I. and Mzumara, M. (2018). Independence of Informal Manufacturers' Psychographics from Town Planning Principles in Harare: A Spatial Statistical Approach. *Journal of Gleanings from Academic Outliers* [Accepted for publication and will be released soon].

trade operators' psychographics and town planning principles. Drawing up solid conclusions and drawing inferences from few published papers on psychographics of informal operators is thus suspect on three counts of reliability, replication and empirical backing. This urges further research to provide hard data on the relationship between psychographics of informal operators and town planning principles. The key thrust of this section is to make use of the spatial statistical strategy to test if informal operators' psychographics depend on their understanding of town principles since psychographics "vary across behaviours and situations" (Ajzen, 1991, p. 188).

## 6.2 Premise and Organisation of this Chapter

Essentially, this chapter seeks to find solutions to unanswered questions and challenge unquestioned answers by testing the following hypothesis;

Informal manufacturers' psychographics do not rely on their knowledge of principles of town planning.

This hypothesis has its basis on the secondary building blocks of the TPB highlighted in Figure 6.1. According to this theory, it is believed that one's attitude, knowledge and perception informs intention and behaviour. Explicit information on the TPB is provided for in Section 2.2.3. In terms of organisation, this chapter first analyses the association between informal manufacturer's knowledge and town planning principles (health, safety, order and amenity). This is preceded by the analysis of the attitude–town planning and perception–town planning relationships. Following these analyses is a section on the discussion on realisation of the chapter's aim. In this segment, results are categorised by psychographic–town planning principle nexus per study site, and then for all study sites collectively.



Figure 6.1: Theory of Planned Behaviour (Adapted from Armitage and Conner, 2001)

Results for all statistical assessments were undertaken at 5% level of significance. On one end, collective results were determined using a chi—square threshold value of 15.507 corresponding to 8 degrees of freedom and 0.05 level of significance. On the other, site—specific results were determined using a chi—square threshold value of 9.488 corresponding to 4 degrees of freedom and 0.05 level of significance. Any chi—square value above the starting point value led to the rejection of the null hypothesis in support of the alternate hypothesis and vice versa. Semi—processed data which directed towards the synthesised results in this section is provided in the appendix. Such data was captured using scenario—based questions crafted with hidden meaning as discussed in the methodology chapter.

# 6.3 Knowledge–Town Planning Relationship

A detailed quantitative investigation on the association between knowledge of informal manufacturers and each of order, safety, amenity and health is deliberated in this section. Table 6.1 is a comprehensive brief of this relationship. Overall, informal manufacturers' knowledge depends on their understanding of all town principles (safety, health, order and amenity). This

is supported by collective chi-square values which are above the endpoint value of 15.507 for all the four relationships in the first column of Table 6.1. Despite the presence of positive relationships, collective outcomes propose that all relationships are very weak, with less than 1% of their knowledge clarified by the disparity in understanding of the town planning ideology (all collective  $r^2$  values are below 0.001). The greater percentage, 99%, of the variation in this dependence is described by other factors, sampling error included.

Relationship	Collective (N=642)		Gaza (N=	Gazaland (N=189)		Siyaso (N=242)		Complex (N=211)	
	$\chi^2$	r <sup>2</sup>	$\chi^2$	r <sup>2</sup>	$\chi^2$	r <sup>2</sup>	$\chi^2$	r <sup>2</sup>	
Knowledge-Safety	32.38	0.001613 4176	31.613	0.001104 1917	6.294	0.001318 7531	9.164	2.729183 7e <sup>-5</sup>	
Knowledge-Order	23.155	0.000481 1912	21.128	0.000867 1894	7.54	8.471127 8e <sup>-5</sup>	5.286	0.000363 9453	
Knowledge-Amenity	23.941	0.001209 3298361 76	19.154	8.672533 8270007 e <sup>-7</sup>	11.784	0.003524 9975734 56	4.593	0.003863 6145	
Knowledge-Health	26.65	0.003736 3499779 76	17.337	0.003961 3277912 46	5.732	0.001903 3849328 4	16.155	0.000257 8189145 44	

Table 6.1: Knowledge–Town Planning Relationship (Study Findings, 2017)

This overall interpretation is largely influenced by Gazaland whose contribution outweighs other sampling windows. This is probably because informal as it is and disorderly as it appears, the level of orderliness in Gazaland is far much better when one compares it with Siyaso and the Complex. Such orderliness promotes health and safety practices to the manufacturers and the environment. Just like the collective results on knowledge–town planning principle relationship, all chi–square values for Gazaland are above the cut–off value of 15.507. This signifies that informal manufacturers' knowledge depend on their appreciation of principles of town planning. They have some knowledge of town planning principles, but their knowledge

is, to a larger extent, clouded by the profit motivation and probably general lack of training on such issues.

For Siyaso, manufacturers' knowledge does not rely on their appreciation of the safety, order and health principles given their chi–square values which are all below 9.448 threshold value. Only, knowledge–amenity relationship for Siyaso explains some kind of dependence given the chi–square value of 11.784 that is above the cut–off value. Even for knowledge–amenity relationship where there is dependence, the level of dependence is very weak ( $r^2 = 0.00352$ ) with only 0.352% of the variation of their knowledge explained by the association between the knowledge and amenity principle. Knowledge of manufacturers engaged in the Complex does not rely on their appreciation of safety, order and amenity ideology given their chi–square values of 9.164, 5.286 and 4.593 respectively which are all below 9.448 threshold value. For manufacturers engaged in the Complex, the association between knowledge and health principle generated a chi–square value above the cut–off value (16.155) implying that manufacturers' knowledge is, to an extent, explained by their appreciation of health practices.

Whether knowledge of manufacturers engaged in the Complex depend on their appreciation of principles of town planning, the coefficient of determination for the four relationships studied are all below 0.01 implying that above 99% of manufacturers knowledge is explained by other variables other than their appreciation of safety, order, health and amenity principles. Thus, informal manufacturers' knowledge on town planning principles differs between sites, although there is an insignificant difference on the three sites studied. Because of this insignificant difference, all relationships proved to be weak. So the discrepancy in informal manufacturers' knowledge is to a smaller extent explained by their appreciation of town planning principles.

### 6.4 Attitude–Town Planning Relationship

Informal manufacturers' attitude towards town planning principles, which can either be positive or negative, produced the results summed up in Table 6.2.

Relationship	Collective (N=642)		Gaza (N=	Gazaland (N=189)		Siyaso (N=242)		Complex (N=211)	
	χ <sup>2</sup>	r <sup>2</sup>	$\chi^2$	r <sup>2</sup>	$\chi^2$	r <sup>2</sup>	$\chi^2$	r <sup>2</sup>	
Attitude-Safety	35.668	5.037270 4e <sup>-5</sup>	17.019	0.000572 6707	2.9894	0.000111 6678	32.47	0.001164 302	
Attitude-Amenity	36.548	0.001897 7498	12.558	0.000518 5499	8.649	0.008966 9025	33.21	0.014350 0274	
Attitude-Health	2.4244	0.002014 5349	1.0036	0.001109 6699	1.8554	0.002180 7443	0.8346	0.000340 9788	
Attitude-Order	11.731	0.004118 14		0.001126 82		0.005833 23		0.002136 92	

Table 6.2: Attitude–Town Planning Relationship (Study Findings, 2017)

Attitude–safety and attitude–amenity relationships for Gazaland and the Complex resulted in chi–square values above the threshold value implying that the attitude of informal manufacturers depends on their appreciation of safety and amenity principles. This positive attitude towards amenity and safety shown by manufacturers working in Gazaland and the Complex partly explains why the collective chi–square values for these two relationships attitude–safety and attitude–amenity) is also above the threshold value of 15.507. These results cloud the chi–square values for the same relationships for manufacturers working in Siyaso. Generally, manufacturers in Siyaso have a negative attitude towards safety, amenity and health. This is clarified by chi–square values of 2.984, 8.469 and 1.8554 respectively which are all below the threshold value of 9.448. Thus, their negative attitude partly explains why they are dotted haphazardly in space without concern for health and safety implications related with over concentration.

Shockingly, for all the three sampling windows, manufacturers' attitude towards health is negative because of chi–square values which are all below the cut–off value. They seem not to care about health implications associated with land compartmentalisation practices within home industries leading to a complicated mix of land uses. For example, an observed reality in home industries is that grinding dust circulates freely in air making its way to food being prepared adjacent to manufacturing activities. This could be a potential health hazard because some grinding dust may contain toxic substances with long term negative effects.

# 6.5 Perception-Town Planning Relationship

Findings related to the perception of informal manufacturers towards town planning principles are displayed in Table 6.3. Gazaland and Complex have comparable level of dependence on manufacturers' perception towards safety, order and amenity principles (all chi–square values are above 9.448 threshold value). These perceptive outcomes recommend that individual controlling beliefs in these two sites are shaped by their concern for safety, order and amenity practices.

Relationship	Collective (N=642)		Gazaland (N=189)		Siyaso (N=242)		Complex (N=211)	
	$\chi^2$	r <sup>2</sup>	χ²	r <sup>2</sup>	$\chi^2$	r <sup>2</sup>	$\chi^2$	r <sup>2</sup>
perception-safety	20.265	8.699179 1e <sup>-5</sup>	10.497	2.988239 3e <sup>-5</sup>	1.2381	0.000111 2571	18.004	3.111716 3e <sup>-5</sup>
perception-order	22.023	0.002486 7596	18.031	0.008767 8297	2.8781	1.747072 8e <sup>-5</sup>	11.182	0.009056 7198
perception-amenity	43.45	0.001618 6291	37.07	0.008453 8702	5.196	0.000353 2971	20.928	0.011795 0895

Table 6.3: Perception–Town Planning Relationship (Study Findings, 2017)

Siyaso generated results that are contrary to other sites. For the three relationships perception–safety, perception–order and perception–amenity, controlling beliefs of individual manufacturers are not shaped or influenced by their appreciation of town planning principles ( $\chi^2$  is less than 9.448). The perception–amenity relationship for the Complex is peculiar because controlling beliefs of individual manufacturers contribute 1.17% to the discrepancy in their amenity practices. Contrary to this, all other relationships regardless of sites, individual manufacturers' controlling beliefs contribute less than 1% variation in their practice of principles of town planning.

## 6.6 Discussion on Attainment of Chapter's Aim

Collective outcomes of the three sites revealed that informal manufacturers' knowledge depends on their appreciation of each of safety, health, order and amenity (first column of Table 6.1). Despite the presence of positive relationships, collective outcomes point to the idea that all relationships are very weak, with less than 1% of their knowledge described by the variation in appreciation of the town planning ideology (all collective  $r^2$  values are below 0.001). This discovery is supported by the meta–analytic appraisal of the TPB which concluded that the subjective norm construct is generally "a weak predictor of intentions" as compared to PBC and attitude (Armitage and Conner, 2001). On the same note, a post–2005 Harare study of informality revealed that street vendors used their knowledge of town planning principles to escape development control (Chirisa, 2007). However, the conclusion of the post–2005 Harare study excluded to indicate whether this association is weak or strong because it was devoid of quantitative backing. It must be highlighted that the revealed weak relationship cannot be generalised across different sites since it differs between sites.

It is also critical to highlight that collective and site-specific result of the perception-town planning principle and attitude-town planning relationships were established to be generally weak. All the three vignettes encapsulated in psychographics (knowledge, perception and attitude) revealed a very weak relationship with town planning principles. This explained by coefficients of determination of at most 1.17% for all studied relationships. This is against the conclusion by Armitage and Conner (2001) that the knowledge vignette is generally a weak interpreter of behaviour as compared to PBC and attitude.

# 6.7 Chapter Summary

The preceding paragraphs have revealed the association between three psychological articles (knowledge, attitude and perception) of informal manufacturers and all of the four constructs (health, order, safety and amenity) embedded in town planning principles. Of the twelve expected relationships per study site, one relationship was dropped at the data reduction stage. Outcomes of the final eleven relationships revealed that there exists a very weak association between informal manufacturers' psychographics and town planning principles with unpredictable levels of weakness. Given this context, the next chapter predicts the likely behavioural responses by manufacturers to the suggested tax measure.

#### **CHAPTER SEVEN**

# PROPOSAL TO TAX THE INFORMAL SECTOR: BEHAVIOURAL RESPONSES BY INFORMAL MANUFACTURERS IN HARARE

#### 7.1 Introduction

This chapter shapes up from cognitive human factors concerns deliberated in the previous chapter. Specifically, eleven tests on independence of informal manufacturers' attitude, knowledge and perception from town planning principles were conducted. It was found out that there is a very fragile association between informal manufacturers' psychographics and town planning principles. As highlighted in Section 2.8, the fundamental concern of the law of planning is to give a technical foundation for creating, organising, coordinating and controlling developments. This is essential since planning law helps in setting parameters for taxation through zoning (Wekwete, 1989).

This chapter assesses the behavioural responses by informal manufacturers to the proposed measure to levy the informal trade sector. These behavioural predictions are envisioned to be fundamental in the development of an informal sector database. Considering that taxing the informal trade sector is a new development since the informal trade sector uses various strategies to dodge paying tax, a trained guess of their likely responses is essential (Granstrom, 2009; Kanbur, 2009; Shah, 2012; GoZ, 2014a; Keen and Kanbur, 2015). Making such a trained guess involves analysing various issues including, but not restricted to spatial, compositional, psychographic and behavioural elements surrounding the informal sector. The clarion call to compile such data is echoing from different sections of literature (Shabaneh, 2008; Sparks and Barnet, 2010; Shah, 2012; Dube and Chirisa, 2012; GoZ 2014a). This data serves as building blocks of the informal sector database called for.

It is critical to observe that this chapter focuses on informal manufacturers' psychographics in line with the proposal to tax the informal trade sector and their resultant intention and behaviour. Considering the TPB, this chapter places specific prominence on the last two parts (secondary building blocks, and resultant intention and behaviour) of the TPB in Figure 6.1. The previous chapter only studied the middle component in view of town planning principles

All research participants were made to respond to a psychometric test using six key questions on the proposal to tax the informal sector. The questions borrowed their inspiration from Figure 6.1. They tested the attitude, knowledge and perception of manufacturers in view of the proposal to tax the informal trade sector, and their subsequent intention and behaviour to that initiative. The next section summarises the collective responses by manufacturers regardless of site. This is followed by per–site responses since responses varied across sampling windows. This supported by one scholar's finding that "the relative importance of attitude, subjective norm, and perceived behavioural control in the prediction of intention is expected to vary across behaviours and situations" (Ajzen, 1991, p. 188).

# 7.2 Lead-in Summary of Responses

A brief of manufacturer's responses to the six key questions, on a 1 to 5 scale, is briefed in Figure 7.1. Overall, a whopping 90% of the manufacturers concluded that they must be consulted, where possible, in the growth of that tax strategy. This is essential since the manufacturers own a buy–in in the tax strategy they can embrace it. Participation in decision making can be equated to the idea of inclusivity in which stakeholder interact to find working resolutions to fund city development through an operative taxation policy (Chirisa, 2012; 2013). If the manufacturers have a feeling that they are distanced from crafting policies that affect their day–to–day operations they are probably going to resist initiatives of that nature.

Their resistance can take different forms, some which are difficult to enforce (Kanbur, 2009; Keen and Kanbur, 2015).



Figure 7.1: Collective Responses to the Proposed Tax Measure (Study Findings, 2017)

In as much as a significant percentage of manufacturers are calling for inclusivity in designing tax strategies, a huge chunk of them (68%) perceive taxation as a needless liability to their businesses. This partly explains why they are keen to participate so that perhaps they negotiate for a tax policy that dilutes the burden on their operations. Just 32% of the manufacturing believes that taxation is a fair initiative for sustainability of their business operations. Since 90% manufacturers are keen to be involved in designing tax strategies, relevant authorities should take the chance of such platforms to sell the notion of taxation to people who perceive it as an unnecessary burden. As such, receiving mass support is a key to winning the hearts of manufacturers.

Approximately, 50% of manufacturers have an appreciation of the motives why tax is collected from citizens and business operators. They demonstrated that they have knowledge that tax is used in the providence of civic and quality goods such as roads, water, street lights, and public libraries. To those without this knowledge, tax education is essential in selling the proposal to levy the informal trade sector.

Apart from the guided questions, manufacturers where given the room to air out their views on the notion of collecting tax from them. Responses drawn from unrestricted questions were analysed using sentimental analysis as discussed in Section 3.7.1, and the outcomes of all the three sites is displayed in Figure 3.5. From the analysis of the words in Figure 3.5, it can be assumed that manufacturers will pay tax to the government if taxation will bring about better service provision, particularly provision of waste collection bins and waste collection. Study findings showed that government is making tangible strides in taking maintenance of the environment. On the first day of the survey, there was switch of sampling windows because the government, through its agent, EMA<sub>2</sub>, was collecting waste from the Complex (Plate 3.1 in Section 3.11.1). Waste collection must not be a once off thing when large volumes of waste have accumulated, but a routine activity. Making it a routine activity will justify the need for tax collection.

Among the issues raised by some manufacturers, money collected through tax must be gainfully used to give them with access to loans, key raw supplies and removal of *magombiro* (touts) who provide intermediary activities. These are among issues to be negotiated when stakeholders meet to discuss about the proposal to tax the informal trade sector. The willingness of manufacturers to be involved in stakeholder meetings is a complementary gesture to the government's initiative. This discovery is backed by one scholar, who argued that informality

is a negotiated process, implying that taxing it must also be regarded a negotiated process and not an imposed event (Villamizar–Duarte, 2015). Adopting this perspective will help in informing theory, policy and practice.

Following some uncoordinated responses, an inquiry was made into whether the responses are independent of the queries asked. A chi–square independence of association test was conducted for all the study sites at 0.05 level of significance using  $5 \times 5$  contingency table with 16 degrees of freedom. This combination prescribed a chi–square threshold of 26.30. The intention of the inquiry was to examine the hypothesis that:

Manufacturers' views on the suggested tax measure are independent of questions asked.

Table 7.1 summarises the perceived and probable cell totals, and chi–square values for individual combinations. For this test, a calculated chi–square value of 372.7293 is way above the threshold of 26.30 meaning that manufacturers' responses rely on the questions asked. It can then be assumed that the responses by manufacturers differ between questions. Some questions were testing on the attitude, some knowledge and some perceptions of manufacturers to the proposal to tax the informal trade sector. Tax education is essential where there exists a negative attitude and perception about taxation, and where there is general lack of information on taxation. It is critical to observe that Table 7.1 shows the observed cell totals, (the expected cell totals) and [the chi–square statistic for each cell].

Scenario Presented to	Strongly	Agree	Neutral	Disagree	Strongly	Row
Manufacturers	Agree				Disagree	Total
Tax collection from your	136	181	72	176	76	641
income improves the working	(157.53)	(230.74)	(83.08)	(136.75)	(32.90)	
space	[2.94]	[10.720]	[1.48]	[11.26]	[56.45]	
Public and quality goods are	114	282	102	125	19	642
financed using tax payers'	(157.77)	(231.10	(83.21)	(136.97)	(32.95)	
money	[12.14]	[11.21])	[4.24]	[1.05]	[5.91]	
Tax measure places unfair	247	121	49	111	23	551
burden on industry	(135.41)	(198.34)	(71.42)	(117.55)	(28.28)	
	[91.97]	[30.16]	[7.04]	[0.37]	[0.99]	
Tax is valuable for its own	77	331	112	106	16	642
good	(157.77)	(231.10)	(83.21)	(136.97)	(32.95)	
	[41.35]	[43.19]	[9.96]	[7.00]	[8.72]	
A fair business environment is	192	207	69	147	26	641
tax free	(157.53)	(230.74)	(83.08)	(136.75)	(32.90)	
	[7.54]	[2.44]	[2.39]	[0.77]	[1.45]	
Column total	766	1122	404	665	160	3117

Table 7.1: Question–Response Independence of Association Test (Study Findings, 2017)

From Table 7.1, 136 and 181 observed totals strongly agreed that if tax is collected from their income, their working environment will improve. On the same note, 114 and 282 observed totals respectively strongly agreed that civic and merit goods are financed using money collected from tax money. This is a true image that a substantial percentage of manufacturers have perfect knowledge about the significance of taxation. However, 247 and 121 observed totals strongly agreed and agreed respectively that taxation places an unfair burden on their operations. This negative view towards tax is against their knowledge about it (tax). One respondent from Siyaso home industry explained that the spirit and purpose of taxation is noble, but its mal–administration is the chief reason why they perceive as it a needless liability to them. This is a sure sign that if government pledges commitment to use the finances collected through tax to intended purpose, manufacturers will back the initiative. Is this observed reality true for different locations and gender orientations?

