# MODERATING ROLE OF DIGITAL SYSTEMS ON THE SELECTED BEHAVIORAL ATTRIBUTES ON TAX COMPLIANCE AMONG MICRO, SMALL AND MEDIUM ENTERPRISES IN EMBAKASI SUBCOUNTY NAIROBI KENYA.

**BY**

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**(TAX ADMINISTRATION OPTION)**

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## DECLARATION

This project is my original work and has not been presented for a degree award in any other University.

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**DECLARATION BY THE SUPERVISORS:**

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## DEDICATION

Also, I dedicate this research project to my family members' parents and friends. This research I also dedicate to my son Aedilhun and my Spouse Julius Ndereba.

This research project is dedicated to Almighty God, who is the source of knowledge and wisdom. He has protected and provided me with all the required resources which have enabled me to complete this project. It would have been impossible for me to succeed without the sufficient grace from God.

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## ABSTRACT

The attitude towards tax compliance is shaped by various factors, including demographic, individual, social, institutional, and economic influences. The objective of this study is to assess how behavioral traits influence tax compliance among MSMEs in the Embakasi sub-county of Nairobi, Kenya. Consequently, a gap exists between the findings from developed and developing countries. However, due to the intricate nature of this topic, achieving a complete understanding remains challenging. The existing empirical reviews that aim to elucidate tax compliance behavior are marked by a lack of coherence and clarity, which served as the impetus for this study. The general objective was to investigate the moderating role of digital tax administration systems on the relationship between selected taxpayers' behavior attributes and tax compliance. The specific objectives of the study were to determine the effect of sociological attributes, psychological attributes, and perceived risk on tax compliance among MSMEs in the Embakasi sub-county in Nairobi County, Kenya. The study will be anchored on the Deterrence Economic theory, Psychological theory of attribution, Comparative Treatment Theory, and Social Exchange Theory. Primary data was collected through structured questionnaires. This study used a quantitative approach with primary data from distributing questionnaires. The samples collected were 1,843 MSMEs and a sample size of 329 Embakasi sub-county in Nairobi County in Kenya. The data of the study was analysed by use of correlation and multiple regression analysis to provide an understanding of the relationship between the variables in the study. The study findings revealed that there was negative and significant effect of sociological attributes on tax compliance ($\beta$ = -.480, p = <0.05). That there was a positive and significant effect of psychological attributes on tax compliance ($\beta$ = .570, p = <0.05). Further, there was a positive and significant effect of perceived risk on tax compliance ($\beta$ = 1.032, p = <0.05). Results indicate that the interaction effect of digitalization of tax administration systems on the relationship between sociological attributes and tax compliance was positive and significant ($\beta$ = .895, p = <0.05), between psychological attributes and tax compliance was negative and significant ($\beta$ = -.693, p = <0.05) and that the interaction effect of digitalization of tax administration systems on the relationship between perceived risk and tax compliance was negative and significant ($\beta$ = -1.437, p = <0.05). The research outcomes would improve future research and help MSMEs taxpayers determine the effectiveness of tax compliance. The research results would also be beneficial to both academicians and MSMEs taxpayers and policy makers trying to achieve positive tax compliance. Based on the findings, the study has several recommendations: KRA needs to increase awareness of the consequences of tax evasion, and KRA needs to implement a simplified tax procedure system. Further research extending to other regions and countries would provide a more comprehensive understanding of tax compliance across different contexts. Also, further research could explore additional factors influencing compliance such as economic conditions, levels of trust in government, or the impact of economic incentives that could implement the findings of this study.

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## ACRONYMS AND ABBREVIATIONS

**ANOVA:** Analysis of Variance

**EA** -Enterprise Age

**et al**: -And others

**GDP** - Gross Domestic Product

**IMF** - International Monetary Fund

**KESRA** - Kenya School of Revenue Administration

**KMO** - Kaiser -Meyer -Olkin Test

**KRA**: - Kenya Revenue Authority

**LHDH's** - Latitudinal Herbivory -Defense Hypothesis

**MSMEs** - Micro, Small, and Medium-Sized Enterprises

**NACOSTI** - National Commission for Science, Technology and Innovation

**OECD** - Organization for Economic Cooperation and Development.

**PCA** - Principal Component Analysis

**PWC** - Price Waterhouse Coopers

**R& D** - Research and Development

**SEM** - Structural Equation Model

**SMEs** - Small, and Medium-Sized Enterprises

**TPB**: - Theory of Planned Behavior

**TRA** -Theory of Reasoned Action

**TO** – Turnover

**VAT** -Value Added Tax

**VIF** - Variance Inflation Factor

## OPERATIONAL DEFINITION OF TERMS

**Behavioral attributes**: It is a state where a subjected taxpayer shall either voluntarily or not follow the requirement rule of taxation in doing their obligation towards the taxation (Frey & Torgler, 2007; Bazart & Bonein, 2014)

**Digital Systems:** Entails five elements: technologies, people, managing tax risks, financial resources and communication (Juswanto & Simms, 2017).

**Medium Enterprises**: An enterprise with 50 -100 Employees

**Perceived Risk:** Consumers' perception of the uncertainty and adverse consequences of engaging in a purchase activity

**Psychological Attributes**: Refers to assessment of psychological characteristics of individuals, in which numerous methods are used to compare the characteristics (Munga, Y., Olweny, T., & Yegon, C. (2021)).

**Small and Medium Enterprises**: Those entities with full-time employees not exceeding 100 or annual sales turnover not exceeding Ksh 150 million.

**Small Enterprises**: An enterprise with 10-50 Employees

**Sociological Attributes**: how we make inferences about the cause of events and experiences

**Tax compliance:** Referring more on how the individual complies with the tax law and or tax regulations in certain country while the tax morale is the individual behavior that leading towards the tax compliance (Kirchgassner, 2010).

# CHAPTER ONE

## 1.0 Introduction

The aim of this chapter is to provide a general overview of the proposed study starting with the background of the study, statement of the problem, purpose of the study, specific objectives of the study, research hypotheses, significance and the scope of the study.

## 1.1 Background of the Study

For an array of reasons, tax compliance is a crucial issue for developing country's government policy. First, state and local governments rely heavily on tax money for their survival (Slemrod, 2015). It is the main source of funding for the Kenyan government. Second, the best long-term solution for weaning a nation off its reliance on foreign help is taxation. The least developed nations continue to rely heavily on foreign aid, even though developing nations already pay for the majority of their budgets through taxes (Mascagni, Moore, and McCluske, 2014). A greater degree of stability, predictability, and control over the budget process would be possible with a greater dependence on domestic, non-resource, and non-aid income.

For the most part, to increase these revenues, an effective and efficient tax structure is necessary (World Bank, 2019). However, common policy approaches like changing laws and procedures might not be sufficient to increase taxpayer compliance. They might also take a long time or be impossible because of political restrictions, resource limitations, and technological infrastructure. Innovative and affordable solutions to these problems can be found by thorough understanding human behavior and how people interact with policies and programs. Even though many things are still unknown, interventions that take human behavior into account can help people and businesses absorb information more effectively, make decisions, file their tax returns

on time and accurately, and help tax administration personnel perform their duties more effectively.

Worldwide, taxpayers' resistance, underutilization and reluctance to use digital tax filing systems remain a great concern and still plague various tax agencies which are embracing digital tax administration systems (Fjord & Schmidt, 2022). According to Manzhura, Pochenchuk, and Kraus (2022), digitized tax platforms are becoming crucial for companies, organizations and multinationals to adapt. Failure to adequately respond exposes the firm to stringent financial penalties (Ibid).

According to Noor Azmi et al. (2020), the effectiveness of a nation's current tax system is reflected in its economic development and growth. To pursue the development and redistribution of resources gathered by the tax authorities, active taxpayers who abide by the current tax legislation provide the financial resources required (Ghani et al., 2020). Conversely, tax system noncompliance is widespread worldwide (Evans & Tran-Nam, 2014). There are obstacles to an efficient tax system since people are hesitant to abide by the laws and regulations about taxes (Brockmann et al., 2016).

According to Andreoni et al. (1998), compliance encompasses the ideas of tax incidence, efficiency, and equality. The ability of a state to guarantee that the general population complies with tax laws and regulations is known as tax compliance. Compliance is more often a result of a state's capacity to make sure that tax frauds and offenders are found, audited, and punished quickly before the cancer spreads to the rest of society. Compliance is very likely never an act of selflessness or being public-spirited.

The willingness of taxpayers to abide by tax laws, report accurate income, claim accurate deductions, relief, refunds, and pay all taxes on schedule is referred to as voluntary tax compliance behavior (Palil and Mustapha, 2011). According to Musimenta (2020), the government's endeavors to serve the underprivileged citizens of the nation through social assistance depend heavily on taxpayers adhering to tax laws and procedures. According to Levi (1989), certain taxpayers' actions are determined by the actions, motives, and goals of the government itself, rather than by a subset of specific individuals. This occurs when people think the government will act in their best interests and that its policies are just, given that others share their confidence in the government, people are more inclined to become "contingent consenters," cooperating in tax payment even when doing nothing would be in their best short-term material interests.