#### 7.3 Characterising Collective Responses by Informal Manufacturers

This section seeks to ascertain whether manufacturer's behavioural responses vary according to gender and location. This characterisation is essential in tracing differences, similarities and congruencies in behavioural reactions. During fieldwork, much emphasis was placed on gender orientation of manufacturers to interrogate whether gender differences are a determining factor in behavioural reactions and nature of engagement. Of the 642 respondents who took part in the survey, 624 were men and 18 were female. Outcomes of the recent census of 2012 revealed that the proportions of men and women in Zimbabwe are 52% and 48% respectively (ZIMSTATS, 2012). An established sample of 642 was used to ascertain whether the populace of informal manufacturers in the three home industries under study conforms to the Zimbabwean population proportion.

Using the observed gender orientation frequencies, a coherence of population test was undertaken at 5% level of significance as shown by the results in appendix eleven. The outcome of this test gave a calculated chi–square value of 622.52 which is way above prescribed chi–square values of 3.841 (corresponding to 5% level of significance and 1 degree of freedom). This means that the populace of informal manufacturers from all study sites do not adapt to the Zimbabwean population. This could be supported by the fact that manufacturing, in record times, is labour intensive. So, considering the biological make up of women, very few women have the capacity to handle labour intensive engagements. Though the study gave attention to gender balance, no women were into manufacturing rather they are into catering or other sectors like sale of final products.

This result is contrary to assertions in literature that women constitute a significant percentage in the informal trade sector (for example findings by GoZ, 1991; Financial Express, 2013;

Chirisa, 2013a; Newsday, 2015; Labour and Economic Development Research Institute of Zimbabwe, 2017). They may constitute that a substantial percentage in other means of informality, and not in informal manufacturing. Gender orientation of women and men in informality, therefore, depends on which industries one is looking at. It is therefore vital that in cases were populations are not coherent when it comes to attributes, different management strategies must be drawn up to manage different sides of the informal trade sector. For example, management strategies for informal activities in varying levels of production (primary, secondary and tertiary) should be developed because of the revealed differences in gender orientation. When it comes to the TPB, behavioural response of women and men differ. Following the outcome of the test on coherence of population, this chapter only gives the behavioural response of men to the suggested tax measure.

Perhaps, determining if these responses can be made general across home industries informs policy formulation. To determine this, a test at 5% significance level was made use of to find out whether the behavioural response depends on geographic area of home industry. The outcomes of the test are indicated in appendix twelve. A prescribed chi–square value of 9.488 was established at 5% level of significance and 4 degrees of freedom. This prescribed chi–square value was then compared with a calculated chi–square value of 23.005. Since the calculated chi–square value is higher than the prescribed chi–square value it means there is an association between geographic area of home industry and behavioural response towards the suggested tax measure. It, therefore, means that behavioural responses noted depend on the location of the home industry. This is probably expounded by the differences in nature of informal institutions and social ties prevailing in different home industries. Likewise, the following sections discuss the predicted behaviour and intention of informal manufacturers engaged in various study sites. A full understanding of these and such like issues will add value

to the development of effective tax strategies.

# 7.4 Predicted Behaviour of Manufacturers: Focus on Gazaland

Outcomes of the text mining process of responses given by manufacturers working in Gazaland, is summarised in Figure 7.2. Sentimental analysis of the most widely used words showed that there were mixed reactions by manufacturers with a greater inclination towards resistive behaviour to the proposed measure. Most frequently used words were 'need to pay tax' and 'no need to pay tax'. This section analyses how these words were contextually used by manufacturers.



Figure 7.2: Word Cloud and Frequencies for Gazaland (Study Findings, 2017)

One roadside car mechanic from Gazaland had this to say:

We cannot pay tax because we will fail to meet our obligation, we have families to feed and children to send to school, so paying tax from the measly amount of money we realise will be unwelcome.

This reaction can be general to manufacturers working in Gazaland's open spaces. A large

number of them cited low profit margins. They expressed reluctance to remit tax given that their businesses are already stressed due to the liquidity crunch. This shows a complete denial of the concept wherein they say it is a needless liability to the informal investors as they do not directly benefit from such tax contributions. However, a substantial number of respondents (Table 7.1) were observant of the essence of tax and expressed keenness to pay reasonable amounts towards tax. A brake and clutch specialist working in Gazaland said:

As registered companies, we must pay tax. If we are asked to do remit, we will as long as it enables us to continue in business.

Interpreting the sentiment by the brake and clutch specialist, it is quite clear that manufacturers who adhere with business statutory requirements such registration requirements are keen to pay tax. This emanates from the point that such businesses are in proximity to the right end (compliance) of the continuum scale explained in Figure 2.3.

An investigation into land or property rights shed more light to the probable explanations to the differences in behavioural responses. Issues of land compartmentalisation practices were common in Gazaland. Those who own properties subdivided their properties without permission from the local authority. This means that enforcement of the local authorities is weak as evidenced by its failure to curb illegal subdivisions. A respondent highlighted that property owners are using their properties for speculative reasons where they rent out working spaces to other players. 60% of the respondents do not remit rentals (either they own properties or they work from open spaces) and 40% are on rented spaces.

The results have displayed that many are not paying rent. Through analysis, it was revealed that those not paying rent operate from open spaces. They are not occupying any built structure,

if it's there, then it is a make-shift structure. The dangers of such tenure; prohibited occupation of open spaces is imminent eviction. There is insecurity among the operators as one radiator expert said:

We are afraid of evictions like what transpired in 2005; we just hope we don't face the same challenge again.

This sentiment was referring to historical operation Murambatsvina of 2005 which dehumanised informal operators (Gumbo and Geyer, 2011). The usage of such open spaces also leads to limited production due to poor safety, lack of warehousing for the raw materials, equipment and even the finished products. Even if the government is to collect tax from such operators, a large number of them will fall under the tax threshold because of low productivity level and subsequently low profit. The situation in Gazaland is peculiar as the manufacturers testified that there exist no political connections needed for one to get operating space. One gas welder said:

There exist no political connections needed to get space in Gazaland, but family or friendship ties, or one's ability to pay rent that counts, or one's willingness to take risk to occupy an open space.

The local authority and ZIMRA are on the losing side because more than 50% of the manufacturers do not pay rentals to the local authority, and a large number of them produce a measly amount of money which is likely to fall under the tax threshold when one is introduced. Three key lessons emanating from the situation in Gazaland are: the need for tax education to enhance the appreciation of the necessity to pay tax; to enforce planning control so that manufacturers work in designated sites and remit rentals to the local authority; and to nurture the expansion of small businesses to ensure they operate beyond the tax limit when one is set.

This argument resonates well in results of one scholar who advocated for nurturing latent entrepreneurship and growth of small firms in Zimbabwe (Muponda, 2012).

# 7.5 Predicted Behaviour of Manufacturers: Focus on the Complex

Overall, informal manufacturers engaged in the Complex strongly expressed aversion to remit tax. An aggregate significant proportion, 93%, of the respondents cited a diverse range of reasons why they are against the notion of paying tax. Most of the explanations are documented in the word cloud and frequencies in Figure 7.3.



Figure 7.3: Word Cloud and Frequencies for the Complex (Study Findings, 2017)

Common reasons are that their businesses are already stressed a result of the liquidity crunch, and government officials who collect tax are corrupt. In his words, one respondent who is into manufacturing of sofas in the Complex home industry said,

> We remit rentals to the City of Harare but nothing of our welfare is being improved. So, why would we think that paying tax will improve our welfare? It will worsen our livelihoods.

This is a real mirror of the manufacturers' feelings. They lack assurance in the system and

possess a general lack of appreciation of the tax system. This is substantiated by the detail that some respondents assert that they are paying value added tax and they see no point in paying yet another type of tax. It would appear, therefore, that tax education is imperative to help enhance on the manufacturers' knowledge of the tax structure and the significance of paying tax. Planned behaviour theory explains that behaviour is a product of one's knowledge and attitude towards an issue in question. This is true with informal manufacturers at work in the Complex as evidenced by their inability to appreciate the difference in value–added tax and corporate (profit) tax. Furthermore, their perception and attitude towards the government's tax system are quite negative. They (informal manufacturers) lack assurance in the system. The discussion on whether tax establishments are corrupt is beyond the range of this research.

The intermediary function offered by touts was common in all three research sites, but the Complex rose above all. Contrary to other study sites (Gazaland and Siyaso), the Complex has only one access gate. Touts, nicknamed '*Magombiro*' in this area, team up and contest amongst themselves to escort customers into the Complex. This escort service is forced to both the customers and manufacturers. No transaction is initiated and concluded without intermediary service. One grievance manufacturer lamented that '*Magombiro*' do all the negotiations on their behalf and apportion themselves a percentage of sales before giving manufacturers their sales revenue. '*Magombiro*' use physical force to do this and they even physically fight for customers. In most cases, these touts team up in small groups of up to five and convince customers from different ends. At times, if business is very low, members of different teams clash and fight for customers and manufacturers. Most manufacturers said that it would be much appreciated if the government remove all touts since it is better to pay structured tax than to pay '*Magombiro*' who impose themselves. Plate 7.1 shows '*Magombiro*' at the entry

point into the Complex.





Plate 7.1b



Plate 7.1 shows touts discussing some issues, but all being directed to the guy wearing a hat. From the look of things, this guy is assuming leadership of this group. As discussed in Chapter Five, informal leaders arise spontaneously as people associate together. In Plate 7.1b, a tout wearing a red top is jogging approaching a customer to escort that customer into the Complex. A group of other touts in the background are all waiting for customers coming from one end. It is the order of the day at the Complex that customers are prohibited from accessing the Complex by these touts without escort. Concerning property rights, small scale informal traders in the Complex are all on rented space. Not one of them own immoveable property in the Complex. They rent from the governing party (ZANU–PF) officials, council or from colleagues (subletting). Manufacturing space used includes open spaces and constructed shells or make shift structures. The rent paid ranges between US\$25 and U\$50 per person (for those sharing) and stretching up to US\$300 for individually occupied, well–constructed stands.

Of the players who mentioned the governing party as the landlord it was noted that terms of operation are defined by representatives of the governing party. One home furniture manufacturer mentioned that:

I remit rentals to the chairman, the party chairman. If you renege to pay, you are not given notice; you are just chased out of here.

The rights on use of land in relation to subletting have problems like overcrowding which reduces productivity. Some stands house more than five manufacturers and this normally presents serious challenges in operation and handling clients. For guaranteed security of tenure, one must swear allegiance to the governing party because stand distribution is on party lines. A politicised environment is always not conducive for business as this may scare away clients hence affecting viability of establishment in the respective politicised sites. For the apolitical, or those from other political parties, it paints a picture of marginalisation and treatment as outcasts.

#### 7.6 Predicted Behaviour of Manufacturers: Focus on Siyaso

Behavioural responses of manufacturers working in Siyaso painted a peculiar picture when one compares its experience with other home industries. Siyaso is a politically sensitive home

industry and undertaking a survey in that area was negotiated along political lines as discussed in Sections 3.10 and 3.11.3. This experience can be equated to one scholar's experience that used the situation of Palestine to observe that informal trade sector surveys are super–sensitive (Shabaneh, 2008). The word cloud in Figure 7.4 indicates that manufacturers' keenness to remit tax is a product of political influence by the ruling government.



Figure 7.4: Word Cloud and Frequencies for Siyaso (Study Findings, 2017)

In all the political influence in Siyaso, some manufacturers expressed conditional readiness to remit tax. Access to loans, raw materials, improved working bays, and improved government's support were raised as some of the issues to be addressed for them to pay tax willingly. The sentiments were also echoed by manufacturers at work in the Complex and Gazaland. This boils down to the plea to nurture latent entrepreneurship (Muponda, 2012).

Just like the Complex, small scale informal manufacturers in Siyaso are all on rented space from the governing party (ZANU–PF) or from colleagues (subletting) with a lesser percentage renting from the local authority. Manufacturing spaces used include open spaces, constructed shells and make shift structures. The governing party, widely known as '*Musangano*' in Siyaso, defines the rent and terms of operation. Figure 7.5 shows the form of property rights of manufacturers in Siyaso.



Figure 7.5: Property Rights in Siyaso (Study Findings, 2016)

As displayed in Figure 7.5, more than 50% of the working space is in the hands of *'Musangano'*. Gathered evidence indicated that the governing party is influential in daily activities of manufacturers in Siyaso. Security of tenure is a result of loyalty to *'Musangano'*. A farm implements manufacturer said:

I am not at liberty to disclose who I pay my rent to and how much. Siyaso is a politically tense home industry where there are political overtones, misbehaviour may lead to loss of the land rights; *Musangano* can make one lose a stand

It is a true that to get a stand and be secured, one must swear allegiance to the governing party because stands distribution is by party lines. The informal trading in Siyaso has no structured institutions for the sake of management of their affairs. Political affairs determine the nature of interaction and networking. The relationship which exists between the operators and management is that of a landlord and tenant. In Mbare, the '*Musangano*' has the outright say on the conduct of the people given the land is said to be under the ownership of the ZANU–PF

party. Grievances related to land are politically settled. The challenges associated with politics of space include interruption of production as manufacturers are mandated to attend major functions of the governing party (Section 3.11.3). One welder in Siyaso in his direct words said:

Tinotovhara kana kukange kuine function yeparty or government mu Harare muno. Chero uine customer musi wacho hautoisevhe and that is a disadvantage sometimes.

[We stop production when there is ruling party's function or government's function in Harare. It is a great disadvantage because we stop production even when there is a customer]

Interpreting words of this welder, whenever there is a function of the governing party or government they are forced to close and attend, irrespective of whether they have customers to attend or not. This affects production and adds to unnecessary production time losses. In a business environment, production time is very crucial hence this arrangement is a major drawback.

## 7.7 Chapter Summary

Enthused by the call to tax the informal trade sector, the chapter brought to light mixed responses by manufacturers to the proposed tax measure by (GoZ, 2014a). The reluctance to remit tax by some manufacturers is not justifiable. For example, one respondent cited that he is already paying value added tax, so he cannot pay corporate tax. That they pay value added tax should not exempt them from paying corporate tax. Overall, manufacturers' knowledge of tax is seriously questionable since taxation is generally viewed as an unjustified burden to business. Emanating from this result is that education on tax is needed to increase the appreciation of the need for tax.

The foregoing paragraphs also showed that there is lack of transparency and openness in tax-related issues. The implication is that if taxation is introduced without a buy-in from the manufacturers, the initiative will fail. If manufacturers are convinced that there is corruption associated with tax collection then they will evade taxes using some evasive strategies discussed in Section 2.5.1 or other such strategies (Keen and Kanbur, 2015). This disadvantages the government as it will continue losing lots revenue which may be used in providing civic and merit goods.

It was also found out that the geographical area where informality is takes place influences behavioural response of informal operators. This is partly explained by socio-economic and political contexts in which informal operators find them in. These discoveries followed the revelations that informal manufacturing is a domain of men since the populace of informal manufacturers do not follow the Zimbabwe population proportion, and there is politics of space in home industries. Also, land or property rights in home industries determine the productivity level. Where there is high political influence (Siyaso followed by the Complex) manufacturers produce an insignificant amount of output which is expected to fall under the tax threshold when one is introduced. The coming chapter considers a deep dive into the geo-database of the informal trading sector in Harare. Its fundamental concern is to express the interplay amongst spatial, compositional, psychographic and behavioural characteristics of the informal manufacturers with the view of having a model that enables easy tax collection.

#### **CHAPTER EIGHT**

# TOWARDS A PROTOTYPE GEO–DATABASE MODEL FOR THE INFORMAL MANUFACTURING SECTOR IN ZIMBABWE

#### **8.1 Introduction**

This chapter seeks to advance a prototype geo-database model of the informal trading sector in Harare. The proposed database model leans on the ground work set in the initial seven chapters of this study. Perhaps, tracing the initial work set so far puts the geo-database model into context. The opening chapter gave the inspiration of the research and the research problem to be addressed. Development of the research problem was provided in the second chapter through the exploration of theoretical, analytical, conceptual and empirical issues in literature. A framework of the research design and approach used to collect, collate and analyse data was given in Chapter Three. Chapter Four analysed and structured the user data in needs in Zimbabwe. Chapters Five, Six and Seven analysed the spatial, Quantitative and qualitative issues surrounding compositional, spatial, psychographic and behavioural elements of informal manufacturers.

Previous chapters set the scene for the geo-database model of the informal trading sector in Zimbabwe. The present chapter gives a structured geo-database with specific emphasis on data volume (quantity), data veracity (authenticity) and data variety (formats). It uses a general to specific approach, that is, it presents data that cannot be recognised with specific respondents before presenting data about individual respondents. The lead-in part of this segment contextualises the database model by giving background information and defining key terms. This is trailed by a discussion of matters relating to geo-political, demographic, compositional and operative data of informal manufacturers. The analysis then heightens to metadata that can

be extracted from the database. Since the database is a repository of huge sizes of data to be used by different stakeholders, the section on Application Programming Interface (API) discusses the roles and data privileges of different end-users.

#### 8.2 Contextualising the Database Model

Discussions from the introduction chapter to this part of the research have pointed towards the growth of a database model, referred here as a data model, of the informal trading sector in Harare. It is essential, at this juncture, to formally define a data model by outlining its formal features. A data model has been described as any collection of huge quantities of interconnected data (Rob and Coronel, 2009). Two fundamentals emanate from the defining a data model. Firstly, it is concerned about the logical compilation of coherent related data. Secondly, data is structured and populated for a specific reason. In this case, spatial, behavioural, psychographic, demographic and compositional data about informal trading in Harare is populated with the view of collecting tax from the informal sector, among other reasons. It is reasoned that a data model revolves around four constructs namely; entities, attributes, relationships and constraints data (Rob and Coronel, 2009). These four constructs are anchored by primary and foreign keys. Perhaps, defining the four constructs and two anchors contextualises the data model.

- Entities these represent distinct entries such as places and people incorporated together to form an ideal database. Units are signified as database tables.
- Attributes these are characteristics of individual entities. Attributes are embodied as database fields.
- **Constraints** define limitations put to protect data integrity. For example, setting the age attribute to capture integers only and prohibit it from accepting characters.