Kenya's MSMEs sector plays a crucial role in its economy, accounting for 77% of employment and approximately 34.3% of the country's economic output. Although MSMEs contribute significantly to the growth GDP in most of the developing countries, most of them do not have well-structured tax reforms. Tyler (2006) emphasizes how morality plays a part in compliance behavior. Even if they disagree with the government's authority to enforce a law, people may nevertheless be prepared to follow it if they believe it to be just. These individual assessments can be complicated. For instance, military spending may support a sense of justice that is acceptable during a patriotic era but unacceptable during an antimilitarist one.

The term "tax compliance" describes the fulfillment of all legal tax requirements and processes. According to James and Alley (2004), tax compliance is defined as the extent to which a taxpayer complies with tax laws and regulations. Thiga and Muturi

(2015) found a general positive link between these two variables. As stated by Kirchler (2007), Palil (2010), Alabede et al. (2011), voluntary tax compliance, on the other hand, refers to a person's or an organization's willingness to follow the tax regulations without facing consequence.

Tax knowledge, reduced tax rates, expenses associated with compliance, and severe fines and penalties to overall compliance. Kenya is one of the nations with the highest rates of tax non-compliance, according to CITA (2006), with the revenue authority struggling to maintain effective and efficient tax administration. Kenya Income Authority was founded by an Act of Parliament on July 1st, 1995 (Cap 469) to oversee tax administration in Kenya and enforce tax compliance, hence earning more income.

According to Remali et al. (2018), the primary hindrance to the efficiency and prosperity of the tax system's ability to collect taxes is non-compliance with the regulations. Taxpayers that violate the tax code are subject to fines and audit fees (Ghani et al., 2020). But, as taxpayers take advantage of every chance to pay less in taxes, noncompliance with the system grows with time (Saad, 2012). According to Richardson (2006), not adhering to the regulations set forth by the tax authorities is considered non-compliance with tax legislation.

Hamid et al. (2022) have highlighted the substantial ramifications that non-compliance with the tax system has on tax collections and efficiency. According to Jaffar et al. (2021) and Remali et al. (2018), non-compliance with the tax system is a worldwide phenomenon that indicates the fragility of the current tax system in a nation.

According to Mumford (2019), fiscal sociology is the sociological study of tax policy formulation from a theoretical perspective. Though the investigations go beyond ideas of how-to best effect compliance or prevent non-compliance, tax compliance is, to the extent that it has a dominant theme, its "central aspect" (Nuta, 2018:392). For this reason, fiscal sociology and tax compliance should be studied conjointly. According to Campbell (1993), the primary areas of study for fiscal sociology include the institutional, political, economic, cultural, historical, and institutional effects on taxation and government spending. The relationship between the state and society in light of history should be the primary focus of fiscal sociology, as it involves three very significant duties (Padgett, 1981).

Policies should consider social, cultural, and economic factors that influence the behavior of taxpayers, as they also impact the rate of tax collection. Since "everyone" is required to pay taxes, taxation is therefore viewed as one of the most "pervasive" ties between the people and the government (Mugler, 2019).

**1.2 Statement of the Problem**

Kenya's MSMEs contribute significantly to economic growth; however, tax compliance levels remain low. Millions of shillings are created by MSMEs' everyday business operations, which are subject to government taxation (Lumumba, et al, 2010). Tax compliance in Kenya remains low, with only 59% of taxpayers fulfilling their obligations in 2016 and 2017, in contrast to the KRA's goal of 65% compliance by 2018. This study seeks to bridge this gap by examining the moderating role of digital tax administration systems on the relationship between sociological attributes, psychological attributes, perceived risk, and tax compliance.

The study is guided by the following key variables:

- Independent Variable (IV): Sociological attributes, psychological attributes, and perceived risk.
- Dependent Variable (DV): Tax compliance.
- Moderator: Digital tax administration systems.

However, statistics show that small enterprises in Kenya make up the base group of hard-to-tax taxpayers hence compliance is a major concern. Given these statistics, it can be inferred that tax compliance is still relatively weak, despite numerous efforts aimed at incorporating more taxpayers into the tax system. Daude et al. (2012) highlight that tax morale in African nations is inversely related to the perceived levels of corruption within government, particularly concerning the tax attitudes of Micro, Small, and Medium-Sized Enterprises (MSMEs).Previous research has connected psychological factors to tax compliance or lack thereof—and studies (Jayawardane & Low, 2016; Abdul–Razak & Adafula, 2013; Elly, 2017) have connected taxpayer attitude to tax compliance but there are contextual differences because these studies were conducted in other countries, making it impractical to apply the findings of this study to the local context. The taxpayers believe that the tax calculation is unfair due to disparities between taxpayers and tax evaders as well as unplanned expenditures on different sectors (Kemal 2003; Awan and Hannan 2014).

According to Terkper (2003), failing to address low tax compliance in small businesses results in declines in tax morale and compliance in other larger and more formal sectors as well.

According to a working paper by the International Monetary Fund (IMF), "there is a corresponding reduction in domestic (non-resource) revenues of about 0.3% points of GDP for each additional percentage point of GDP in resource revenue" (Crivelli and

Gupta, 2014). Odara et al. (2016) assert that the trend of changing tax administration through the use of information technologies has made the implementation of e-tax necessary in both developed and developing nations. As per Lee (2016), the implementation of electronic taxation has a noteworthy impact on enhancing tax compliance as well as the transparency of company transactions and tax services. The positive correlation between VAT tax compliance and e-registration is also emphasized by Muturi & Kiarie (2015). Additionally, a study conducted in 2015 by Motwani et al. on the Indian e-tax system shows that even if e-tax adoption is voluntary in this nation, taxpayer compliance is still increased by e-filing tax returns and e-payment. Results obtained by Muturi and Kiarie (2015) from Kenya corroborate the earlier findings,indicating a substantial positive relationship between online tax return submission and e-tax system adoption.

### 1.3 General Objectives

The general objectives were to assess the Moderating role of digital systems on the selected behavioral attributes on tax compliance among MSMEs in Embakasi sub-county in Nairobi County Kenya.

#### 1.3.1 Specific Objectives

i. To establish the effect of sociological attributes on tax compliance among MSMEs in Embakasi Sub-County.
ii. To determine the effect of psychological attributes on tax compliance among MSMEs in Embakasi Sub-County.
iii. To assess the effect of perceived risk on tax compliance among MSMEs in Embakasi Sub-County.

iv. To determine the moderating effect of digital tax administration systems on the relationship between sociological attributes, psychological attributes and perceived risk on tax compliance

a) To examine the moderating role of digital tax administration systems on the relationship between sociological attributes and tax compliance among MSMEs in Embakasi Sub-County.

b) To analyze the moderating role of digital tax administration systems on the relationship between psychological attributes and tax compliance among MSMEs in Embakasi Sub-County.

c) To evaluate the moderating role of digital tax administration systems on the relationship between perceived risk and tax compliance among MSMEs in Embakasi Sub-County.

### 1.4 Hypotheses

**$H0_1$**: Sociological influences have no significant relationship with tax compliance among MSMEs in the Embakasi Sub-County in Nairobi County.

**$H0_2$**: Psychological influences have no significant relationship with tax compliance among MSMEs in the Embakasi Sub-County in Nairobi County

**H03**: Perceived Risk has no significant relationship with tax compliance among MSMEs in the Embakasi Sub-County in Nairobi County

**$H04_a$**: There is no significant Moderating effect of Digital Systems on the relationship between sociological influences, psychological influences and Perceived risk on tax compliance among MSMEs in the Embakasi Sub-County in Nairobi County

a) **H04a**: Digital Systems have no significant moderating effect on the relationship between psychological influences and tax compliance among MSMEs in the Embakasi Sub-County in Nairobi County
b) **$H04_b$:** Digital Systems have no significant moderating effect on the relationship between psychological influences and tax compliance among MSMEs in the Embakasi Sub-County in Nairobi County
c) **H04c**: Digital Systems have no significant moderating effect on the relationship between perceived risk and tax compliance among MSMEs in the Embakasi Sub-County in Nairobi County

## 1.5 Significance of the Study

The research contributes to the existing knowledge base by elucidating the behavioral characteristics of certain taxpayers regarding tax compliance as influenced by digital tax administration systems. This investigation will assist government policymakers in enhancing tax compliance levels among MSMEs in the Embakasi sub-county of Nairobi County, Kenya. Consequently, this will enable the government to generate increased revenue from taxation, which can be utilized to fulfill its developmental goals.

The objective of this study is to enhance the understanding of how digital systems affect tax compliance behaviors in MSMEs. By analyzing traits such as tax morale, fairness perceptions, and attitudes towards tax responsibilities, the study can reveal how digital systems can promote a more compliant taxpayer base.

The outcomes of this research can offer important insights for policymakers focused on boosting tax compliance rates among MSMEs. Gaining an understanding of how

digital systems moderate tax-related behaviors can inform the creation of policies that integrate technology-based solutions to improve taxpayer involvement, simplify compliance procedures, and lessen the administrative load on small enterprises. The study will also help identify key behavioral characteristics that affect tax compliance. Acknowledging these elements can aid tax authorities and other relevant parties in tackling the underlying causes of noncompliance, developing tailored strategies that consider the psychological and behavioral aspects of taxpayers.