- Relationships show the links or correlation of entities. Relationships can be one-to-one or one-to-many and many-to-many or many-to-one. A one-to-one relationship describes one input entity leading to one output entity whereas a one-to-many relationship describes a scenario where one input entity gives many output entities. Many-to-many relationships denote a scenario where many input entities give many output entities whereas a many-to-one relationship describes a scenario where many input entities whereas a many-to-one relationship describes a scenario where many input entities whereas a many-to-one relationship describes a scenario where many input entities a scenario where many input entities point towards one output entity.
- **Primary key** these fields uniquely recognise an instance or an entity and are not duplicated in the identical database table.
- Foreign key it is a field in one database table that points to a primary function of another table denoting the association between two or more units in the database

The foregoing contextual appraisal of the data model, literature reviews (Chapter Two) and user data needs structured in Chapter Four of this research have concurred that the main determinant of a data model are the final users of the database. Against this background, the proposed data model strives to satisfy the data requirements of ZIMRA, micro–finance institutions and banks. Overall, the proposed data model aims to satisfy data necessities of the Local Planning Authority (LPA), non–governmental organisations, MSMSE, among other interest groups. The scholarly concern of foregoing paragraphs is setting the underlying infrastructure of a functional database that fulfils its implied needs

# 8.3 Geo–Political Data

This section offers a thorough summary of geo-political data on informal trading in Zimbabwe. It situates sampling windows (Gazaland, Siyaso and the Complex) in Harare province. This is essential in providing room for scalability of the database. The same data on

informal manufacturing can be gathered from other districts in Harare and other provinces in Zimbabwe, thereby generating a national informal trading sector database. The database model is structured to capture four spatial entities; provinces in Zimbabwe, districts and wards in Harare, and sampling windows surveyed. Concerning geo—political data, qualities like names and geo—reference (polygon shape) can be made use of in accessing data from the data model. An interactive map of Zimbabwe showing several things on one map was adapted from <u>https://zimgeospatial.github.io/</u> and contextualised to the current study using open street maps. In this chapter, the interactive map will be shown on separate maps for attractive visual displays. Sections 8.3.1 to 8.3.4 outline the provinces in Zimbabwe, districts in Zimbabwe, Harare province, and study sites respectively.

## 8.3.1 Provinces in Zimbabwe

Zimbabwe is split into ten (10) provinces namely Harare, Mashonaland West, Mashonaland East, Mashonaland Central, Manicaland, Matebeleland North, Matebeleland South, Bulawayo, Masvingo and Midlands provinces. Of these ten provinces, Harare and Bulawayo are the first and second largest cities in Zimbabwe respectively. Harare in its capacity as the capital city of Zimbabwe attracts huge volumes of activity (both formal and informal). The ten provinces are recorded in the data model to capture key characteristics like place code and province name. The first entity (table) recorded in the database gives two fields and their conforming descriptions as displayed in Table 8.1.

Fable 8.1: Provinces in Zimbabwe	e (Researcher's Anal	lysis, 2018)
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Field Name	Description
Provincepc	P-Code for the province. (Place Code)
Province	The name of the province

As displayed in Table 8.1, provinces can be recognised by names or place code. Any request to see the provinces in Zimbabwe will provide the map in Figure 8.1. This map, and all other maps in the data model, can be zoomed in and out for an improved view.



Figure 8.1: Provinces in Zimbabwe (https://zimgeospatial.github.io/)

As indicated in Figure 8.1, Harare is both a province and a city. On the map, spatial area of research is highlighted in red whereas other provinces are displayed in blue. Interestingly, with regards to spatial extent, Harare and Bulawayo provinces are the smallest relative to others, yet Harare attracts large volumes of activity.

# 8.3.2 Districts in Zimbabwe

In the data model, if a user is searching for information on districts in Zimbabwe only, one can click the districts layer and the resultant map of such an inquiry is shown in Figure 8.2.

Boundaries of the districts in Zimbabwe are shown as polygon features.



Figure 8.2: Districts in Zimbabwe (https://zimgeospatial.github.io/)

As indicated in Figure 8.2, Bulawayo and Harare serve as cities, provinces and districts in Zimbabwe. The entity of districts is structured to give district place code, name of district, name of local authority in charge of the district in question, the sort of authority (for example Rural District Council, Urban Council, Municipality, and so on), province place code. The summary of district entity is as shown below;

####Field Definitions: | Field Name | Explanation | | ------- |------- | districtpc |
P-Code for the district. (Place Code) | | district | The name of the district | |
local\_authority | The name of the local authority | districtyp | The type of the local
authority | | provincepc | P-Code for the province. (Place Code) |

# 8.3.3 Wards in Harare

This section gives data on wards in Harare. It is critical to note, the database provides data for all wards in Zimbabwe, but for the intent of this presentation, only wards in Harare are highlighted in Figure 8.3.



Figure 8.3: Wards in Harare (https://zimgeospatial.github.io/)

Figure 8.3 shows all wards in Harare province. Captured in the data model are ward place codes, ward name, district name, alternative district name, province name, district place code, province place code, and changes made to ward limitations in year 2008. Data describing the ward entity is summed up as follows;

####Field Definitions: | Field Name | Explanation | | ------- | ------- | | wardpc | P-Code for the ward. (Place Code) | | wardname | The name of the ward which is actually a number. || province | The name of the province || district | The type of the district || alt\_name | Alternative district name. || districtpc | P-Code for the district. (Place Code) || provincepc | P-Code for the province. (Place Code) || integrity | Changes made to the ward boundary as in year 2008|

# 8.3.4 Location of Study Sites

This sub-section gives the actual location of Siyaso, Gazaland and the Complex in Harare province. Their boundaries are shown as polygons. An investigation into the spatial location of these sites gives the map in Figure 8.4.



Figure 8.4: Sampling Windows Studied (Adapted from https://zimgeospatial.github.io/)

The three study sites are shown by polygons bounded is and shaded in blue. The interactive map provides for zooming in and out and the resultant maps of the three sites under study are indicated in various Figures in this research (Figures 3.4, 5.7, 8.4, 8.5, 8.6 and 8.7).
# **8.4 Demographic Data**

This entity gives a detailed breakdown of the aggregate Zimbabwean population per province for the years 1982, 1992, 2002 and 2012. The reported findings follow that Zimbabwe runs a census after every ten years. The first census after independence in 1980 was undertaken in 1982. For 2012 census results, the data is categorised according to male and female as displayed in Table 8.2. Table 8.3 provides the descriptive summary of demographic data.

Table 8.2: Census Results (https://zimgeospatial.github.io/)

Field Name	Explanation
Provincepc	P-Code for the Province. (Place Code)
Province	Name of the province.
pop_1982	Total population for that province in 1982.
pop_1992	Total population for that province in 1992.
pop_2002	Total population for that province in 2002.
pop_2012	Total population for that province in 2012.
m_pop_2012	Total Male population for that ward in 2012.
f_pop_2012	Total Female population for that ward in 2012.

Table 8.3: Descriptive Data on Demography (https://zimgeospatial.github.io/)

Field Name	Explanation
Wardpc	P-Code for the ward. (Place Code)
Wardname	The name of the ward which is actually a number.
Province	The name of the province.
District	The name of the district.
alt_name	Alternative name for the district.
Districtpc	P-Code for the district. (Place Code)
pop_2012	Total population for that ward in 2012.
f_pop_2012	Total Female population for that ward in 2012.
m_pop_2012	Total Male population for that ward in 2012.
Households	Total number of households in that ward.

Data was de-normalised for districts and wards to enable faster querying of data and to reduce complexity of the database. It is crucial to observe that demographic data of individual sites can be accessed from the database upon querying. Demographic data for individual manufacturers can be compared with ward, district and province data with the view of determining the level of informality in specific wards, district and provinces in related to total population. For individual manufacturers, variables which may be viewed upon querying the data model include age, gender orientation, marital status, residence of respondents.

# 8.5 Specific Data about Informal Manufacturers in Harare

This section of the data model gives specific user data needs upon making an inquiry. For example, pins shown in Figures 8.5, 8.6 and 8.7 show individual manufacturing sites in Gazaland, the Complex and Siyaso respectively. Upon clicking a pin, the data model will give the user an option to view type of products produced, type of tools used during production, type of raw materials used, type of incorporation (company, partnership or sole entrepreneur) and employees engaged by that manufacturing firm. Psychographics of manufacturers view of principles of town planning and the proposal to tax the informal trade sector can also be queried upon clicking a pin. Since one pin can be used to access data relating several variables, individual entities are related by foreign keys.



Figure 8.5: Data about Manufacturers working in Gazaland (Study Findings, 2017 on Google Earth Extract)



Figure 8.6: Data about Manufacturers working in Siyaso (Study Findings, 2017 on Google Earth Extract)



Figure 8.7: Data about Manufacturers working in the Complex (Study Findings, 2017 on Google Earth Extract)

Figures 8.5, 8.6 and 8.7 show the intensity of manufacturers in three sampling windows studied. It must be observed that all pins outside sampling windows, mathematically represent outliers, but they serve as indicators of successful clusters. These outliers also indicate the magnitude to which zoning laws are being contravened. Some manufacturers are at work in the residential area as evidenced by their working places which are in the midst of blocks of residential stands (such issues are deliberated in detailed in the following chapter). Evidence of clustering explains intra—interaction of manufacturers in home industries. It is also critical to highlight those manufacturers in different study sites also interact through inter—interaction as displayed in Figure 8.8.



Figure 8.8: Intra and Inter–Interaction of Manufacturers in Space (Study Findings, 2017 on Google Earth Extract)

The heat map in Figure 8.8 suggests that manufacturers who work in different home industries interact and network in different business ventures. For example, manufacturers working in Gazaland and the Complex exchange services and goods as they are walking distances away from each other. Some furniture traders in the complex get metal frames of their products fixed in Gazaland and they then incorporate timber needed to have with finished products. These two home industries are both accessible from Willowvale road, a major road which links these sampling windows with the CBD. The darker the colour gets, the higher the concentration of

manufacturers. Light colours indicate uncontrolled growth of home industries leading to outliers and inherent inseparability of Gazaland and the Complex. Manufacturers in both Gazaland and the Complex also trade with manufacturers working in Siyaso. For manufacturers who do not drive, they only board one commuter omnibus (public transport) to Siyaso to buy raw supplies and semi-finished products for further processing.

# 8.6 Metadata and Privacy

Metadata is mostly talk about as the data around data. It defines the organisation of the database and contains the information collected to provide context to the database (Rob and Coronel, 2009). The metadata collected by the system includes information on data modification date, logs on data access dates and times, the usernames and in some instances Internet Protocol (IP) addresses of persons who would have accessed data. It also widens to include other types of information which helps system administrators get better insights into who is accessing the system, at what times and how are they behaving once they are recorded into the system. Metadata helps system administrators in monitoring and securing the database especially due to the exponential number of bouts of trajectories since it implements an open API.

The high level of control and data collection capabilities of the structure brings about privacy concerns by both system users and collaborators as their IP addresses among other data will be recorded and stored. Against this background, a system policy will be put in place to stop private information such as usernames, emails which will enable users to share data sets in anonymity.

## 8.7 Open Application Programming Interface (API)

The proposed data model contains huge amounts of varied data on informal trading in Harare.

Being a data bank, users will only be given privileges to access information relevant to their needs. As such, the data model has been structured to accommodate four varied levels of users referred to herein as view, add, edit and delete privileges. These four levels of access have been summed up diagrammatically in Figure 8.9.



Figure 8.9: Database Privilege 'Onion' (Researcher's Analysis, 2017)

The Database Privileges 'Onion' (DPO) has been structured using the inside-outside approach. Level 1 operator may only view or read contents of the database. This privilege is available to members of the civic community with interest in knowing issues surrounding urban informality. Overall viewing contents of the database, Level 2 users can add some data to existing data. Such users have been called collaborators and contributors. Level 2 users are, mainly, researchers in urban informality (individuals, private organisations and government arms included). At Level 3, there are users who can control the database. They have the privilege to reorder contents of the database without deleting existing contents. Users with this privilege include government bodies, institutions of finance and local authorities. The highest access level is Level 4 which gives users the privilege to delete selected contents of the database contents. Only administrators of the database can delete some data from the database.

It is important to point out that levels of access are cumulative in nature, that is, a user at a high level has privileges for all levels below their level. For example, a Level 2 user possesses all privileges of a Level 1 user, and a Level 3 user possesses all privileges of Levels 1 and 2 users, and so on. All users will be given user names and a default password (which they can change). The user names will be dependent on access level of the user.

# 8.8 Chapter Summary

This chapter has provided an indicative picture of the database with much emphasis on how different data sets in the database are related to each other. Issues related to user rights and policies on privacy have been discussed. Since the database is scalable, all users from Levels 2, 3 and 4 can add some data to the database. The data model proposed in this research only gives data on informal manufacturing. Therefore, there is an opportunity to incorporate data on other informal sector variants in the tertiary, secondary and primary production levels. Furthermore, urban informality in some parts of Zimbabwe, and elsewhere can be added.

It is essential to highlight that this data model has been structured against the background that the informal trade sector is labyrinth in nature (as discussed in the review chapter). Therefore, it is imperative to view study results through the lens of laws of planning because planning law conditions and facilitates all activities in space. The next chapter gives the consequences of the study outcomes to planning law.

### **CHAPTER NINE**

# THE NEXUS BETWEEN INFORMAL MANUFACTURING AND PLANNING LAW

# 9.1 Introduction

The core of this research stated in Section 1.3 focuses on modelling a geo-database of the informal trading sector in Harare and analyse assembled data of manufacturers in respect of their citizenry obligations such as paying tax and abiding by constitutional, planning, and environmental legislation. This concern has been justified where most accessible studies on urban informality are fragmented in relation to theoretical and disciplinarian perspectives. Likewise, there is no consideration to a comprehensive analysis of the informal trade sector. Furthermore, existing studies that analysed behaviour and psychographics of informal traders are largely descriptive and non-spatial and thus are suspect on counts of sampling, accuracy and reliability. In an inquisitive attempt to fill this knowledge gap, previous chapters assembled operational, compositional, psychographic, behavioural, and demographic data about informal trade manufacturers in Harare, and structured these outcomes into a data model.

Overwhelming evidence has shown the huge force of urban informality and the way it has become a pseudo-permanent phenomenon. The concern of this segment is to view the assembled data through the lens of laws of planning in Zimbabwe. It provides a prescriptive and penetrative analysis of planning law in the evolving face of urban informality. Planning law is defined in Section 2.8.1 as a substantive branch of law which regulates land use with the view of encouraging welfare, safety and health of society as a whole and maintenance of the environment. Major issues observed and reported in studied home industries which have a greater inclination towards planning law are summarised in Figure 9.1.



Figure 9.1: Lead-in Summary of Observed and Reported Planning Law Issues (Study Findings, 2017)

Figure 9.1 is a diagrammatic lead—in summary of concerns deliberated in this chapter. As shall be explained in detail in this chapter, some manufacturing activities in sampling windows take place along carriageways, roadsides and river banks. Such activities have a huge bearing on public health, convenience of other road users and amenities of the locale. Furthermore, some observed manufacturing activities are dotted around the sampling windows, but outside the designated boundaries. Some manufacturers subdivide their properties without the consent of the LPA with the view of sharing space. All issues summed up in Figure 9.1 collectively threaten the realisation of town planning goals. Finer details on the implications of observed and reported realities in home industries form the subject of this chapter

### 9.2 Premise and Organisation of this Chapter

As alluded to earlier in the review chapter, urban informality is a broad subject which can be

viewed through economic, sociological, geographical, planning, business and law lenses, among other perspectives. One of the fundamental objectives of this thesis is to mirror informal manufacturing activities on planning law with the view of ascertaining the efficiency of law and the degree of departure from the provisions of law. In one of the interviews with a High Court judge, who is a former president of the Administrative Court, the researcher was advised to directly quote statutes on point of law and then analyse them on point of fact. In her own words, she said:

> I strongly encourage you quote the exact provisions of statutes on point of law because paraphrasing has risk of misleading readers whenever you misinterpret the law. Even in courts, lawyers, prosecutors and judges first quote relevant sections from statutes and then apply them to specific cases. This gives interested parties a real feel of law. In your case, tell us what the law says before applying it to what was observed and reported.

Following this advice by an expert in planning law, all points of law in this chapter are based on direct quotations of relevant sections from statutes and then applied to specific cases. Relevant sections from the RTCPA [Chapter 29:12], Administrative Court Act (ACA) [Chapter 7:09], Roads Act (RA) [Chapter 13:18], EMA<sub>1</sub> [Chapter 20:27], SI 216 of 1994, and the New Constitution of Zimbabwe are used in providing a real feel of the law before application. In adjudicating town planning matters, judges work with assessors as provided for by the Section 6 of the ACA [Chapter 7:09]. For this reason, one key informant (a High Court Judge, who presided over town planning cases between 2004 and 2010) referred the researcher to five assessors to help in assessing and interpreting observed and reported issues on point of law. Two of the assessors advised use of case of law in analysing issues with a greater inclination to planning law. In his own words, one of the assessors said: Every game has its own rules, formal and informal. In context of law, principles of certainty, justice and uniformity are some of the rules. To have a strong footing in debating an issue, use case law and legal language on point of fact. Case law gives you experiences elsewhere on similar, but not identical cases. As such, case law must be contextualised to specific cases on point of fact.

This advice was also seriously considered in argumentation. For example, case law on air and water pollution are used in this chapter to argue how informal manufacturers are violating town planning principles such as health, order, amenity and convenience. Selected cases on issues similar to the ones summarised in Figure 9.1 are used for this purpose. There was also general advisory consensus among all the town planning experts that the researcher obtain and utilise primary evidence including pictures and mapped data in supporting or undercutting arguments. As such, this chapter is based on direct quotes from statutes on point of law, contextual application of case law on point of fact, picture and mapping narrations in the analysis of the relationship between town planning and informal manufacturing in Harare.

Section 9.3 analyses issue inclined to land parcelling and compartmentalisation practices in home industries. Such practices have a bearing on master and local planning chatted in Section 9.4. Sections 9.5, 9.6 and 9.7 analyse the implications of these practices in home industries to development control, pollution of water and environmental rights respectively. Provisions for civic involvement are explained in Section 9.8, and Section 9.9 provides a panoramic overview of the association between informal trading and planning law paving way for the chapter summary.

# 9.3 Land Parcelling and Compartmentalisation Practices

Study results showed that a lot of manufacturers secure operating space through family,

friendship and political ties. New manufacturers join their friends or family members who parcel out pieces of land from their stands or plots. Alternatively, they are allocated operating space by political leaders. Lessees remit rentals to individuals who would have allocated them operating space. This observed and reported reality leads to at least two manufacturers sharing a stand designated to one manufacturer. Section 39(1) of the RTCPA [Chapter 29:12] states that:

- No subdivision or consolidation without permit
- (1) Subject to subsection (2), no person shall-
- (a) subdivide any property; or
- (b) ...

(c) consolidate two or more properties into one property; except in accordance with a permit granted in terms of section forty: Provided that an undivided share in any property, whether or not it is coupled with an exclusive right of occupation, shall not be regarded for the purposes of this subsection as a portion of that property.

It is important to observe that law prohibits division or merging of properties without permission of the LPA. Such practices have wider economic, health, order and amenity implications.

From a health viewpoint, over concentration of manufacturers overloads already burdened sewer facilities and other supporting infrastructure. A load that exceeds carrying capacity leads to failure of sewer infrastructure. For example, Gazaland experiences frequent bursts of sewer pipes leading to ground flow of raw grey turbid water. Manufacturers working in home industries and people residing in surrounding areas are prone to water borne maladies like cholera and typhoid. Furthermore, illegal land parcelling has resulted in mixed land uses on individual properties. An instrumental example of mixed land uses is captured in Plate 9.1.



Plate 9.1: A Case of Mixed Land Uses at Gazaland (Study Findings, 2017)

What is happening is that ancillary activities such as catering services are situated in the midst of panel beating, car services, welding, tyre services and brake moulding activities. Plate 9.1 shows a woman preparing some food for manufacturers working in surrounding properties. In the same yard, there are panel beaters and informal operators who are into tyre servicing. The net result is that dust from panel beaters lands on caterers' dishes. Some dust may contain toxic substances which are harmful to people's health if ingested.

Furthermore, rubber moulders working on the roadside of Madzindadzi road next to the panel beaters in Gazaland home industry generate massive air pollution. They burn rubber from used earthmovers' tyres with the view of moulding it into engine and gearbox mountings. This form of air pollution directly affects other manufacturers, road users and residents who stay in houses adjacent to Madzindadzi road. In providing for use groups 4, 5 and 6, SI 216 provides in

#### relevant parts as follows:

#### Group 4 – Service Industry

Any building or use which the service industrial properties carried on, or the machinery installed are such <u>as may operate without detriment to the amenity of that area</u> and are only for domestic and local day—to—day industrial requirements of persons resident in the locality concerned...where <u>not more than ten persons</u> perform work.