This research will enhance the current knowledge on tax compliance, specifically in the context of developing countries and the MSME sector. By investigating the interplay between digital systems and behavioral characteristics, the study can address gaps in the existing literature and stimulate further research on innovative compliance methods and behavioral economics in the field of taxation.

### 1.6 Scope of the Study

The purpose of the study is to determine the moderating role of digital tax systems mechanisms on the selected determinants of taxpayer behavior attributes on tax compliance in Embakasi Subcounty in Nairobi County, Kenya**.** The study specifically looked into the effect of selected taxpayer behavior attributes on tax compliance among MSMEs Embakasi subcounty in Nairobi County, Kenya while the moderating variable was digital tax administration systems mechanisms. The research took place over a set timeframe, which included a literature review, data collection, and analysis. The main stage of data collection is planned for a six-month duration, starting in May 2024. The choice of May 2024 as the starting point was due to the availability of updated licensing records from Nairobi County, ensuring accurate sampling of active MSMEs. This period provided a thorough understanding of current trends in digital taxation and compliance behaviors. Following that, data analysis and interpretation

occurred, with a goal to complete the final report by November 2024. The study employed an explanatory research design. The primary study target was 1,843 MSMEs respondents from the Embakasi subcounty in Nairobi County stratified random sampling was adopted to yield about 329 sample size. The respondent included business owners and employees. The sample frame from which the population and sample for the study was obtained from the Nairobi County licensing records (2024). Primary data was collected through structured questionnaires. To analyse the data, the study adopted correlation and multiple regression analysis to provide an understanding of the relationship between the variables in the study.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.0 Introduction

This chapter presents a comprehensive review of the concepts of behavioral attributes affecting tax compliance, the concept of tax compliance among MSMEs. The underpinning theories, empirical studies, and the conceptual framework.

## 2.1 Concept of Tax Compliance

It is morally and ethically required of every person and business citizen to pay taxes. Sustainability in business and society includes it. Despite being mandated by tax laws in many nations, residents are nevertheless required to voluntarily comply. Unexpectedly, most of the citizen conduct has consisted of creative tax planning and management, avoidance, and evasion. According to Alm et al, (2003), having to pay taxes is not a symbol of national pride but rather a hardship. The tax collector finds it challenging to collect overdue taxes because of the idea that taxes are a hardship.

Therefore, in addition to their primary duties in ensuring the welfare and security of their residents, governments also have an additional obligation to ensure that citizens are adhered by the law. The government enforces everyone’s civic obligation to accomplish this. Every relevant tax law, regulation, and administrative action must be in place for it to be effective.

According to Alabede et al. (2011), tax compliance is measured by the extent to which rules are followed, and taxes are paid. From the author's perspective, there can be variations in the interpretation of tax compliance. As stated by James and associates, tax compliance embodies the willingness and commitment to adhere to tax regulations, policies, and administrative procedures without necessitating government

intervention through executive orders or other authoritative measures (Alabede et al., 2011). Kirchler (2007) emphasizes that documented evidence bolsters both coercive and voluntary approaches to tax compliance. Taxpayers and the government (the tax authority) can maintain a cooperative relationship and establish trust, making voluntary tax compliance feasible. Government enforcement of tax compliance through executive, judicial, and legislative actions becomes essential when the tax environment deteriorates, prompting individuals to evade payment. Such enforcement by the government occurs through the imposition of penalties, court mandates, financial audits, and the closure of businesses. According to Alabede et al. (2011) and the Organization for Economic Cooperation and Development (OECD) (2004), adherence to tax laws, policies, and administrative procedures is categorized as technical compliance.

## 2.2 Concept of Behavior Attributes

### 2.2.1 Sociological Attributes

The social life of taxpayers has an impact on compliance attitude in addition to demographic and personal elements influencing citizens' attitudes toward tax compliance. Toward this goal, Lemessa (2005) asserted that the problem of noncompliance involves relationships between individuals or groups of individuals within local communities as well as the state and society. Society has a social fabric that exists, and this fabric motivates its members to pay taxes. Opinions of justice and equity, modifications to existing laws, and reference groups are some of these variables.

One of the fundamental tenets of the design of the tax system is perceived equity or fairness. This can be understood in three ways: horizontal equity, which holds that taxpayers should pay the same amount of taxes regardless of their income or wealth

brackets; vertical equity, which holds that taxes paid rise in proportion to the tax base or taxable income; and exchange equity, which calls for taxpayers to receive the same amount of public service in exchange for their tax payment (Wallschultzky 1984; Richardson, 2006). The tendency toward tax evasion is also influenced by one's perception of the fairness of the tax system (Jackson and Milliron, 1986; Richardson, 2008).

Studies have shown that government actions and policy modifications in response to the political and economic climate have a substantial influence on taxpayer compliance with regard to the impact that policy changes have on taxpayers' attitudes toward tax compliance. Favorable political development, for instance, can have a big effect on compliance attitude. For example, a beneficial government initiative like raising the tax refund (Hasseldine and Hite, 2003) is probably going to boost taxpayer compliance. The attitude of taxpayers toward compliance is influenced by a referent group. Ajzen and Fishbein (1980) in their Theory of Planned Behavior (TPB) and Theory of Reasoned Action (TRA) suggested that people's intentions and actions concerning tax compliance are significantly influenced by their referent groups.

Messages on social norms haven't always been effective. Hernandez and colleagues (2017) discovered that their impact on Poland's personal income tax was adverse. Furthermore, Castro and Scartascini (2015) discovered that in the case of property taxes in Argentina, a message regarding descriptive social standards had no effect. Similar findings were made by Dwenger et al. (2016) regarding the impact of social norms messaging on the German church tax and Fellner et al. (2013) on the largely flimsy evidence they have regarding the rates of compliance with Austrian TV license costs. Moreover, Blume and John (2018) discovered that they caused reduced compliance rates about London's council tax.

### 2.2.2 Psychological attributes

Kroenung and Eckhardt (2017) claim that attitudes convey people's opinions—both favorable and unfavorable- about various objects. People are supposed to be motivated to act in particular ways by attitudes. Because of this, taxpayers who view tax evasion favorably are probably not as resourceful as those who view it negatively. Positive thinking, on the one hand, increases confidence in authority and, consequently, voluntary tax compliance. Understanding the basic principles of a nation's tax code is referred to as having knowledge of taxes in general (Fauziati et al., 2016).

Compliance with a nation's tax laws is influenced by entrepreneurs' comprehension of these restrictions. Tax expertise is crucial to the voluntary tax compliance approach used by a variety of companies, particularly when figuring out the correct amount of tax owed (Nabaweesi, 2017). To comply with tax rules, small business owners need to possess the requisite knowledge. According to Kamleitner et al. (2012), small business owners who wish to comply with tax laws and encourage their customers to pay must possess information particular to taxes.

A person's level of education is significantly connected to their compliance with tax obligations, according to Kirchler (2014). One of the most effective ways to enhance public understanding of taxes is through educational initiatives for taxpayers (Musau, 2015). Lumumba et al. (2010) discovered that micro, small, and medium enterprises (MSMEs) failed to meet their tax debts due to a lack of knowledge regarding the stipulations of tax laws. A limited understanding of taxes may foster distrust and a negative attitude towards taxation, whereas a strong grasp of tax issues correlates with a favorable attitude towards taxes (Niemirowski et al., 2012). Palil (2011) claims that tax literacy plays a critical role in how well taxpayers understand and comply with tax

regulations. Bobek, Hageman, and Kelliher (2013) described social norms as established conventions and guidelines recognized by group members that govern behavior without needing formal laws. They identified four types of influence: general behavioral social norms (command norms); the expectations of others regarding one's behavior (subjective norms); individual expectations of proper behavior or ethical beliefs (personal norms); and learning through the observation of behavior (descriptive norms). Consequently, when defining social norms, individuals take into account both their moral (or ethical) beliefs and external societal influences (Eriksson, Strimling & Coultas, 2015). Alm (2012) suggests that social norms play a vital role in shaping individuals' decisions to adhere to tax legislation. When these social norms are violated, compliance nearly vanishes. These findings illustrate that maintaining and strengthening social norms is crucial for ensuring a reliable flow of tax revenue if social norms are the key factor affecting taxpayer compliance levels (Jimenez & Iyer, 2016).

### 2.2.3 The concept of Digital tax administration systems

Tax compliance is being impacted by the growth of digital finance, according to a study by Kumi et al. (2023). Studies that concentrate on small firms in the digital age have shown that digital platforms can improve transparency and simplify compliance for enterprises. Additionally, PwC's (2023) study shows that digital finance makes it possible for tax authorities to record a wider variety of economic activity, including those in the unorganized sector. One way to make sure that even tiny, unofficial transactions are tracked and taxed is to connect mobile payment systems and digital wallets with tax systems. Without necessarily boosting tax rates, this widens the tax base and boosts revenue.