#### Group 5 - Warehousing and General Industrial Use

Use –

- (a) for any industrial purpose in which the process is carried on, the machinery used and the goods produced and carried to and from the premises <u>are not likely to cause</u> <u>injury to the amenities of the area</u> due to the emission of noise, vibration, smell, fumes, smoke, vapour, steam, soot, ash, dust, waste water, waste products, grit or oil; or
- (b) as a store or storage yard for anything produced in this group <u>which is not likely to</u> <u>cause injury to the amenities of the area</u> or for small scale storage of goods/items produced in Group 6; or...

#### Group 6 - Storage and Special Industrial Use

Use -

- (a) for any industrial purpose in which the process is carried on, the machinery used and the goods produced and carried to and from the premises are likely to cause injury to the amenities of the area due to the emission of noise, vibration, smell, fumes, <u>smoke</u>, vapour, steam, soot, ash, dust, <u>waste water</u>, waste products, grit or oil, and are considered to be <u>injurious health and safety</u> or are toxic; or
- (b) for any industrial use which may give rise to -
  - (i) ..
  - (ii) the emission into the atmosphere of <u>any noxious or offensive gas</u> as defined in Section 2 of the Atmospheric Pollution Prevention Act [Chapter 318]; or
  - (iii) <u>water-pollution</u>, including the discharge, other than directly into the sewage system of a local authority, of ant effluent or waste water which does not comply with the standards of quality prescribed in the Water (Effluent and Waste Water Standards) Regulations, 1977; or...storage of gases, chemicals, goods or items produced by industrial processes mentioned above or are <u>likely to harm the environment</u>.

It must be highlighted that SI 216 of 1994 only provides for manufacturing activities through

its use groups 4, 5 and 6 where these activities are less likely to injure amenities of an area due to production of noise, fumes, smoke, waste water or dust. As such, rubber moulders are contravening what is provided for by SI 216 of 1994. Plate 9.2 is a picture showing the rubber moulding process in Gazaland.



Plate 9.2: Smoke Coming from Rubber Moulding at Gazaland (Study Findings, 2017)

Rubber moulder captured in Plate 9.2 (both a and b) was directly inhaling smoke coming from the special industrial activity without a dust mask. This is a daily sight in this section of Gazaland. To the left of the manufacturer in Plate 9.2b is a piece of an old earth mover tyre used to cut rubber used in reconditioning of engine and gearbox mountings. Hot metal rods are used to drill a hole through a reconditioned mounting. This process generates huge amounts of smoke which then freely circulates in the air. This injures the general pleasantness of the area and is detrimental to both private and public health since manufacturers directly inhale this smoke every working day and the public in surrounding areas inhale the same smoke. In the same vein, this has a wider contribution to global warming. The injury to amenities in the area due to smoke needs to be scientifically measured to determine the extent of damage. Case law shows that, in town planning, the interests of the inhabitants of the area in question must be taken into consideration. For example, in *Muniswamy Gowda versus State of Karnataka Air 1998 Karnataka 281*, residents of an area adjacent to a rice mill petitioned against air pollution caused by husk and dust emissions because it was hazardous to health. The court ordered the rice mill to shut down in order to protect public health. Similarly, in the case of *Olivia Zenda Phiri versus City of Harare T9/15* the appellant who was rearing more than 880 chickens at a residential property was served with enforcement, prohibition and demolition orders in pursuance of Sections 32, 34 and 35 of the RTCPA [Chapter 29:12] by the City of Harare (the LPA) to stop the project and demolish fowl runs at her property. She appealed against the orders citing the fact that the 6 months period given to wind up operations was too short considering the nature of business. The case was decided in favour of City of Harare because continued use of the property for chicken rearing exposes neighbours to fowl smells and health risks. So, the appellant was given further 12 months to wind up, failure of which the City of Harare was given a court order to forcibly evict the appellant without any further adjudication of the matter through courts.

The cases of *Muniswamy Gowda versus State of Karnataka Air 1998 Karnataka 281* and *Olivia Zenda Phiri versus City of Harare T9/15* are a testimony that the public must be protected from profit—driven motives which expose the public to health risks. Lessons from these cases are supported in *Vainona Estate Ltd and others versus Anderson and Anderson 1960 R and N 382* at page 385 D where it is stated that "but...the overriding consideration in their determination is the general good of the neighbourhood, not the rights of individuals". Another instrumental case of the 17<sup>th</sup> century which led to the creation of environmental law is *Aldred versus Benton case of 1610*. Benton had created a pigsty close to Aldred's property and Aldred claimed that the unpleasant smell from the pigsty made his home unliveable. The court ruled that the olfactic

displeasing pigsty deprived Aldred of his personal dignity and was a violation of his rights. As such, industrial activities that are injurious to public health and the environment must be prohibited.

Economically, lessors are enjoying revenue in the form of rent and depriving the City of Harare of potential revenue. Land compartmentalisation practices in home industries are only benefiting individuals who are assuming role of lessors. In this case, if the tax measure is introduced, the lessees are likely averting to contribute to the fiscus since they are unrecognised as lawful occupiers of such land parcels thereby depriving the revenue authorities of much needed revenue.

Apart from over concentration in designated stands in home industries, some manufactures are dotted along roadsides, open spaces and boundaries of home industries. This denotes growth of successful clusters (Porter, 1990). However, uncontrolled growth inconveniences other road consumers and the public. Road shoulders in all study sites are littered by manufacturers and retailers who in turn force pedestrians to walk along carriageways and subsequently disturb the smooth movement of vehicular traffic. One of the main aims of the RTCPA [Chapter 29:12] is to support convenience and safety of the public. According to law, it is not permissible because it advances personal interests at the expense of public interests as explained in the case of *Vainona Estate Ltd and others versus Anderson and Anderson 1960 R and N 382*.

# 9.4 Implications on Master and Local Planning

Section of 11(1) of the RTCPA [Chapter 29:12] deals with powers of LPA to implement a plan and it reads as follows:

Powers of local planning authority to implement plan or scheme (1) Subject to any limitations imposed by this Act, a local planning authority shall be empowered to do anything which is necessary to implement an operative master plan or local plan or an approved scheme.

This section empowers the LPA to do anything that is provided for by the Act to operationalize an existing master or local plan. This provision seriously questions the effectiveness of the planning law in Zimbabwe. Manufacturing undertakings along roadsides, carriage ways and on open spaces are not permissible by law. Considering that manufacturing activities in Harare and elsewhere are pseudo-permanent activities, it implies operative master and local plans have been changed by the huge force of urban informality. From an aesthetic viewpoint, the contrast in height of buildings is an eye sore as displayed in Plate 9.3.



Plate 9.3: An Example of Subdivision of Properties at Gazaland (Study Findings, 2017)

There is an outbuilding to the right of the picture. This outbuilding is constructed in line with

a main building. Such an outbuilding is not permissible at law since it is sitting on building lines and is moreover a sub-standard building without supporting building plans. This small outbuilding is a brake sales shop. Behind this is a brake moulding oven where they rebound brake shoes and pads and then display them for sale in the shop. This development is common in all home industries, particularly at Gazaland where property owners compartmentalize their properties with no approval from the LPA. They then amass rentals from tenants.

Such unapproved changes on the operative original and local plans have economic, health, order and convenience implications discussed in Section 9.3. Probable action that the LPA can take includes issuing a warning, or a Prohibition Order (PO) in accordance with Section 34, or an Enforcement Order (EO) in pursuance of Section 32 of the RTCPA [Chapter 29:12]. The LPA can also remove, demolish or discontinue targeted activities in accordance with Section 35(1) after following what is provided for by Section 35(2) of the same Act. *Olivia Zenda Phiri versus City of Harare T9/15* provides a practical example where an appellant was served with three orders for one case as explained in the preceding section of this chapter. Alternatively, the LPA can advise all property owners who have changed the intended use of their properties without their authority to regularise such changes as provided for by Section 27 of the RTCPA [Chapter 29:12] which reads:

Where any development has been <u>carried out in contravention</u> of section twenty-four <u>an</u> <u>application may be made</u> in terms of section twenty-six in respect of that development and the local planning authority shall deal with that application in terms of that section but any permit granted thereunder shall take effect from the date on which the buildings were constructed, the operations were carried out or the use was instituted, as the case may be.

Regularisation of existing developments is more ideal if there are very few cases involved. For instrumental cases such as urban informality which is growing at an unprecedented rate, it will

be very difficult to regulate activities in question because of their large volume. Instead, the RTCPA [Chapter 29:12], through its Section 13(1)(b) provides:

...before altering or replacing any master plan or local plan, <u>undertake</u>, <u>if it thinks fit</u>, <u>a</u> <u>fresh study of the planning area</u> or any part thereof or of a neighbouring area, examining the matters referred to in paragraph (a); and...

Applying this provision to the gigantic force of urban informality, it is sensible to undertake a fresh research of the planning area to determine the magnitude of informality (in this case) and consider redeveloping the area to accommodate the growing population. Results of the current study partly serve that purpose because they give an accurate location of all manufacturers in studied home industries. Accurate maps of current spatial distribution of informal manufacturers can be overlaid on operative master and local plans to determine the level of contravention, and make a knowledgeable decision and subsequently inform action.

### 9.5 Wake Up to the Dawn of Questionable Enforcement

The RTCPA [Chapter 29:12], Section 24 provides for parameters and practices of development control in Zimbabwe. Specifically, Sections 24(1) provides as follows:

Unless permitted in terms of a development order and subject to this Act and any such development order, no person shall carry out any development...

Despite the clarity of law on how development control should be exercised, the sum of manufacturers working in undesignated sites is very large. The last main enforcement of planning law was the OM of 2005 which gave rise to the demolition and removal of all manufacturers working along road shoulders and in open spaces (Tibaijuka, 2005; William, 2006). A blanket enforcement order was issued in accordance with Section 32(6) since it was

affecting many people including those doing non-manufacturing activities. After OM, activities not permissible by law hibernated but later resurfaced.

An instrumental case at Gazaland is the carriage way, Madzindadzi Road, which has been invaded and privatised by panel beaters and car mechanics. Several manufacturers reported that this road has been closed in the last 7 years and is blocked by old vehicles and metal ramp ups as indicated in Plates 9.4 and 9.5.



Plate 9.4: Panel Beaters Working along Madzindadzi Road (Study Findings, 2015)

Plate 9.4 is a picture showing one end of Madzindadzi Road that has since been unofficially closed by panel beaters who use that part of the road as their working site. In the centre of the road are old vehicles parked blocking the carriage way. These old vehicles are used as warehouses for tools and raw materials by the manufacturers. To the right are cabins made of wood and roofed using corrugated roofing sheets. These cabins are situated along the roadside of Madzindadzi Road and are used as retailing car accessories and service kits shops. Plate 9.5

shows the last part of Madzindadzi Road used by gas welders as a working site.



Plate 9.5: Gas Welders Working along Madzindadzi Road (Study Findings, 2015)

To the left foot of Plate 9.5 is a heap of scrap metal, some used as lockers for tools by gas welders. The scrap metal is layered on road shoulders of Madzindadzi Road. To the right back of the image are cars being worked on, signifying work in progress. For example, a silver car is on a ramp up and two gas welders are working on the underlying suspension or exhaust of the car. Next to the car on a ramp up are gas cylinders made use of in welding operations. To the right front of the image are metal lockers used to lock some tools by gas welders.

These cases explained in Plates 9.4 and 9.5 present themselves as a huge inconvenience to other road beneficiaries since they are forced to use alternative routes because this road has been totally blocked. Section 48 (1) of the RA [Chapter 13:18] reads:

Subject to subsection (2) no person shall, without the written permission of the road authority concerned or contrary to the terms and conditions of such written permission, carry on any trade or expose, offer or <u>manufacture</u> for sale any goods on a road or in any area <u>alongside a road within a distance of sixty metres</u> from the boundary of a road or in any area within five hundred metres from the point of intersection of any two roads.

Manufacturing alongside a road within sixty metres, except for when a written consent by the road authority is granted, is a gross violation of this section. Section 47(1) of the same act prohibits unlawful closure of a road or part of a road. It reads as follows:

Offences with respect to diversion, closure, obstruction, encroachment and damage of roads (1) Any person who diverts or <u>closes any road</u> except in accordance with the procedure provided under this Act for such diversion or closure <u>shall be guilty of an offence</u>.

Several manufacturers dotted along road sides, some to the extent of permanently closing roads are contravening Sections 47(1) and 48(1) of the RA [Chapter 13:18]. The LPA is empowered in terms of Section 11(1) of the RTCPA [Chapter 29:12] to do anything within their means to operationalise existing master and local plans as quoted earlier in this chapter. Furthermore, Section 48(3) of the RA [Chapter 13:18] reads:

Any person who contravenes this section <u>shall be guilty of an offence</u> and <u>liable to a</u> <u>fine not exceeding level eight</u> or to imprisonment not exceeding two years or to both such fine and such imprisonment.

Both roadside and carriageway manufacturing are prohibited at law. The law is very clear on what must be done to resolve these anomalies. Despite this clarity, such irregularities are pseudo-permanent. The fact is that some of these developments have been in state for at least 7 years and the authority seem to be unaware of these contraventions. If they are unaware, it implies the enforcement officers are not doing their job as they are anticipated to frequently

inspect their area of jurisdiction and note such like activities, and take appropriate action (issue a warning, PO, EO, or demolish, for example) as provided for in the RTCPA [Chapter 29:12] and its allied acts.

Upon making an inquiry into questionability of the enforcement of planning control, three issues where brought to light. Firstly, the 'enforcement officers' to 'enforceable cases' ratio is too huge to imagine. Only 20 enforcement officers are expected to monitor all the three districts (in terms of development control) of Harare. These are namely; Western, Eastern and Central district as shown in Figure 9.2.



Figure 9.2: Development Control Districts in Harare (Adapted from Google Earth, 2018)

This study is based on 2 study sites purposively selected from the Western district and 1 from the Central district. A total of 642 manufacturers from these sampling windows participated in the study giving a ratio of 1 enforcement officer to 32 cases. If other home industries not captured in this study and other land uses (residential, commercial, heavy and light industrial) are factored in, the ratio further goes up making it difficult for the enforcement office to carry out their duties effectively. This revealed truth is supported by findings of one study on enforcement of planning control which revealed that there a very few enforcement officers who are not well resourced (for example, they do not have cars) to monitor greater Harare (Mazongonda and Muromo, 2011).

Secondly, there is centralisation of enforcement of planning control. The enforcement department of the City of Harare is in the CBD of Harare, which is in the Central district in terms of development control. Considering that there are few enforcement officers who are constrained by general lack of resources such as cars to carry out their duties, they end up concentrating on monitoring neighbourhoods that are easy to access. It would be more effective if the enforcement of planning control is decentralised so that each administrative district has its own enforcement officers to monitor that district. For example, Glen View district should have its own officers to monitor Glen View in its entirety, and same applies to Highfield and Mbare, and other administrative districts. Though this move will burden the City of Harare in terms of administrative costs, it will enable ease of development control and realisation of town planning goals.

Thirdly, if they are aware, then the enforcement officers probably have 'greased hands' and are personally benefiting from such activities and in turn keep a blind eye on such developments. Probably, these activities could be a consequence of deregulation where politicians deliberately dilute the purpose of enforcement for their personal gains. Deliberate deregulation and unmapping is a strategy used by politicians to lengthen and strengthen their political tenure as explained in Section 2.6 (Yiftachel, 2009; Roy, 2009).

Ultimately, the home industries are growing beyond their boundary fences. This is evidenced by manufacturers dotted around home industries. Some work from open spaces, some in front and backyards of residential stands surrounding home industries. From an economic viewpoint, such a development denotes growth of successful clusters (Mazongonda and Chirisa, 2018). From the viewpoint of planning, such developments are subject to enforcement (Mazongonda and Muromo, 2011). Figure 9.3 is a visual aid showing growth of home industries beyond their boundaries.



Figure 9.3: Manufacturers Dotted around the Complex (Study Findings, 2017 on Google Earth Extract)

The boundary fence of the Complex is shown by the polygon in blue. Any manufacturing activity outside that polygon denotes uncontrolled growth. SI 216 of 1994 only provides for manufacturing activities within home industries in residential areas. For example, the Complex, Gazaland and Siyaso are all in residential areas of Glen View, Highfield and Mbare respectively. This implies that manufacturing undertakings in residential areas, but outside the boundaries of home industries are 'ultra vires'. This calls for enforcement by the LPA to contain such developments because people are anticipated to comply with law.

# 9.6 Implications of Riverside Manufacturing

The design manual provides minimum distance from a water course or stream in which development should take place. This is meant to contain challenges of pollution of water and river siltation. SI 216 of 1994 through its Use Group 6 (d)(v) reads:

... <u>water-pollution</u>, including the discharge, other than directly into the sewage system of a local authority, of effluent or waste water which does not comply with the standards of quality prescribed in the Water (Effluent and Waste Water Standards) Regulations, 1977 ... are <u>likely to harm the environment</u>.

Applying it to this case, discharge of effluent from manufacturing processes directly into water bodies is likely to negatively impact on the environment. This section drives to avoid instances of water–borne diseases such as typhoid and cholera. As such, it would be prudent if effluent is discharged into sewage systems. Some disturbing revelations were noted at Siyaso where manufacturers of detergents, thinners, varnish and glue work in the river banks of Mukuvisi as indicated in Figure 9.4.



Figure 9.4: Riverbank Manufacturing in Siyaso (Study Findings, 2017 on Google Earth Extract)

Most manufacturers at Siyaso are operating at sites that are less than 10 metres from the river yet they are expected, at law, to be at least 30 metres from the river as described in Section 2.8.3 (GoZ, 2004). Of particular concern, are a detergent manufacturer and manufacturer of thinners, varnish and glue who are approximately 5.4 metres and 7 metres from Mukuvisi River. Both manufacturers use water from Mukuvisi River as an input into their production processes and release the effluent into that river again. Section 57(1) of the Environmental Management Act (EMA<sub>1</sub>) [Chapter 20:27] prohibits discharge of pollutants into aquatic environment. It provides as follows:

Any person, who discharges or applies any poison or toxic, noxious or obstructing matter, radioactive waste or <u>other pollutants</u> or permits any person to dump or discharge such matter <u>into the aquatic environment</u> in contravention of water pollution control standards shall be guilty of an offence and liable for imprisonment for a period not exceeding five years, or to a fine not exceeding five million dollars, or to both such fine and such imprisonment.

This disturbing observed reality has wider implications on the environment. It affects the aquatic life, quality of water and cost of purifying water since this river feeds into Lake Chivero, one of the main sources of consumption water in Harare. In the *AIR 1988 SC 1037* case where water pollution was caused by tanneries discharging their industrial effluent in the Gannga ner Kanpur River, the Supreme Court of India held that:

We are therefore <u>issuing the directions for the closure</u> of those tanneries which have failed to take minimum steps required for the primary treatment of industrial effluent. We are conscious that closure of tanneries may bring unemployment, loss of revenue, but <u>life</u>, health and ecology have greater importance to the people.

Contextualising this ruling to the case of riverside manufacturing along banks of Mukuvisi River, activities polluting the river must be stopped and relocated to appropriate sites.

## 9.7 A Case for Environmental Rights

Issues deliberated in previous parts of this chapter have a huge bearing on environmental rights enshrined in Section 73 of the New Constitution of Zimbabwe. Perhaps, reciting the first portion of Section 73 of the New Constitution of Zimbabwe sets the tone for this section.

Every person has the right--(a) to an environment that is <u>not harmful to their health</u> or well-being; and (b) to have <u>the environment protected</u> for the use of present and future generations, <u>through reasonable legislative</u> and other measures that--(i) <u>prevent pollution</u> and ecological degradation; (ii) promote conservation; and (iii) secure ecologically sustainable development and function of natural resources while promoting social and economic development.