Ultimately, these research findings demonstrate that enhancing tax compliance necessitates a diverse strategy that integrates financial rewards, institutional confidence, and behavioral modifications. The complexity of taxpayer behavior and compliance can be better addressed by the integration of conventional and novel solutions. In order to improve the taxpayer experience in the digital economy, numerous countries have implemented digital tax administration systems (Night & Bananuka, 2020). The implementation of these systems guarantees that taxpayers follow the tax regulations and policies that are in effect in a given nation (Bassey, Mulligan, & Ojo, 2022). The government relies heavily on taxes as one of its main sources of funding. Since taxes are a major factor in any country's development, all governments in the globe depend on income to fund various aspects of their operations (Chindengwike & Kira, 2021; Lubua, 2022).

Small taxpayers have not been using a planned approach to business operations, which is something that digital tax requires. Furthermore, since most of these taxpayers lack fundamental information technology skills, they will also need to acquire them (Wassermann & Bornman, 2020). Despite this, not many studies have been done to evaluate the impact of MSMEs in Kenya using the digital tax administration system on compliance. Thus, as a contemporary method of tax administration in the digital economy, this study investigates the moderating effect of the digital tax administration system offered by the Kenya Revenue Authority (KRA) on tax compliance among MSMEs.

### 2.3 Theoretical Review

Several theories underpin tax compliance behavior. However, the Economic Deterrence Theory (Allingham & Sandmo, 1972) is the primary theory anchoring this study. This theory postulates that individuals will comply with tax laws when the cost

of evasion (e.g., penalties, fines) outweighs the benefits of non-compliance. The theory explains how enforcement mechanisms, such as digital tax administration systems, influence compliance. Given that the study examines digitalization as a moderator, this theory provides a strong foundation for understanding compliance behavior in a digital tax environment.

Besides, the Social Influence Theory (Kelman, 1958; Cialdini & Trost, 1998) explains how individuals' behaviors, decisions, and technology adoption are influenced by their social environment. This theory suggests that people comply with regulations or adopt new behaviors based on compliance, identification, and internalization.

### 2.3.1 Economic Deterrence Theory

The economic deterrence theory helps explain how taxpayer behavior is affected by elements such as tax rates, which influence the attractiveness of evasion, and the likelihood of detection along with fines and penalties for fraud, which shape the costs involved (Mendoza, Wielhouwer, & Kirchler, 2017). This suggests that if detection is probable and penalties are severe, only a small number of individuals will attempt to avoid taxes by accurately reporting their income and revenue. Conversely, when audit probabilities and penalties are low, taxpayers may opt to report a portion of their income or potentially not report it at all, leading to a higher expected rate of tax evasion. The principles of this theory form a fundamental strategy used by revenue authorities to enforce tax compliance through coercive measures (Kiow, Salleh, & Kassim, 2017).

Deterrence theory, which has its roots in criminology and is commonly utilized in the context of legal and behavioral compliance, suggests that individuals are less likely to take undesirable actions when the perceived consequences outweigh the perceived advantages. When applied to tax compliance among micro, small, and medium

enterprises (MSMEs), deterrence theory can shed light on how digital systems may alter behavioral factors affecting compliance. The adoption of digital systems, including e-filing, electronic invoicing, and real-time transaction observation, can boost the perceived likelihood of detection.

If MSMEs perceive that their transactions are being scrutinized through digital means, they might be less tempted to evade taxes due to the fear of being caught. Digital tax systems can also streamline the enforcement of penalties for non-compliance. Clear communication regarding possible fines, interest on overdue taxes, and other repercussions for tax evasion can emphasize the seriousness of penalties, thus deterring non-compliance. By merging deterrence theory with the moderating impacts of digital systems, policymakers and tax authorities can create strategies that not only increase compliance levels among MSMEs but also foster a more just and effective tax system. This method acknowledges the relationship between perceived costs and benefits while utilizing technology to enhance compliance behaviors and results.

### 2.3.2 Psychological Theory of Attribution

The Attribution Theory examines how people rationalize the reasons behind their own actions or the actions of others in their vicinity (Kamil, 2015). People build impressions through this process, drawing judgments about the things that affect their attitude. People are attempting to determine the causes of the events that have occurred. According to this view, they are consequently regarded as amateur psychologists. According to Kamil (2015), an individual’s conduct can be influenced by both internal and external factors. Individuals must adjust their behavior to the environmental changes.

The idea that an individual can regulate their conduct and vice versa stems from internal forces. Given that taxpayers' desire to pay taxes is influenced by how they view taxes in general, this hypothesis and the study are closely related. Internal and external elements will impact their interpretation or assessment of a given circumstance.