The spirit and drive of the supreme law of Zimbabwe is to encourage liveable environs devoid of noise, pollution, harm and degradation of the environment. This right can be realised if and only if it is enforced. Sustainable planning processes are important ingredients in achieving Sustainable Development Goals (SDGs), particularly SDGs 3, 6, 8, 11, and 12. Table 9.1 gives a snapshot of the aforementioned SDGs and alludes to how each may relate with urban informality, planning law and the politics of space.

The pertinence of sustainable planning processes is in sync with SDG 11 which places specific emphasis on promoting and ensuring that cities are sustainable, viable and ecological. Realisation of SDG 11 partly facilitates the ease of realisation of the other goals on well-being and good health (SDG 3) and right to safe water and sanitation (SDG 6).

Sustainable Development Goal	Comment
SDG 3: Good health and well- being	Liveable environments that are devoid of noise, harm and pollution should be created to minimise dangers to health of the people.
SDG 6: Clean water and sanitation	Planning processes should condition and enable the availability of clean water to reduce chances of having water borne diseases.
SDG 8: Decent work and economic growth	It is essential that conducive environments that create economic opportunities for its citizens be conjured so that people consume and save.
SDG 11: Sustainable cities and communities	A planning system that balances between the economy (prosperity), society (equity) and environment (ecology) is a must have, to sustain both present and future generations.
SDG 12: Responsible production and consumption	The citizenry, particularly the ones that are into manufacturing should be taught to be good agents of the environment. Planning law should set parameters for good manufacturing practices.

Table 9.1: An Outline of Selected SDGs and their effects

Of particular note, riverside manufacturing observed along the river banks of Mukuvisi River presents itself as a divergent from the environmental rights. Discharge of industrial effluent into the river is testimony of bad stewardship. Stewardship of the environs entails protecting and sustaining the environment and its endowed assets. In as much as informal manufacturing is an affirmative attempt towards providing decent work as desired by SDG 8, it has wider effects on the environment. Negative externalities generated by informal manufacturing not only have geographically concentrated impacts because polluted water feeds into Harare's main source of water, Lake Chivero. Induced toxicity is detrimental to both human and aquatic life.

Also acting against the assertion of environmental rights as put forward by the New Constitution of Zimbabwe are practices by rubber moulders working in Gazaland home industry. As discussed in this chapter, apart from direct negative impacts to the health of manufacturers exemplified in Figure 9.2, air pollution partly aids global warming. It is critical

to highlight that observed realities of air and water pollution are a true image of abuse of human rights by informal manufacturers working in home industries in Harare.

Despite the clarity of the SI 216 of 1994 in providing for manufacturing activities, the departure from that provision is quite evident. Also, Section 57 of the Environmental Management Act of 2002 stresses the need for realising environmental rights by clearly stating the prohibition of water pollution. All guilty of such wrongdoings shall be prosecuted. Overall, Section 57(2)(a) of the EMA<sub>1</sub> [Chapter 20:27] reads:

A person found guilty under subsection (1) shall, in addition to any sentence or fine imposed on him — pay the cost of the removal of any poison, toxic, noxious or obstructing matter, radioactive waste or other pollutants, including the cost of restoration of the damaged environment, which may be incurred by a government agency;

This explicitly outlines restorative measures that must be abided by polluters. In the case of *Mr. M. C. Mehta versus Union of India AIR 1987 SC 1086*, Shriram Foods and Fertilizer Industries leaked oleum gas leading to disastrous effects. In presiding over the case, the Supreme Court of India held that:

The enterprise must be held to be under an obligation to provide that the hazardous or inherently dangerous activity in which it is engaged must be conducted with the highest standards of safety and if any harm results on account of such activity, the enterprise must be absolutely liable to compensate for such harm and it should be no answer to the enterprise to say that it had taken all reasonable care and that the harm occurred without any negligence on its part.

Issues of questionable enforcement deliberated in Section 9.5 are at the centre of the urban management debate because what must be done is quite clear in different pieces of legislation.

### 9.8 Issues Relating to Public Participation: Provision for Appeal

If law is unfairly enforced, manufacturers have the room to raise their concerns to the Administrative Court for fair resolution of town planning matters. The ACA [Chapter 7:09] provide for the establishment, functions and powers of the Administrative Court. RTCPA [Chapter 29:12], Section 11(2), quoted earlier in this chapter, clearly states that anyone aggrieved by the LPA in its inquisitive attempt to operationalize existing original and local plans can approach a judge of the Administrative Court with the matter. In an interview with a High Court judge, the researcher picked that the aggrieved approach the wrong courts with such matters. The high court is not a specialised court that handles town planning matters. The jurisdiction to deal with disputes arising from the RTCPA [Chapter 29:12] lies with the Administrative Court which derives its powers from the same act. Town planning cases should be directed to the Administrative court litigators because they are specialists in that area. It was also revealed that for that and other reasons, the Administrative Court is less busy.

### 9.9 Mirroring Informal Manufacturing on Planning Law: A Conceptual Model

This part offers a theoretical model of the association between informal manufacturing and planning law. It provides a 'helicopter analytic effect', that is an overall view of issues in informal manufacturing through the lens of laws of planning in Zimbabwe. This chapter brought to light issues inclined to land parcelling, roadside, riverbank and carriage way manufacturing. The 'helicopter analytic effect' gives a zoomed, catch–all and aerial view of normative versus empirical issues on informal manufacturing observed and reported in Harare. Figure 9.5 is a theoretical model of the normative versus the empirical.





On one end, normative issues relate to evaluative standards. In this case, normativity is the phenomenon in informal manufacturing of labelling some actions as good and permissible or others as bad or impermissible. Normative issues on planning law are embedded in the RTCPA [Chapter 29:12] and its allied acts, and SIs that expand on specific issues in statutory acts. On the other side, empirical evidence takes form of observed or reported issues that which accurately corresponds to reality. In this study, all manufacturing sites were accurately mapped and examined using spatial statistics. It is crucial to highlight that the data model in the previous chapter captures all issues inclined towards town planning such that planners and interested stakeholders can use that data for analysis and decision making.

Figure 9.5 is a rough visual impression of the link between planning law and informal trading in Harare. It is a 'catch—all' diagram showing how the linkage between the main objectives set ahead of the research and how best it will be realised in context of expected and observed realities. It is crucial to restate the key aim of this research centred on developing a prototype geo—database of the informal trading sector in Harare and promoting efficiency of planning law in Zimbabwe. The link between the expected and observed realities is hinged on the legal provisions outlined in statutory acts and expanded in statutory plans and instruments.

The legal provisions of planning law on urban informality, spirit and purpose of these requirements are discussed in Section 2.8 of this thesis. Section 2.8 justifies planning intervention in any development from contemporary and historical perspectives. Several normative aspects such as scale or degree of informality, the context and location in which it should take place, institutions with interest in urban informality and political will have been captured in Chapters Two and Four. More importantly, planning law is legitimatised by its quest to promote amenity safety, order and convenience in providing services to the citizenry.

Throughout the study, many actors including, but not restricted to planners, politicians, manufacturers, government representatives and the public have been explained as some of the main stakeholders in informal manufacturing. Attention was paid to their data needs and capacities in promoting efficiency of planning law and deriving maximum value from informal manufacturing. Noted and reported in the thesis are issues inclined to land parcelling practices, carriageway, roadside and riverbank manufacturing which are all against what is provided for in laws of planning in Zimbabwe. It must be highlighted that this research also captured the predicted behavioural responses of manufacturers to the suggested tax measure. These responses have been both described and quantified with the view of having a fuller picture of likely behaviour of manufacturers before coming up with an operative tax plan that will realise the intended purpose. It is envisioned that an operative tax strategy should feed from research founded on joint efforts of various stakeholders and mapped manufacturing undertakings in space. Furthermore, the tax strategy should promote the effectiveness of planning law.

## 9.10 Chapter Summary

Chapter Nine has provided an understanding of study outcomes from a planning law viewpoint. Revealed in the chapter are issues related to subdivision of properties, implications of such practices on master plans, and issues surrounding enforcement of planning control on manufacturing activities contravening town planning laws. Indications were made on what is provided for by the RTCPA [Chapter 29:12] to handle issues raised by aggrieved parties in operationalisation of planning law. Matters deliberated in this chapter are instrumental in clarifying what is expected at law in setting the tone for the growth of an efficient tax strategy whilst promoting health, order, safety, amenity, convenience and general welfare in the process of development. The next chapter gives a synthesis of research outcomes with the view of buttressing the contribution of the current study to existing knowledge on urban informality.

### **CHAPTER TEN**

# SYNTHESIS AND SIGNIFICANCE OF STUDY FINDINGS

# **10.1 Introduction**

Preceding chapters have discussed a wide array of concerns related to informal trading with much prominence on the Zimbabwean experience. This chapter seeks to harmonise theoretical, conceptual, analytical, methodological, and empirical matters deliberated in preceding chapters. A composite analysis of this nature is essential since it conjointly discusses the research problem and how the current research has filled that gap. This chapter is inspired by sources that concur that research aims at creating knowledge (Hakim, 2000; Creswell, 2005; Bryman, 2007). As such, this chapter brings to light the significance of this research in knowledge edification.

Perhaps, restating the research problem (Section 1.2) puts this section in context. Using different strategies, informal operators enjoy free riding, evade taxes and operate in defilement of land use zoning laws (Kanbur, 2009; Keen and Kanbur, 2015). Clarion calls from various angles in literature have called for compilation of current, complete, authentic, and reliable spatial and relational data about the informal trade sector for easy tax collection, among other reasons (Shah, 2012; Sparks and Barnett, 2010; GoZ, 2014a). It can be established that most accessible studies on urban informality did not cover that gap. This thesis fits in a wider multi-disciplinary debate about the need for inclusive data on urban informality. Organisation, Section 10.2 discusses the relevance of data gathered through ethnography, followed by Section 10.3 which considers an in-depth query into the significance of spatial statistical data. Section 10.4 harmonises different data sets by showing the essence of scholarly comprehensive data that is called for in literature, and Section 10.5 provides information on the data model
and in what way it can be scaled upwards into a national database. Then, Section 10.6 envisions how different stakeholders can move data to insights, and Section 10.7 exposes some town planning issues.

#### **10.2 Significance of Ethnographic Data**

This thesis leans on critical realism philosophy discussed in Section 3.2. Critical pragmatism states that there exists a story behind what one observes. The motivating and restrictive forces of informality are beyond what meets the eye at first sight since informal trade sector activities have numerous underlying invisible threads that cannot be easily revealed unless deep analysis is considered (Shabaneh, 2008; Sparks and Barnnet, 2009). Such in-depth analysis was made possible by studying informal manufacturing during an extensive time frame of approximately four years. Considering the assertion that behaviour is not an event, but a succession of repeated actions, this study accurately captured operational, psychographic and behavioural elements of manufacturers over a lengthy period (Armitage and Conner, 2001).

Conclusions drawn following ethnographic research of the informal trading sector extended and clarified past conclusions about the informal trade sector in Zimbabwe (Chirisa, 2007; 2009; 2013; Muponda, 2012). Their scholarly contribution serves as essential ingredients in data compilation. They also provide an entry to the appreciation of urban informality in Zimbabwe because they described and explained the scope, variance, growth strides, behaviour and nurturing needed to harness maximum value from the informal trade sector. The present study revealed that specialisation, consultation, good workmanship, strong social ties and mentorship, amongst other issues are several of the untold compositional and operational elements cementing the informal trade sector. These elements serve as bonding attributes because ideas are cross pollinated between manufacturers. This study confirmed several scholarly packaged myths about the Complex, furniture manufacturing home industry. Sources concluded that most informal workers find themselves on the fringe of the laws, lack right to capital markets and new technology, lack warehousing facilities, and that they are vulnerable to all elements of weather (Luebker, 2008a; 2008b; Muponda, 2012). As has been testified by other studies, the current research of informal manufacturers from November 2012 to February 2017 has revealed that several of these myths are realities in Harare's home industries. For instance, a lot of the manufacturers lack warehousing facilities to lock in their hand tools. Peculiar about Gazaland, manufacturers use complex adaptive systems and social networks to share knowledge, tools and lock their tools at LBCS (their business associate) premises. During the rainy season, car mechanics repair cars under the shade provided by LBCS at no cost.

Compositional and operational elements explained in the thesis gave extremely rich and in-depth information characterising informal trading in Harare. This data was gathered through participant observation as a customer with the view of addressing one fundamental concern of this thesis, having authentic data about the informal trade sector. It is believed that this data is highly accurate considering that informal manufacturers were observed in their natural state and documented in the way they (manufacturers) will interpret their patterns of behaviour. Noted in Section 3.6.1 is a bunch of notes dated 14 March 2014, titled 'notes taken in a single morning in a brake moulding workshop'. These notes are unstructured and unsystematic because they captured observed realities as they transpired. This observed reality is also reinforced by the TPB discussed in Section 2.2.3 and applied in Sections 6.2 and 7.1 to explain informal manufacturers' psychographics in view of principles of town planning and to predict their behavioural reactions to the proposal to collect tax from them respectively.

Data collected through ethnography is credible on three counts of its richness, originality and extended time of study. For one thing, it is tremendously rich for the reason of its volume, variety and veracity (Section 10.4). For the other, it is original because events where noted in their state using both systematic and unsystematic and both unstructured and structured observations. Lastly, remarks were made over an approximate four—year period in three sampling windows. This enabled drawing up of solid conclusions following an informed trace of similarities, congruencies and differences in forms of behaviour.

## **10.3 Provision of Spatial Statistical Data**

Ethnography provided descriptive and explanatory data about informal trading in Harare. To make rationale and calculative predictions and decisions about informal manufacturers' psychographs in line with town principles and proposed tax measure, spatial statistical data was used. The spatial statistical strategy made use of in the current study made two major contributions of providing spatial data on one end and statistical data on the other. Firstly, it was revealed through gap analysis (in Section 2.10) that most accessible studies on urban informality used case—based reasoning approach, but they were largely non—spatial. They borrowed information from small geographical areas (case study) irrespective of their relative spatial locations.

An insightful attempt by one scholar to analyse spatial data was a little distanced from the call to generate an informal trade sector database (Gumbo, 2013). This attempt historicised and mapped the linkages between formal and informal trade sectors in Zimbabwe between the years 1981 and 2010 using the dual and holistic (all variants of informality) situational study of Harare and Bulawayo cities (Gumbo, 2013). One of the prescriptions on the use of a spatial statistical strategy is to have sampling windows small enough to allow the creation of maps

that have a good geographical resolution (Waller and Carlin, 2010). Following this prescription, the current study used a manifold situational study of three sampling windows within one city (Harare), and embedded the study on informal manufacturing only to allow for the gathering of extremely rich information. Spatial data compiled and examined using k—means clustering provided evidence of clusters within sampling windows. Details on interaction and intensity of manufacturers given by the quadrant count described features that knit and weave identified clusters together. It is envisaged that access to this reliable spatial and relational data on informality is vital for growth of operative tax strategies.

Secondly, the literature survey also showed that most accessible studies on urban informality are largely descriptive and limited in sampling. For example, the behaviour of informal trade operators has been described on several counts in literature (Sookram *et al.* 2006; Chirisa, 2007; 2009a; Yiftachel, 2009; Gumbo and Geyer, 2011; Ademola, 2012; Varley, 2013). This study enriched these insightful descriptions by quantifying and testing the building blocks of behaviour (attitude, knowledge and perception). A cascade of existing descriptive data and just assembled quantitative data about the behaviour of informal trade operators is envisioned to aid decision making.

It is crucial to highlight that inferential statistics were made use of to effect statistical prediction of manufacturers' behaviour to the suggested tax measure. Provision of such hard and replicable data can well inform revenue authorities. In addition, the current research used census blocks to exhaustively analyse all measures of analysis that is all manufacturers in three sampling blocks were studied. This provided reliable and authentic statistics about psychographic, behavioural, operational and compositional fundamentals in informal manufacturing. To this effect, use of census blocks guaranteed the generation of statistically precise results with low variance. Catch–all outcomes of this nature collected using a multiple–embedded case study strategy and spatially statistically analysed, are credible and can be generalised, replicated and rolled elsewhere.

# **10.4 Provision of Comprehensive Data**

As highlighted in Sections 2.2 and 2.5 of the review chapter, past efforts on urban informality are fragmented in accordance with theoretical and disciplinarian perspectives (Despres, 1988; Chakrabarti and Kundu, 2009; Muponda, 2012; Varley, 2013; Gumbo, 2013). One scholar succinctly summarised that "discourses about informality are proliferating everywhere — from planning practice to planning education, from the global south to the global north, and from specific disciplines to multidisciplinary ones" (Villamizar–Duarte, 2015, p. 1). This fragmentation makes it challenging to advance a coordinated database. As such, this study compiled all—inclusive data on informal manufacturing in Harare and subsequently developed geo–database in answer to the appeal made of having national informal sector databases. This study attempted to provide big data on informal trading in Harare to lay the bedrock for easy tax collection among other possible uses of the data. In this scenario, big data is used to explain data variety, data volume and data veracity.

Data variety describes a wide array of data collected, analysed, structured and placed into the data model. This includes demographic, compositional, operational, spatial, numerical, psychographic and behavioural data about informal trading in Harare. Demographic data includes population features such as gender, age, marital status, and place of habitation of manufacturers. Compositional and operational elements recorded in the database include workmanship practices, aspects of specialisation, mentorship practices, tool and knowledge sharing. The exact geo–location of manufacturers and study sites composes spatial data. The

database in question incorporated spatial point pattern (location of respondents) and shape files (study sites boundaries) which can be both rendered into geo—json format which is compatible with an assortment of GIS software. Numerical data describes all data attributes expressed quantitatively. Attitude, knowledge and insight of informal manufacturers in line with town planning principles and proposal to tax the informal trade sector constitute psychographic data. These psychographic elements were considered as building blocks of behavioural responses of manufacturers to the suggested tax measure. In the database, behavioural data was both described and quantified.

Complementary to data variety is data volume. This describes the database's ability to store and retain huge amounts of data effectively without compromising on the integrity of the data. Considering variety of data integrated into the database, it is amply clear that large quantities of varied data were gathered and analysed. Furthermore, the idea of census blocks was used to study all manufacturers from three different study sites. There exists a possibility of expanding the database to incorporate other study sites and variables throughout the country and beyond regardless of data variations, volume or sources.

Data veracity refers to the validity of the collected data. In this case, veracity of the data is best justified by census blocks made use of to document all manufacturers in sampling windows. This strategy eradicates sampling bias and possible sampling errors. Moreover, provision of spatial location of measures of analysis speaks loudly on credibility of study results because the same study can be imitated and produce results with very low variance. Further cementing authenticity of data, is the protracted time of study. It is easy to study, structure and model forms of behaviour for a prolonged period since behaviour is not an event, but a process.

### **10.5 Scalability of the Data Model**

To ensure informal sector accountability and easy tax collection, the growth of national informal sector databases has been recommended (Sparks and Barnet, 2010). Resonating with a similar message, the GoZ made the same call having realised that the informal trade sector in Zimbabwe is increasingly becoming a pseudo—permanent development (GoZ, 2014a). This thesis is a response to this call, focusing on developing a prototype geo—database of the informal trading sector in Harare, Zimbabwe. Only given in this model is a rough visual impression of a national informal sector database. To transform this database model to a nationwide database, the same data or such like data must be collected from other sites in Harare and elsewhere in Zimbabwe. It is crucial to highlight that the existing database model is limited to informal manufacturing only. As such, other variants of the informal trade sector such as vending, retailing, among others should be taken on board.

To provide for such issues, the current model was designed using Java Script Object Notation (JSON) string. JSON is an elastic design that is founded on an expansive approach to incorporate as much data as possible into an existing database. It uses the elasticity of the set notation denoted by { }. This flexible schema enables the database model to store heterogeneous and/or unstructured data of any form (be it textual, numerical, spatial, pictorial and graphical data). This implies that, should there be need to add other geographical locations and other attributes not studied in this research (for example, level of income of operators), there is chance to add such without limit. It is worth noting that the adopted design gives different privileges to different stakeholders. Some can only view (read) the database, some can add (write), some can edit, whilst those with main user privileges (system administrators) can delete information from the database. In as far as it can be determined, this database model is one of its kind in Zimbabwe following the call by the Zimbabwean government to advance

an informal trade sector database in 2014 (GoZ, 2014a). It has been reasoned that a well-designed and well-managed database can help stakeholders to unlock meaningful insights (Global Finance, 2017).

### **10.6 From Data to Insights**

The obtainability of big data in its entirety along the dimensions of veracity, variety, velocity and volume does not in any way guarantee the optimum extraction of meaningful insights for a particular use case. To make sure that the data about informal trading sector is made use of to unravel hidden insights about their interaction, it is necessary for a data extraction and usage strategy. A data-driven action strategy is of paramount importance for each stakeholder who attempts to get into the database to validate its contents, audit or even to add new entries that may not have been captured before. To effectively develop an all-round data-driven action strategy that draws meaningful insights, each stakeholder must answer the following six key questions:

- Who? This question relates to the intended subjects an organisation wants to analyse.
   These differ from organisation to organisation in context;
- What? It aims to find out the exact attributes and/or relationships that an organisation needs. It is really a breakdown of formal features needed for decision making;
- Where? This question seeks to find out the spatial location (be it ward, district, or province) of the final user and the measures of analysis one is looking for. For instance, one can query about informal manufacturing activities in Manicaland.
- When? Denotes the period of occurrence. For example, one can query details about the new operators that would have joined informality in a specific year, for example, number of manufacturers who would have joined in 2020;
- Why? Seeks to find out the reason for search of certain data attributes; and

• How? – Denotes the tools to be made use of during the study

Responses to these questions bring about clarity of searching for data from the database and clarity of sections that require frequent updates. Overall, these insights can be made use to correctly predict stakeholders' responses to numerous forms of stimuli in the form of taxation, availing of better tools or proposal to move the informal industrial complex.

### **10.7 Exposition of Some Town Planning Issues**

Chapter Nine of this research unveiled some town planning issues surrounding informal trading in Harare. This is essential since planning law can be made use of to set parameters for taxation through zoning and control of developments. Issues brought to light include land parcelling and compartmentalisation practices, implications of over concentration of manufacturers in space on original and local planning, enforcement of planning control and efficiency of laws of town planning. Gazing at informal manufacturing through economic lens, brings about 'eye blinkers' to policy makers with interest in collecting tax from the informal trade sector.

Bringing to light town planning issues removes these 'eye blinkers' by exposing health, order, amenity and safety implications of over concentration in space. Addressing these civic interests promotes welfare and convenience of the public by ensuring an environment devoid of security and health threats. Moreover, corrupt tendencies by some LPA officials have been brought to light. This also aids as a good indicator that in the event that the tax measure has to be successfully implemented; such corrupt tendencies should be acted upon.

#### **10.8 Chapter Summary**

The previous literature survey has indicated that several studies have called for compilation of

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informal trade sector database ease of administration and accountability (Shabaneh, 2008; Sparks and Barnet, 2010; Dube and Chirisa, 2012; Shah, 2012; GoZ, 2014a). In Zimbabwe, specific emphasis is on compiling comprehensive data that will enable ease of tax collection (GoZ, 2014a). To date, limited researches have taken heed to this call (Chirisa, 2007; 2009b; 2012; 2013; Dube and Chirisa, 2012; Muponda, 2012; Gumbo, 2013). Such scholarly attempts are much appreciated. For example, they provide an appreciation of urban informality because they explain and describe the scope, variance; growth strides, behaviour and nurturing needed to harness maximum value from the informal trade sector. Scholarly contributions of that nature are essential ingredients in data compilation. However, existing attempts are suspect on three counts of comprehensiveness, reliability and accuracy. This study extends previous attempts by providing a comprehensive, spatial statistical investigation of informal trading in Harare, Zimbabwe. The next chapter provides conclusions, summaries and recommendations following the creation of a data model of the informal trading sector in Zimbabwe.

### **CHAPTER ELEVEN**

# CONCLUSIONS AND RECOMMENDATIONS

# **11.1 Introduction**

Since the thesis is coming to an end, it is essential to revisit the research problem, study aims and research hypotheses with the view of reflecting on what was set as task ahead of study. To this effect, this chapter gives a comprehensive summary of the research by drawing assumptions and recommendations based on study findings and their significance in relation to existing knowledge. Furthermore, this chapter lays out areas for future and further research. The discussion in this segment hinges on the main drive of the study; to compile comprehensive, spatial data on informal trading in Harare for incorporation into a prototype geo-database. The main objective of this research emanates from the outcomes of gap analysis (Section 2.10) succinctly summed up in the research problem (Section 1.2). As such, this chapter is structured to first revisit the research problem tailed by a discussion on attainment of objectives. Hypotheses set ahead of the research are revisited before drawing up recommendations and indicating areas for further research.

#### **11.2 Revisiting the Research Problem**

The research problem that this research wanted to answer was three-fold. Firstly, there is general lack of inclusive data on urban informality. Most accessible studies are fragmented in accordance with theoretical and disciplinary perspectives. Calls are being made from different sections of literature to compile national informal sector database for ease for its management. Secondly, existing studies are largely non-spatial making it challenging to make decisions without regard to relative spatial locations of informal trade operators. It is envisaged that access to accurate spatial data will help to ascertain the spatial point of informal operators

thereby making it easy to analyse their intensity and interaction in space. Lastly, most accessible studies on psychographics and behaviour of informal operators are descriptive, devoid of empirical backing and limited in sampling. Needed is quantitative data to augment and clarify some forms of behaviour noted in existing studies.

It is believed that this thesis has reflected on this three—fold research problem by providing comprehensive, spatial and quantitative data on urban informality. A scalable databank on informal manufacturing was prescribed in Chapter 8. The database incorporates demographic, spatial, psychographic, behavioural, and compositional data of informal manufacturers in Harare. The significance of such comprehensive data was discussed in Sections 10.4 and 10.5. Section 10.6 of this research also outlined how insights can be drawn from such comprehensive data.

Spatial locations of manufacturers in different sampling windows gave evidence of clusters in home industries. These clusters revealed the concentration of manufacturers in space. Their interaction within and between the identified clusters was explained using operational and compositional elements. The same interaction was then quantified to bring to light their psychographics in line with principles of town planning and the suggested tax measure. Psychographic and operative data was made use of to forecast manufacturer's behavioural reaction to the proposal to collect tax from them.

### 11.3 Discussion on Attainment of Objectives

It must be highlighted that the address to the research problem discussed in the previous section was made easy by setting seven objectives ahead of the thesis. It is believed that this study attained its objectives. The first objective was *"to review the legal, policy and institutional* 

*framework governing informal trading in Zimbabwe*". Chapter Four of this research conjointly discussed user data needs, and the legal, policy and institutional framework governing informal trading in Zimbabwe. Specifically, the study reviewed SI 216 of 1994 with the view of analysing what it provides for where informal trading is concerned. It was learnt that this instrument provides for use groups.

The second objective was "to assess the data needs of various end users (revenue authorities, local authorities, banks, micro-finance institutions)". Considering study findings, it was revealed that various stakeholders need different data sets from the database. The most commonly needed data sets include demographic, operational, compositional, psychographic, behavioural, spatial and size of the informal trade sector. It must be highlighted that all end users only need specific data combinations, and not all data sets incorporated in the database. In response to a wide range of combinational data needs by different stakeholders, a flexible needs—based database was designed to provide users with different data privileges. A DPO in Section 8.7 gives a thorough outline of privileges given to different users founded on their needs.

The third objective was "to establish the spatial and compositional features in informal manufacturing industry in Harare with the view of understanding their per-standard industrial classification, locational rationale, and their business linkages". A comprehensive mix of qualitative, quantitative and spatial data was used to address this objective. Study results showed that specialisation, good workmanship, tool and knowledge sharing, consultation, strong social ties and mentorship, among others, are a few of the untold compositional and operational elements cementing the informal manufacturing sector. Table 11.1, gives a

comprehensive brief of compositional and operational elements described in full in Chapter

Five.

Spatial and Compositional	General Description	Comments
Elements		
Aspects of Specialisation	Experts in different manufacturing	This promotes efficiency and
	lines focus on their lines of	effectiveness. Such labour division
	engagement. For example, car	permits easy completion of pressing
	mechanics at Gazaland specialise in	tasks.
	engines, brakes, suspension, cables	
	and radiators.	
<b>Consultation-Information</b>	Depending on the scenario on the	Sharing of ideas, experiences and
Flows (Jobholder versus	ground, consultation in	expertise among manufacturers
Expert)	manufacturing takes form of: seeking	ensures fruitful accomplishment of
	for advice; seeking a hand; and	tasks, whilst promoting interaction
	passing the job. These forms of	and networking among themselves.
	consultation differ in type and level of	
	responsibility, and in type and level of	
	input.	
Issues of Workmanship	Through sharing ideas and	Most of the surveyed manufacturers
	experiences, inevitably manufacturers	own a full tool kit. Overall sharing
	work together.	ideas and good workmanship enables
		them to easily share tools among
		other things.
Significance of Social Ties	One observed truth is that	Strong social relationships manifest
Cementing Relationships	manufacturers have relations that	in form of good teamwork. Working
	extend beyond working relations.	together as a team partly enables
	This unites them.	fruitful accomplishment of
		formidable tasks.
Mentorship Reality	On-the-job training is offered for free	On-the-job training provides hands-
	considering strong social ties that	on exposure to trainees as they are
	bring them together.	unprotected from practical realities
		whilst they undergo training. This
		further cement existing relationships.

Table 11.1: Summary of Key Findings on Compositional Elements (Study Findings 2015 to 2017)

The research also showed that the three sampling windows studied are good examples of successful clusters as described by the existence of manufacturers dotted around study boundaries. These manufacturers interdepend with the ones within sampling windows. Evidence buttressing success of studied sampling windows was overwhelmingly given by the

circle of influence of individual home industries which spans across the spatial extent of Harare and beyond.

The fourth objective was "to map the spatial distribution of informal manufacturing activities in Harare with the view of providing evidence for their intensity and interaction between and within clusters". Mapped data on spatial distribution of informal manufacturers provided rough visual impression of how they conglomerate in space. This data clarified descriptions in literature about the layout of informal trade sector. Interestingly, evidence of clusters with and deprived of quadrant count was also given using visual aids. This partly enabled proffer explanations on interaction and intensity and of manufacturers between and within clusters.

The fifth objective was "to understand cognitive human factors (specifically, knowledge, attitude, and perception) of informal manufacturers in respect of their citizenry obligation to abide with planning law". A sum of 44 tests was made use of to describe the linkage between psychographics of manufacturers and town planning principles. All tests revealed the existence of a very weak association between the two variables (psychographics and town planning principles) with various levels of weakness. This explained all coefficients of determination below 2%. All three psychological vignettes (attitude, knowledge and perception) used for the 44 tests demonstrated to be weak predictors of behaviours and intentions of manufacturers. This means that above 98% of the variance in manufactures psychographics and town principles is described by other factors not documented in this thesis.

The sixth objective was "to model informal manufacturers' behavioural reaction to the suggested tax ration". It is believed that this study modelled behavioural responses by manufacturers to the proposal to collect tax from them. The sentiments of manufacturers

working in Siyaso and the Complex collectively revealed that behavioural responses of manufacturers are largely shaped by politics of space. Though there are differences in levels of political influence amongst these two sites, it was learnt that politics is a major determinant factor. On the contrary, behavioural responses of manufacturers working in Gazaland are a product of strong social ties cementing manufacturers than anything.

The seventh objective was "to collate and coordinate synthesised datasets into a database model for use by different end users". An interactive database model was designed to capture a wide range of data needs by different stakeholders. The needs-based database model, designed using the JSON string, can be scaled to incorporate other variables, study sites and informal trade sector variants not documented in this thesis. Critically the database model prescribed provides stakeholders with different usage privileges. This is essential in providing users access to the data they need.

# **11.4 Revisiting Conjectural Statements**

Used as a point of entry in this thesis, are six hypotheses stated in Section 1.3.3. This section discusses the outcomes of the tests carried out to prove or disprove these hypotheses. For these two possible outcomes, discoveries were made. Where the results confirmed hypotheses, a discovery was made. For results contrary to hypotheses, a discovery was made as well.

The first hypothesis was that the "nature of products (products that are an end in themselves or those that can be used as inputs in other processes) produced in home industries do not depend on whether operators have full toolkits". Study results proved this hypothesis true for the Complex and Gazaland only. This means, for these two study sites, tool ownership does not limit production since manufacturers share tools to manufacture products that may be used as an end in themselves or may be used as input in other production processes. Contrary to other study sites, for Siyaso, types of products produced do not rely on whether a manufacturer has a full toolkit. It was learnt that the characteristic of interdependence between manufacturers working in this research site is not based on sharing tools, but on passing jobs. Manufacturers only produce goods in as far as their tools allow them and pass on semi-finished products to others for further processing.

The second hypothesis was that the "type of tools used by manufacturers do not rely on whether one owns a full toolkit". Study findings were contrary to this hypothesis. It was learnt that type of tools used rely on whether one owns a full toolkit. For all three sites, half (50.2%) of the manufacturers use a merger of power and hand tools since most products require usage of a combination when manufacturing. Because of undercapitalisation 41.4% of the manufacturers cannot afford to buy power tools in general and own full toolkits in particular. So they use hand tools only.

The third hypothesis was that "informal manufacturers' psychographics do not depend on their understanding of town planning principles". Study results suggest that there is a complex mixture of relationships between and within sites. For some relationships there is dependence, whereas for some there lacks dependence between manufacturers psychographics and town planning principles. Because of this revealed reality, it proved difficult to draw up a general conclusion amongst the two variables studied. A further inquiry was made to ascertain the level of relationship among the two variables. It was learnt that there exists a very weak relationship between manufacturer's psychographics and town planning principles. All sub–hypothesis carried out to ascertain the level of relationship gave coefficients of determination less than 2%. This implies that above 98% of the variance between psychographics and town planning

principles is described by other factors not documented in the thesis.

The fourth hypothesis was that "manufacturers' views on the suggested tax measure are independent of the psychometric test carried out". Study findings confirmed this hypothesis. As discussed in the previous paragraph, there exists a very weak association between manufacturer's psychographics and town planning principles. It was learnt that aspects such as family ties, friendship ties, acts of politics, amongst other factors, largely influence manufacturer's views on the proposal to collect tax from them. Most manufacturers at work in the Complex indicated their conditional readiness to remit tax. If the government manages to remove all intermediary activities by touts (commonly known as magombiro as discussed in Chapter Seven), then they will pay tax.

The fifth hypothesis was that "informal manufacturers' population has the same proportion as the Zimbabwean population". The fifth hypothesis was disproved. It was learnt that the population proportion of manufacturers in studied sampling windows does not fit in with the Zimbabwean population proportion. The significant percentage of manufacturers (97%) are male. This is partly described by the fact that most manufacturing activities are labour intensive. As such, very few women can bear such activities. Most women observed in home industries provide ancillary activities to manufacturing including retailing and catering services.

The sixth hypothesis was that *"manufacturers' behavioural responses are independent of geographic area of home industry"*. Results contrary to this assertion disproved the hypothesis. The behavioural responses noted in the thesis differed between study sites. For the Complex and Siyaso, the predicted resultant behaviour is a product of politics of space in home

industries. The degree of political influence was different among these two sites, with Siyaso leading the chart. On the contrary, the behavioural responses of manufacturers working in Gazaland is expounded by strong community ties between manufacturers.

# **11.5 Recommendations**

This section gives a thorough brief of recommendations to different stakeholders following discoveries made, objectives attained and the address to the research problem.

- Informal manufacturers studied portrayed a higher level of organisation. This is visible in the way they relate, network and configure their activities. This may be capitalized on by LPA in promoting spatial orderliness.
- Policies designed by government should take into account the traits of organisation amongst the manufacturers which can be nurtured, improved and carved to ensure sector accountability and spatial orderliness. The idea of inclusivity can be applied in the wake of growing urban informality. This can be worked out through inclusive design and adaptive planning which is receptive to the practical requirements of the sector.
- Building an inclusive design in decision analysis is known to be a more complicated and burdensome process. To overcome such a difficulty, the Department of Physical Planning (DPP) and LPA should use 'production level'-specific analysis to understand better the problem of growing informality. This form of analysis treats a group of businesses that have some level of similarity as a single unit. Narrowing down to specific levels of production, sub-categories can be distinctly analysed. These constitute illegal gold panning, informal urban agriculture and informal hunting (poaching) in the primary sector; informal manufacturing and housing informality in

the secondary sector; and retailing (vending), teaching, intermediary activities, and maintenance and repairs services in the tertiary sector.

- Specialisation by distinct players and workmanship should be nurtured by protagonist organisations like the Ministry of Small to Medium Scale Enterprises (MSMSEs) with the view of emphasizing their individual importance. Simultaneously, recognising the interdependence of the two without prioritising one over the other should be considered. The identified teams should remain permanent. Naturally weaved teams are mightier than teams set using some strategy from outside. To improve the performance of these teams, a sound administrative structure that embraces current practices is needed. Key players such as Mupostori should undergo training in administration. The administrative team should be located near the vicinity of home industries since the players are embedded in their industrial conurbations.
- Those engaged in car maintenance and repair services at Gazaland own and use hand tools to do diverse tasks. A lot of the studied players do not possess power tools such as grinders, drills, threading machines, among other power tools. They out-source whenever need arises. This means they incur extra expenditure which is extended on to customers. Access to power tools and electronic diagnosis machines, through the help from the MSMSs and non-governmental organisations that promote informality, will assist car mechanics to improve on efficiency thereby eliminating extra costs related to out sourcing. Forward-thinking policy formulators and other participants need to chart a new course that enables informal sector's accountability and effective revenue collection processes.
- Encouraged by the call to tax the informal trade sector and mixed responses by manufacturers to the suggested tax measure, this study highly recommends collective scaling up of planning education by all investors with the view of improving informal

manufacturer's attitude, knowledge, and perception towards planning principles. The reluctance to remit tax by some manufacturers is not justifiable. For instance, one respondent cited that he is already paying value added tax, so he cannot pay corporate tax. The point that they pay value added tax must not be an excuse for them to avert paying corporate tax. Government should engage informal manufacturers in tax education with the view of explaining the various forms of taxes and their importance. Where possible, use of technical language should be avoided in educating manufacturers, teaching must be condensed to familiar language which can be grasped by an ordinary person.

- Openness and transparency in tax—related matters must be made use of by Government officials to remove corruption allegations leveled against them especially abuse of tax funds. That is necessary if they are going to get a buy—in on tax collection from the population. If manufacturers are convinced that there is corruption associated with tax collection then they will evade taxes using some evasive strategies discussed in Section 2.5.1 or other such strategies (Keen and Kanbur 2015). This is not advantageous to government as it will continue losing lots of revenue which may be used in providing civic and merit goods.
- It is highly recommended that tax strategies consider geographic area of home industries and the gender orientation of informal traders. Policy consideration should, therefore, consider the point that the geographical area where informality is on-going influences behavioural response of informal operators. As such, attention should be paid to the socio-political and economic context in which informal operators find themselves. These recommendations followed the revelations that informal manufacturing is a domain of men since the populace of informal manufacturers does

not fit in to the Zimbabwe population proportion and that there exists politics of space in home industries.

- Also, land or property rights in home industries determine the degree of productivity. Where there is high political influence (Siyaso and Complex) manufacturers produce a measly amount of output which will probably fall under the tax threshold when one is introduced. '*Musangano*' should only facilitate providing working space and not dictate day-to-day operations of manufacturers so that manufacturers can concentrate and produce tangible output that will fall over the tax threshold.
- Informal operators need guidance from database development experts on how best they
  can upgrade existing customer database. This is important in building more interactive
  customer relationships. In the same vein, relevant authorities, including, but not
  restricted to the Ministry of Finance, Zimbabwe Revenue Authority (ZIMRA),
  micro-finance institutions and banks should develop and continuously update an
  informal sector database for easy revenue collection. They should exploit on the
  advantage that the designed database model is scalable. It provides room for updating.
- Concerning study strategies, future researchers in spatial analysis are strongly encouraged to use methods that allow them to capture accurate geographic location of measures of analysis. Many challenges that may hinder capturing of accurate locations have been highlighted in Section 3.11.4 and emphasis was pointed towards the need for technical backup throughout the data gathering process. As such, technical backup is a must have in capturing the geo—location of measures of analysis. This is essential since technical support provides instant help when challenges pop up. Furthermore, in subsequent examination of spatial data, exploration and reduction must be considered important in understanding the gathered data and discarding data that cannot be analysed spatially (that is, data without corresponding geo—location).

• In ethnography, maintaining and building value laden relationships with research participants is not an exception. Trust, openness, confidence and transparency are the fruits that will be realised when very strong relationships exist. Where strong association between a researcher and research participants exists, it is easy to undertake further research if the need arises. It is an issue of taking advantage of on existing relationships. This point to the position that research strategies are not mutually exclusive, but a hybrid of some sort may be used to gather rich data about measures of analysis. Overall, it is essential to note that research strategies, data gathering and analytic instruments should be tailor—made to tally with the slant of research objectives and issues transpiring on the ground.

### **11.6 Future and Further Research**

In terms of conceptual and spatial scope, this thesis was only limited to informal trading in three home industries in Harare. Future studies, can consider undertaking a similar study in other home industries in Harare and elsewhere. Other variants of the informal trade sector in the tertiary, secondary and primary production level should be studied and incorporated in the national informal sector database.

The study revealed that manufacturer's behavioural reactions to the suggested tax measure are shaped by political interference in their day—to—day activities. Future studies can delve into politics of space in the informal trade sector, and explore the interplay between formal and informal institutions governing informal trade sector. This is very critical in bringing to fore unknown elasticity of politics of space in the informal trade sector.

An improved understanding of politics of space in the informal sector coupled with access to

accurate financial data on informal trading and other informal trade sector variants is vital for the initiation of effective strategies. Future studies can, therefore, focus on compilation of financial data about business transactions in the informal trade sector. Now that the data structure has been designed, future studies can capitalize on the building blocks of the model to initiate an effective tax strategy.

Over and above the inquiring on issues surrounding politics of space, studying motivations behind the choice of activity and location, including risk assessments is essential in informing policy. The study revealed health hazards associated with river bank and road side manufacturing, but did not measure the degree of risk. As such, future studies can consider an in-depth study on risk assessment.

### **11.7 Chapter Summary**

This chapter has summarised and concluded all topics deliberated in this thesis. Much emphasis was placed on revisiting the research problem, research objectives and conjectural statements. This chapter also recommended what is needed to enhance the appreciation of issues surrounding informal manufacturing. These recommendations and other concerns deliberated in the thesis pointed towards the indication on future and further research. Informal and disorganised as they appear, an x-ray of the anatomy of informal manufacturers in Harare has shed light on invisible threads knitting and weaving informal operators together.

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# APPENDICES

This section provides data containing information that is relevant to the thesis but not the

main focus.
### Appendix One: Clearance Letter from the University to Carry out Research



## Appendix Two: Application to The Ministry of Finance for Clearance to Carry out the Research

5447 74<sup>th</sup> Crescent Glen View 3 Harare

17 May 2016

TO WHOM IT MAY CONCERN Ministry of Finance and Economic Development New Government Complex Corner Samora Machel and Fourth Street Harare

Dear Sir/Madam

## Re: Application for clearance from the Ministry of Finance to conduct an academic survey on informal manufacturing in Harare

The above subject refers. My name is Simbarashe Show Mazongonda, I.D number 63-1261111-F85. I am registered as a Master of Philosophy student with the University of Zimbabwe. To fulfil the requirements of the program, I am expected to do a study that meaningfully contributes in any of the following areas:

- Policy and Practice
- Methodological Issues; and
- Theory and Practice

To fulfil these requirements, I am doing a reactionary study to the call by the Minister of Finance to develop an informal sector database for ease of tax collection and ensure sector accountability. This call is largely pronounced in Sections 395 to 400 of the 2014 Mid-term Fiscal Review.

Against this background, I am kindly asking for clearance to conduct a collective case study of three informal home industries in Harare namely: Siyaso in Mbare; Gazaland in Highfield; and Complex in Glen View. The results of the survey will be used for academic purposes and will be shared with the Ministry of Finance as they contribute to policy and practice.

For further details, I attached a confirmation letter from the University of Zimbabwe.

Yours Faithfully

Simbarashe Show Mazongonda

(+263772206765)

## **Appendix Three: Response from the Ministry of Finance on Application for Clearance to Carry out the Research**

MINISTRY OF FINANCE AND ECONOMIC DEVELOPMENT Composite Building Samora Machel Avenue Telegrams: "MINFIN", Harare Telex: 22141ZW Telephone: 722101/794571 Facsimile: 792750 Harare Private Bag 7705, Causeway Zimbabwe Zimbabwe ZIMBABWE Mr. Simbarashe Show Mazongonda 5447 74<sup>th</sup> Crescent Glen View 3 Harare Dear Sir APPLICATION FOR CLEARANCE TO CONDUCT AN ACADEMIC SURVEY ON INFORMAL MANUFACTURING IN HARARE. I refer to your application requesting clearance from the Ministry of Finance to conduct an academic survey on informal manufacturing in Harare. Please be advised that the Ministry has no mandate to clear research programmes outside the Ministry of Finance and Economic Development. S.Jailos for: SECRETARY FOR FINANCE AND ECONOMIC DEVELOPMENT

## Appendix Four: Clearance Letter from the Ruling Party to Carry out the Research

ZANU PF **GLEN VIEW 4 DISTRICT** HARARE TO WHOM IT MAY CONCERN **RE: CONFIRMATION LETTER FOR CDE. SIMBARASHE SHOW MAZONGONDA** This letter serves to confirm that the above mentioned Cde is registered as a Master Of Philosophy at The University Of Zimbabwe. He is doing a collective case study of the Complex in Glen View, Gazaland in Highfield and Siyaso in Mbare. Please assist him in gathering data that will assist him in completing his study as his study is purely academic. Should you want further details do not hesitate to contact our district offices. **Yours Faithfully** Secretary For Education Youth Wing Cde. Luckmore Mandoni Cell: 0736 189 501 croke A The Chairman Youth Wing Cde Wayne Foroko Cell: 0733 676 904 31/03/16 N e The Chairman main Wing Cde Chewe Cell: 0772 469 149

#### Appendix Five: Application Letter for Hiring Mobile Devices for use in Data Collection

5447 74<sup>th</sup> Crescent Glen View 3 Harare

16 February 2017

TO WHOM IT MAY CONCERN Computer Science Department University of Zimbabwe Harare

Dear Sir/Madam

#### Re: APPLICATION TO HIRE MOBILE DEVICES FOR USE IN A FIELD SURVEY

The above subject refers. My name is Simbarashe Show Mazongonda, I.D number 63-1261111-F85. I am registered as a Master of Philosophy student with the University of Zimbabwe, student number R056383Q. To fulfil the requirements of the programme, I am expected to do a study that meaningfully contributes in any of the following areas:

- Policy and Practice
- Methodological Issues; and
- Theory and Practice

To fulfil these requirements, I am doing a reactionary study to the call by the Minister of Finance to develop an informal sector database for ease of tax collection and ensure sector accountability. The proposed geo-database requires accurate location of informal operators captured using mobile-based data collection. Against this background, I am kindly asking to hire ten (10) mobile devices for a period of five days, 20 to 24 February 2017. The survey takes form of a collective case study of three informal home industries in Harare namely: Siyaso in Mbare; Gazaland in Highfield; and Complex in Glen View.

For further details, do hesitate to contact my principal supervisor, Dr Chirisa, who also the current acting chairperson of the Department of Rural and Urban Planning.

Yours Faithfully

Simbarashe show Mazongonda (+263772206765; simbasho@gmail.com) FROM THE CHAIRMAN'S OFFICE DEPARTMENT OF RURAL AND URBAN PLANNING OFFICIAL

## Appendix Six: Confirmation Letter for Hiring Mobile Devices from the Computer Science Department

UNIVERSITY OF ZIMBABWE COMPUTER SCIENCE Telephone: 263 – 4 – 303211 ext. 1492 Line: 263 – 4 – 333677 Fax: 263 – 4 – 307141 DEPARTMENT Box MP167 Mount Pleasant Harare Zimbabwe cell: +263 772 416 888 Email: trupere@science.uz.ac.zw 23th February, 2017 Dear Mr. Simbarashe Show Mazongonda **REF: HIRING OF TABLETS FOR RESEARCH** This letter serves as a reference letter that Mr. S S Mazongonda hired tablets for his research from 17th February 2017 to 24 February 2017. He was using the ten tablets for data collection for his MPHIL studies. He returned them in correct order with no damages. Yours faithfully UNIVERSITY OF ZIMBABWE COMPUTER OCIENCE DEPT 2017 -02 Taurayi Rupere (Acting Chairpeson) 5

## **Appendix Seven: Observation Schedule**

This observation checklist is guide to the issues worth to observe in an attempt to hew data relating to classes in informal manufacturing and informal institutions

### Section A: Classes in informal manufacturing

- 1. Type of industrial activities
- 2. Machinery in use
- 3. Products on sale
- 4. Nature and type of raw materials
- 5. Hand and power tools in use

#### Section B: Underlying informal institutions

- 1. Issues inclined to workmanship
- 2. Aspects of specialisation
- 3. Social ties and kinship ties among the operators
- 4. Operating hours
- 5. Trade flow network
- 6. Mentorship practices
- 7. Power relations (particularly, acquiring space and place of operation)
- 8. Land pacerlisation and compartmentalisation practices

### **Appendix Eight: Interview Guide**

This guide of question breaks down the issues to be discussed during interviews with key respondents. It is critical to note that questions will not be asked in the order set in this guide. Follow-up, probing and specifying questions will be used to clarify certain issues.

### Section A: Officials from the Local Planning Authority (LPA)

- 1. What qualify one to get a place to operate in a home industry?
- 2. Explain how you provide for land parcelisation in home industries
- 3. What measures are you using to control unauthorised developments in home industries?

### Section B: Influential Informal Operators

- 1. How easy is it for one to get a place of operation in this home industry?
- 2. How do you resolve conflicts amongst yourselves (as operators) without involving formal channels?
- 3. Are there any standards relating operating times?
- 4. Do you offer training (mentorship) to new players who join the industry?
- 5. Do you an internal register for operators who work in this home industry?

## Section C: Experts in Planning Law

- 1. What are the implication of over concentration in space to master and local plans, subdivision and consolidation and development control?
- 2. Are the land parcelisation and compartmentalisation practices in home industries permissible by law?
- 3. What do you think could be done to realise the main of the RTCP Act?
- 4. How best can the manufacturers dotted around home industries be accommodated in existing master and local plans?

#### **Appendix Nine: Questionnaire**

#### Introduction Guide

My name is ...... I am an enumerator with the University of Science Zimbabwe (UZ). I am conducting a study on informal manufacturing in this home industry in fulfilment of my studies with UZ. Your organisation is among several other randomly selected organisations to represent this home industry. This structured interview will take approximately **15 minutes** to complete. Any information that you provide will be kept strictly confidential and will not be shown to other people. Your participation is voluntary. However, I hope that you will participate since your views are important. Would you like to participate in this study by answering questions about your enterprise?

#### Questionnaire Identification

Name of Home Industry	Home Industry Code
District Name	District Code
Operator Number	Enumerator's Name
Date of Interview	Researcher Checked

A.1 Relationship	A.2 Sex	A.3	A.4 Level	A.5 Level of industrial training
with the business		Marital	of	
enterprise		status	education	
		1	1	1
1. Founder;	1. Male;	1. Married	I. None;	1. None;
2. Partner;	2.Female	living together:	2. Primary	2. Local mentorship;
3. Manager;		2 Manuford		3. Apprenticeship;
4. Employee;		2. Married living apart:	3. ZJC level;	4. Diploma;
5.0ther		<i>apan,</i> 3.	4. O' level;	5. Degree and above;
		Divorced;	5. A' level;	6. Other (specify)
		4. Widowed	6. Diploma/	
		5 N	after	
		5. Never married	primary;	
			7. Diploma/	
			Certificate	
			after secondary;	
			8	
			Graduate/	
			Graduate	
A.6 Place of	A.7 Age		A.8 How lon	g have you been operating from this
residence	8-		place?	6
1. within the	1. 18 and be	low;	1. less than 1	year;
neighbourhood;	2. 19 to 23;		2. between 1	and 4 years;
2. Elsewhere (specify)	3. 24 to 28;		3. between 5	and 8 years;
	4. 29 to 33;		4. more than	8 years
	5. 34 to 38;			
	6. 39 to 43;			
	7. 44 to 48;			
	8. 49 and a	bove		

## Section A: Socio-Economic Demographics

B.1 Place of operation	<b>B.2 Source and type of</b> <b>Inputs</b>	<b>B.3 Type of</b> industrial Activity	<b>B.4 Products</b>	B.5 Nature and type of tools used	
<ol> <li>Own the property</li> <li>Rent the property</li> <li>Operate along road reserves</li> </ol>	<ol> <li>Incorporate scrape material</li> <li>Incorporate new raw material</li> <li>Incorporate new and scrap raw material</li> <li>Service/recondition existing parts</li> <li>other (specify)</li> <li></li></ol>	<ol> <li>Reconditioning</li> <li>Rubber moulding</li> <li>Rubber moulding</li> <li>Welding</li> <li>Carpentry</li> <li>Brake moulding</li> <li>Car mechanics</li> <li>Sheet metal work</li> <li>Other (specify)</li> </ol>	<ol> <li>goods used as inputs in some industrial process</li> <li>Goods that serve as an end in themselves</li> <li>Other (specify)</li> <li></li> </ol>	1. Hand tools 2. Power tools 3. A combinatio n of hand and power tools	
B.6 Do you own a full tool kit?	B.7 Do you buy raw material individually or collectively?	B.8 What is your target market?	<b>B.9</b> Are you registered with any of the following organisations or a combination of some sort?		
1. yes 2. no	1. individually 2. collectively	<ol> <li>Individuals</li> <li>Informal traders</li> <li>formal businesses</li> <li>other (specify)</li> <li></li> </ol>	<ol> <li>register of companies</li> <li>local authority</li> <li>revenue authority</li> <li>other (specify)</li> </ol>	s 	

## Section B: Industrial Production

#### Section C: Psychographic Data

The following situations describe some aspects of planning thought and practice. Please evaluate each scenario and respond with your degree of agreement or disagreement of the described action. A scale similar to the following will be provided after each scenario:



Please indicate your response by placing an "X" in the space that best describes your feelings regarding the scenario explained as shown in the example above. Note that there is no "right" or "wrong" response.

A. The City of Harare has announced that it will no longer afford to empty full bins of solid waste generated from this place and the bins are now overflowing with solid waste. Such a development will render this place not workable.



B. Given a working environment where the number of toilet users outweighs the number of available toilets and you are forced to use bush toilets. The production and sales volume will go down.



C. An environment where some manufacturers grinding machines are producing dust, some are fixing motor vehicles, some into metal fabrication and some preparing food in one place. This negatively impacts on pleasantness of the working environment?



D. Steel base company has approached you with an urgent order of 30 sheets of welded metal at a good buying price. However, you realise that your protective clothing including the welding helmet is missing. You continue with welding the required order.



E. A job that requires specialised equipment arose yet you only have 'make-up' tools, though it takes a considerable amount of time to complete the job using 'make-up' tools. At the same time, the use of 'make –up' tools require a higher degree of attentiveness as any slight mistake will harm you. In such a case, you will pass the job to the next person who is better resourced.



F. People staying in blocks of houses adjacent to this working site lodged a complaint to the local planning authority regarding the noise associated with your activities, especially vehicular traffic noise. The local planning authority has approached you for an advice. Relocating your operations to place far away from housing units will be best option.



G. Some business advisors encouraged you to improve on visual appropriateness of this working site citing the displeasing view because of a complex mixture of activities taking place on this site. Their argument hinges on the fact that an unwelcome site scares away customers. The business advisors' advice is an overstatement.



H. The Harare City Council has designated a new site informal manufacturing which is far away from busy roads (with motor vehicles) surrounding this site. This will be a good move.



I. Some operators manufacturing sofas, some welding, some repairing cars and some vendors selling different sorts of goods and cooking sadza. All this is happening in the same space very close to each other. There is nothing wrong with this arrangement.



J. Harare City Council is in the process of creating different compartments to cater for different types of informal operators. Those in the business of manufacturing sofas will be on their own, those into welding on their own. We welcome this development.

Strongly Agree	Agree	Indifferent	Disagree	Strongly
				Disagree

K. As time moves on, informal operators continue to expand and therefore require additional space to operate from. Some can even extend to close to the road and some can extend towards the houses nearby so that everyone can be accommodated.



## Section D: Perceptions on Tax Measure

On a scale of 1 to 5 where 1 represents **"strongly agree"** and 5 represents **"strongly disagree"**, rate your position with the proposed tax measure.

Item	1	2	3	4	5
1. Tax collection from your income improves the working environment					
<ol> <li>Public and merit goods are financed using tax payers' money</li> </ol>					
3. Tax measure places unfair burden on industry					
4. Tax is valuable for its own sake					
5. A fair business environment is tax free					
6. Players in the environment should be consulted in developing a tax strategy					
7. Government should find other ways, other than tax, of financing its activities					

## Appendix Ten: Semi-Processed Data on Validity and Reliability of Study Findings, and Lessons Learnt During Data Collection and Analysis in Support of Sections 3.9 and 3.11

Percentiles											
	0% -	10/	2 50%	50/	10%	50% -	00%	05%	07 50%	00%	100% -
	min	1 /0	2.30 /0	5 /0	10/0	median	nedian	93 /0	97.3070	J/0 <b>33</b> /0	max
Complex	6.000	7.000	8.000	8.000	9.000	13.000	23.250	24.375	25.563	26.888	29.125
Gazaland	7.000	7.000	7.000	7.000	7.000	10.000	22.163	25.000	25.000	26.230	98.400
Siyaso	7.000	7.000	7.000	8.000	8.000	11.000	20.625	22.400	24.013	27.503	32.000

#### **Moments**

	Mean	StDev	N observed	N missing	SE(Mean)	Lower	Upper
Complex	14.399	5.444	211		0.375	13.660	15.138
Gazaland	13.315	8.617	178		0.646	12.040	14.589
Siyaso	12.880	4.792	239		0.310	12.270	13.491

		Chi-square Test
p-value	df	X^2
< 0.0001	54	161.602

## **Contingency** Table

		Na	me_of_Home_Indus	try	
GPS_precision		Complex	Gazaland	Siyaso	Total
7	Count	4	19	10	33
7	X^2 contrib	4.321	8.874	0.478	0.051
9	Count	14	27	16	57
o	X^2 contrib	1.196	6.224	1.401	0.089
0	Count	14	16	39	69
9	X^2 contrib	3.320	0.916	6.488	0.107
10	Count	39	29	22	90
10	X^2 contrib	3.000	0.237	4.192	0.140
11	Count	14	14	38	66
11	X^2 contrib	2.727	1.517	6.921	0.103
12	Count	15	11	20	46
12	X^2 contrib	0.001	0.477	0.408	0.072
12	Count	14	8	17	39
15	X^2 contrib	0.109	1.056	0.360	0.061
14	Count	10	7	11	28
14	X^2 contrib	0.069	0.187	0.019	0.044
15	Count	13	2	15	30
15	X^2 contrib	1.000	5.285	1.205	0.047
16	Count	8	1	7	16
10	X^2 contrib	1.429	2.923	0.156	0.025
17	Count	11	2	4	17
17	X^2 contrib	5.244	1.804	0.905	0.026
19	Count	4	3	5	12
10	X^2 contrib	0.001	0.080	0.050	0.019

10	Count	5	2	5	12
19	X^2 contrib	0.283	0.665	0.050	0.019
20	Count	1	2	4	7
20	X^2 contrib	0.735	0.002	0.702	0.011
20 375	Count	3	0	0	3
20.373	X^2 contrib	4.114	0.883	1.131	0.005
20 875	Count	1	2	0	3
20.075	X^2 contrib	0.000	1.412	1.131	0.005
21 375	Count	2	0	3	5
21.373	X^2 contrib	0.077	1.472	0.660	0.008
21.5	Count	0	1	2	3
21.5	X^2 contrib	0.986	0.015	0.668	0.005
21 625	Count	2	1	0	3
21.025	X^2 contrib	1.043	0.015	1.131	0.005
22	Count	2	12	1	15
22	X^2 contrib	1.741	13.025	3.831	0.023
22 375	Count	2	0	3	5
22.373	X^2 contrib	0.077	1.472	0.660	0.008
22 625	Count	2	0	2	4
22.023	X^2 contrib	0.357	1.178	0.161	0.006
23 875	Count	2	0	1	3
23.075	X^2 contrib	1.043	0.883	0.015	0.005
24	Count	0	2	1	3
24	X^2 contrib	0.986	1.412	0.015	0.005
24.25	Count	2	0	1	3
24.23	X^2 contrib	1.043	0.883	0.015	0.005
25	Count	1	8	1	10
23	X^2 contrib	1.591	8.684	2.035	0.016
(missing)	Count	0	11	3	14
(missing)	X^2 contrib	4.601	11.480	0.983	0.022
(other)	Count	26	9	11	46
(other)	X^2 contrib	7.832	1.523	2.318	0.072
Total	Count	211	189	242	642
Total	Marginal	0.329	0.294	0.377	

Name of Suburb	Gaza	Complex	Siyaso
Amsterdam Park	0	0	1
Budiriro	8	20	6
Glen Norah	22	11	2
Out Of Harare	4	12	24
Churu Farm	1	1	0
Dzivarasekwa	1	0	0
Epworth	0	4	58
Glen View	14	3	9
Glenwood	0	0	5
Greendale	0	0	2
Hatfield	1	1	8
Hopely	16	22	18
Kambuzuma	0	3	4
Kuwadzana	5	3	1
Waterfalls	2	2	7
Mufakose	1	3	0
Mount Pleasant	0	0	1
Highfield	2	2	4
Sunningdale	0	0	10
Warren Park	1	0	3

## Appendix Eleven: Semi-Processed Data on Spatial and Compositional Elements

Places of Residence of Manufacturers

## Combinations of operations/ occupations per site

	Siyaso	Gazaland	Complex	totals
Battery repairs	0	1	0	1
Brake moulding	0	4	0	4
Brake moulding Car mechanics	2	5	3	
Brake moulding Car mechanics Sheet metal work	1	1	0	
Car mechanics	4	35	0	39

Car mechanics Sheet metal work		2	0	
Carpentry		0	1	37
Carpentry Sheet metal work		0	5	
Chemical Manufacture	2	1	1	
Coach Builder	0	1	0	1
Fence Making	4	0	0	4
Floor Polish	0	0	0	
Freezits	0	2	0	2
Monuments Making	0	1	2	3
Mop & broom Manufacture	4	0	0	4
Paint Manufacture	2	2	0	4
Panel Beating	0	6	0	6
Pots Manufacturing	0	1	0	1
Reconditioning	3	19	0	22
Reconditioning Brake moulding Car mechanics		3	0	
Reconditioning Carpentry		13	2	
Reconditioning Carpentry Car mechanics	0	4	0	
Reconditioning Rubber moulding	1	1	0	
Reconditioning Rubber moulding Brake moulding Car mechanics	0	2	0	
Reconditioning Rubber moulding Carpentry		1	24	
Reconditioning Rubber moulding Welding Brake moulding Car mechanics		0	0	
Reconditioning Rubber moulding Welding Carpentry	0	1	5	
Reconditioning Sheet metal work	10	0	0	
Reconditioning Welding	4	0	2	
Reconditioning Welding Brake moulding	0	5	0	
Reconditioning Welding Brake moulding Car mechanics		2	2	
Reconditioning Welding Carpentry Brake moulding Car mechanics		1	0	
Reconditioning Welding Sheet metal work		0	0	
Reconditioning Welding Sheet metal work		5	0	
Rubber moulding	0	1	0	1
Sheet metal work	59	2	0	61

Soap production		9	0	9
Tailor	0	1	3	4
Upholstery	0	3	0	3
Welding	35	38	12	236
Welding Brake moulding Car mechanics	0	0	0	
Welding Brake moulding Car mechanics Sheet metal work	0	1	0	
Welding Brake moulding Sheet metal work		2	0	
Welding Car mechanics		1	0	
Welding Car mechanics Sheet metal work		1	0	
Welding Carpentry		2	4	
Welding Carpentry Car mechanics		0	0	
Welding Carpentry Car mechanics Sheet metal work		0	0	
Welding Carpentry Sheet metal work		0	0	
Welding Other		0	0	
Welding Sheet metal work	33	8	1	

## Appendix Twelve: Semi-Processed Data on Psychographics of Manufacturers in View of Town Planning Principles

## Appendix Twelve A: Knowledge-Town Planning Principles Relationship

The Harare City Council has designated a new site for informal manufacturing which is far away from busy roads (with motor vehicles) surrounding this site. This will be a good move (knowledge-safety)

Pearson's product-moment correlation

Overal	t = 1.017, df = 640, p-value = 0.3095 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.03732863 0.11718312 sample estimates: cor 0.04016737
Gazaland	t = -0.84111, df = 640, p-value = 0.4006 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.11032568 0.04426442 sample estimates: cor -0.03322938
Siyaso	t = 0.9193, df = 640, p-value = 0.3583 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.04118106 0.11337602 sample estimates: cor 0.03631464
Complex	t = -0.13216, df = 640, p-value = 0.8949 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.08257076 0.07218500 sample estimates: cor -0.005224159

As time moves on informal operators continue to expand and therefore require additional space to operate from some can even extend to close to the road and some can extend towards the houses nearby so that everyone can be accommodated (knowledge-order)

	Gazaland	Complex	Siyaso	Total
Agree	97	114	117	328
Disagree	36	42	48	126
Indifferent	10	25	35	70
Strongly Agree	30	26	36	92
Strongly disagree	16	4	6	26

		Pearson's Chi-squared test
		data: h X-squared = 23.155, df = 8, p-value = 0.003171

Pearson's product-moment correlation

Overal	t = -0.55508, df = 640, p-value = 0.579 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.09914775 0.05553818 sample estimates: cor -0.02193607
Gazaland	t = 0.74531, df = 640, p-value = 0.4564 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.04804137 0.10658518 sample estimates: cor 0.02944808
Siyaso	t = -0.23285, df = 640, p-value = 0.816 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.08652223 0.06822469 sample estimates: cor -0.009203873
Complex	t = -0.48271, df = 640, p-value = 0.6295 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.09631515 0.05838882 sample estimates: cor -0.01907735

People staying in blocks of houses adjacent to this working site lodged a complaint to the local planning authority regarding the noise associated with your activities especially vehicular traffic noise. The local planning authority has approached you for an advice. Relocating your operations to place far away from housing units will be best option (knowledge-amenity)

	Gazaland	Complex	Siyaso	Total
Agree	35	49	47	131
Disagree	61	84	117	262
Indifferent	18	27	25	70
Strongly Agree	25	19	14	58
Strongly disagree	50	32	39	121

		Pearson's Chi-squared test
		data: f X-squared = 23.941, df = 8, p-value = 0.002344

Pearson's product-moment correlation

Overal	t = 0.88029, df = 640, p-value = 0.379 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.04271951 0.11185441 sample estimates: cor 0.03477542
Gazaland	t = 0.023559, df = 640, p-value = 0.9812 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.07645423 0.07830560 sample estimates: cor 0.0009312617
Siyaso	t = 1.5047, df = 640, p-value = 0.1329 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.01809141 0.13612628 sample estimates: cor 0.05937169
Complex	t = -1.5755, df = 640, p-value = 0.1156 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.13887002 0.01529557 sample estimates: cor -0.06215798

Given a working environment where the number of toilet users outweighs the number of available toilets and you are forced to use bush toilets. The production and sales volume will go down (knowledge-health)

	Gazaland	Complex	Siyaso	Total
Agree	73	117	101	291
Disagree	31	23	33	87
Indifferent	11	19	23	53
Strongly Agree	62	49	81	192
Strongly disagree	12	3	4	19

		Pearson's Chi-squared test
		data: b X-squared = 26.65, df = 8, p-value = 0.0008124

Overal	t = -1.5493, df = 640, p-value = 0.1218 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.13785363 0.01633154 sample estimates: cor -0.06112569
Gazaland	t = 1.5954, df = 640, p-value = 0.1111 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.01451158 0.13963898 sample estimates: cor 0.06293908
Siyaso	t = -1.1048, df = 640, p-value = 0.2697 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.12060064 0.03386651 sample estimates: cor -0.0436278
Complex	t = -0.40628, df = 640, p-value = 0.6847 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.09332173 0.06139856 sample estimates: cor -0.01605771

## Appendix Twelve B: Attitude–Town Planning Principles Relationship

Steel base company has approached you with an urgent order of 30 sheets of welded metal at a good buying price. However, you realise that your protective clothing including the welding helmet is missing. You continue with welding the required order. (attitude-safety)

	Gazaland	Complex	Siyaso	Total
Agree	63	74	77	214
Disagree	28	8	29	65
Indifferent	4	31	15	50
Strongly Agree	89	94	115	298
Strongly disagree	5	4	6	15
				Pearson's Chi-squared test data: d X-squared = 35.668, df = 8, p-value = 2.02e-05 Warning message: In chisq.test(d) : Chi- squared approximation may be incorrect

Overal	t = -0.17956, df = 640, p-value = 0.8576 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.08443098 0.07032122 sample estimates: cor -0.007097373
Gazaland	t = 0.60557, df = 640, p-value = 0.545 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.0535486 0.1011233 sample estimates: cor 0.02393054
Siyaso	t = 0.26735, df = 640, p-value = 0.7893 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.06686736 0.08787542 sample estimates: cor 0.0105673

Complex	t = -0.86373, df = 640, p-value = 0.3881 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.11120822 0.04337262
	sample estimates:
	cor
	-0.03412187

An environment where some manufacturers grinding machines are producing dust, some are fixing motor vehicles, some are into metal fabrication, and some preparing food in one place. This negatively impacts on pleasantness of the working environment (attitude-amenity)

	Gazaland	Complex	Siyaso	Total
Agree	70	127	97	294
Disagree	42	22	58	122
Indifferent	18	25	29	72
Strongly Agree	48	33	46	127
Strongly disagree	11	4	12	27
				Pearson's Chi-squared test data: c X-squared = 36.548, df = 8, p-value = 1.394e-05

Overall	t = 1.1031, df = 640, p-value = 0.2704 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.03393119 0.12053682 sample estimates: cor 0.04356317
Gazaland	t = 0.57623, df = 640, p-value = 0.5647 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.05470468 0.09997551 sample estimates: cor 0.02277169
Siyaso	t = 2.4064, df = 640, p-value = 0.01639 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: 0.01744156 0.17082203 sample estimates: cor 0.09469373

Complex	t = -3.0525, df = 640, p-value = 0.002364 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.19536068 -0.04280842
	cor -0.1197916

The City of Harare has announced that it will no longer afford to empty full bins of solid waste generated from this place and the bins are now overflowing with solid waste. Such a development will render this place not workable (attitude-health)

	Gazaland	Complex	Siyaso	Total
Agree	66	76	79	221
Disagree	17	20	20	57
Indifferent	14	12	15	41
Strongly Agree	86	97	123	306
Strongly Disagree	6	6	5	17

NB: Levels: 1.Strongly Agree 2.Agree 3.Indifferent 4.Disagree 5.Strongly Disagree

Overall	Pearson's product-moment correlation t = -1.1366, df = 640, p-value = 0.2561 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.12184039 0.03260966 sample estimates: cor -0.04488357
Gazaland	t = 0.77509, df = 640, p-value = 0.4386 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.04686746 0.10774823 sample estimates: cor 0.03062358
Siyaso	t = -1.1827, df = 640, p-value = 0.2374 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.12363167 0.03079281 sample estimates: cor -0.04669844
Complex	t = 0.46723, df = 640, p-value = 0.6405 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.05899866 0.09570884 sample estimates: cor 0.01846561

Harare City Council is in the process of creating different compartments to cater for different types of informal operators. Those in the business of manufacturing sofas will be on their own, those into welding on their own and so on. We welcome this development. (attitude-order)

	Gazaland	Complex	Siyaso	Total
Agree	76	90	89	255
Disagree	33	39	40	112
Indifferent	20	25	38	83
Strongly Agree	40	38	63	141
Strongly disagree	20	19	12	51
				Pearson's Chi-squared test data: g X-squared = 11.731, df = 8, p-value = 0.1636

Overal	t = -1.6268, df = 640, p-value = 0.1043 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.14085326 0.01327317 sample estimates: cor -0.06417272
Gazaland	t = 0.84969, df = 640, p-value = 0.3958 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.04392598 0.11066064 sample estimates: cor 0.0335681
Siyaso	t = -1.9378, df = 640, p-value = 0.05308 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.152852202 0.001010378 sample estimates: cor -0.07637557
Complex	t = 1.1707, df = 640, p-value = 0.2422 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.03126503 0.12316620 sample estimates: cor 0.04622679

## Appendix Twelve C: Perception-Town Planning Principles Relationship

A job that requires specialised equipment arose yet you only have make-up tools though it takes a considerable amount of time to complete the job using make-up tools. At the same time, the use of make-up tools require a higher degree of attentiveness as any slight mistake will harm you. In such a case, you will pass the job to the next person who is better resourced. (perception-safety)

	Gazaland	Complex	Siyaso	Total
Agree	50	45	60	155
Disagree	36	79	60	175
Indifferent	13	15	17	45
Strongly Agree	24	25	32	81
Strongly disagree	66	47	73	186
				Pearson's Chi-squared test data: e X-squared = 20.265, df = 8, p-value = 0.009378

Overal	t = -0.23597, df = 640, p-value = 0.8135 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.08664438 0.06810219 sample estimates: cor -0.009326939
Gazaland	t = 0.13829, df = 640, p-value = 0.8901 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.07194393 0.08281143 sample estimates: cor 0.005466479
Siyaso	t = -0.26686, df = 640, p-value = 0.7897 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.08785612 0.06688672 sample estimates: cor -0.01054785
Complex	t = 0.14112, df = 640, p-value = 0.8878 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.07183271 0.08292246 sample estimates: cor 0.005578276

Some operators manufacturing sofas, some welding, some repairing cars and some vendors selling different sorts of goods and cooking sadza. All this is happening in the same space very close to each other. There is nothing wrong with this arrangement (perception-order)

Pearson's product-moment correlation

Overal	t = 1.2631, df = 640, p-value = 0.207 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.02761914 0.12675827 sample estimates: cor 0.04986742
Gazaland	t = -2.3793, df = 640, p-value = 0.01764 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.16978647 -0.01637537 sample estimates: cor -0.09363669
Siyaso	t = -0.10574, df = 640, p-value = 0.9158 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.08153341 0.07322386 sample estimates: cor -0.0041798
Complex	t = 2.4185, df = 640, p-value = 0.01586 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: 0.01791877 0.17128543 sample estimates: cor 0.0951668

Some business advisors encouraged you to improve on visual appropriateness of this working site citing the displeasing view because of a complex mixture of activities taking place on this site. Their argument hinges on the fact that an unwelcome site scares away customers. The business advisors' advice is an overstatement. (perception-amenity)

Overal	t = 1.0186, df = 640, p-value = 0.3088 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.0372638 0.1172472 sample estimates: cor 0.04023219
Gazaland	t = -2.3359, df = 640, p-value = 0.0198 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.16812872 -0.01466932 sample estimates: cor -0.09194493

Siyaso	t = -0.47559, df = 640, p-value = 0.6345 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: -0.09603650 0.05866911 sample estimates: cor -0.0187962
Complex	t = 2.7639, df = 640, p-value = 0.005876 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: 0.03148985 0.18443520 sample estimates: cor 0.1086052

# Appendix Thirteen: Semi- Processed Data on Manufacturers Behavioural Responses to the Proposed Tax Measure

## Psychographics on Taxation

	Strongly Agree	Agree	Indifferent	Disagree	Strongly Disagree
Tax collection from your income improves the working environment.	136	181	72	176	76
Public and merit goods are financed using tax payers' money.	114	282	102	125	19
Tax measure places unfair burden on industry.	247	212	49	111	23
Tax is valuable for its own sake.	77	331	112	106	16
A fair business environment is tax free.	192	207	69	147	26
Players in the environment should be consulted in developing a tax strategy.	342	239	38	16	7

## Appendix Fourteen: Coherence of Population Test

Step 1: Definition of	Let <i>X</i> be assumed common attributes between Zimbabwean population and population of					
Variable	informal manufacturers.					
Step 2: Formulation	H <sub>0</sub> : Informal manufacturers population has the same proportion as Zimbabwean population.					
of a hypothesis	H <sub>1</sub> : The two populations are not coherent.					
Step 3: Declaration	If H <sub>0</sub> is true,					
of distribution	The proportion of informal manufacturers confirms to the population of Zimbabwe.					
	The critical value is given by					
		w <sup>2</sup> (D	)			
		$\chi_{5\%}(D_{freedor})$	n)			
	where the degrees of freedom is given by the number of classes and number of restrictions. It is					
	against this bac	kground that expected frequency should	d be determined	first.		
	Blood group	Method $\left[ \sum f \times \begin{pmatrix} corresponding \\ percentage \end{pmatrix} \right]$	f <sub>e</sub>			
Step 4: Criteria for rejection or	Women	642 × 0.52	333.84			
acceptance	Men	642 × 0.48	308.16			
			$\sum f_e = 624.$			
			L]			
	Since both classes have $f_e$ greater than 5, all the two classes will be retained.					
	So $D_{freedom} = 2 - 1 = 1$ {one restriction, $\sum f_e = 642.$ }					
	$\chi^2_{5\%}(1) = 3.84$	1 { the value corresponding to 5 % level of significance and 1 degree of freedom }				



#### **Appendix Fifteen: Publications from the Thesis**

(see attachment to this thesis)

- Mazongonda, S. S. and Chirisa, I. (2017). Order in informal enterprise: lessons from Gazaland Home Industry, Harare, Zimbabwe. *Public Administration and Development Alternatives*, 2(1.1), 16-31.
- Mazongonda, S. S. and Chirisa, I. (2018). Spatiality, clustering and the agglomeration economies of scale: A spatial statistical approach to informal manufacturing in Harare, Zimbabwe. In J. Mugambwa and M. W. Katusiimeh, (Eds.). *Handbook of research on urban governance and management in the developing world*. Hershey: IGI Global, pp. 224-247.
- Mazongonda, S. S., Chirisa, I. and Mzumara, M. (2018). Independence of Informal Manufacturers' Psychographics from Town Planning Principles in Harare: A Spatial Statistical Approach. *Journal of Gleanings from Academic Outliers* [Accepted for publication and will be released soon].