Based on the idea of attribution, tax compliance is influenced by internal factors such as taxpayers' understanding. According to McKerchar et al. (2013), social psychology models grounded in Attribution theory elucidate how people assess the reasons behind unusual behavior or acts taken by others. When it comes to making decisions, most people are ignorant and rely on their impression of the reasons behind the events and behaviors occurring in their environment (Kaplan et al., 1988).

According to attribution theory, if a taxpayer is labeled as a tax evader and tax evasion is accepted by society as an unacceptable action, this could result in a societal assessment of their irresponsibility and cause them to lose their social credibility (Arrington & Reckers, 1985). Therefore, if everyone engages in tax evasion, then this theory holds that it is a morally acceptable activity. For instance, a taxpayer may cite situational considerations to justify their actions if they are discovered failing to disclose income and claim that everyone does it.

The attribution theory states that a taxpayer's level of knowledge about the tax system can rise with schooling. An educated taxpayer is better knowledgeable about economic issues and tax regulations, and they also understand the advantages of offerings to the public (Lewis, 1982). These taxpayers might, however, object to the way the taxes that were collected would be dispersed (Ross and McGee, 2012). Higher educated people, on the other hand, have a better likelihood of evasion and

avoidance (Torgler and Schneider, 2007). Consequently, it appears that one of the primary reasons lowering tax morale is a greater level of education (Torgler, 2006; I. Lago-Penas & S. Lago-Penas, 2010).

### 2.3.3 Social Influence Theory

Social influence theory proposes that the social norms and behaviors of a person's reference group affect their attitudes and compliance toward the tax system (Snavely, 1990). It is plausible to suggest that taxes influence behavior, similar to other aspects of life. A person's reference group, including friends, neighbors, and family, can shape their attitudes and compliance behavior regarding taxes. The awareness that several members of significant groups engage in tax evasion can weaken an individual's resolve to comply. Additionally, individuals with social connections may avoid committing fraud because they fear the consequences if their deception is exposed. Furthermore, Sah (1991) argues that social influences can alter the perceived chances of detection, which can in turn affect compliance.

The social impact theory, which asserts that social norms and the level of tax compliance among a person's reference group affect tax evasion decisions, is a key behavioral explanation for tax compliance. When individuals observe their peers fulfilling their tax obligations, they are more inclined to do the same (Hallsworth et al. 2017; Alm et al. 2015; Alm and Liu 2017). Additionally, individuals may develop expectations about the likelihood of detection based on the experiences of their peers. One’s immediate social circle and the prevailing social norms regarding the importance of taxes also influence tax behavior (Posner 2000).

According to the social influence theory, an individual's attitudes and actions are shaped by those around them. This theory can provide insight into why certain

individuals are more likely to obey tax laws while others may be more inclined to evade taxes. One aspect of social influence theory, known as normative social influence, describes the tendency for individuals to conform to the expectations of others to gain approval or avoid rejection, which may affect tax compliance. The behaviors and attitudes of friends, family, and neighbors can influence an individual's decision to pay taxes. Individuals who perceive that their social circle considers non-compliance acceptable may be more likely to engage in similar behaviors. Additionally, informative social influence may be significant for tax compliance, occurring when individuals seek guidance from those they believe possess greater expertise or knowledge regarding how to act in a specific situation. Those who observe others successfully evading taxes without facing penalties may feel encouraged to follow suit.

Moreover, studies have demonstrated that social norms and peer pressure have a big influence on tax compliance rates. For instance, research indicates that educating individuals about peers' high tax compliance rates can boost their own tax payment inclination.

Social influence theory, as applied in this study, can shed light on why some people abide by the tax code while others do not. Developing ways to increase overall compliance rates can be aided by policymakers' understanding of how social factors influence attitudes and behaviors around taxation. Governments may be able to decrease instances of non-compliance and increase voluntary taxpayer participation by utilizing social influences and norms through focused interventions and communication campaigns.

### 2.3.4 Comparative Treatment Theory

The comparative treatment approach is based on equity theory and indicates that addressing imbalances in the relationship between taxpayers and the government could enhance compliance (McKerchar and Evans 2009). Individuals may not perceive their relationship with the state as a separate entity involving just the two parties. Likewise, they may barely consider their fellow citizens without reflecting on their own relationship with the government. Additionally, they could evaluate how the government treats them in relation to other citizens. Their viewpoint of the state and their impressions of fellow citizens are both likely to be influenced by this perspective (D'Arcy 2011). If the state shows favoritism towards certain groups, the connection between the beneficiary group and the state may suffer. The treatment an individual receives from the state, along with how the state interacts with them compared to other members of the broader national community, is a vital factor.

The comparative treatment approach, stemming from equity theory, suggests that eliminating inequalities in the taxpayer-government relationship may enhance compliance. It is unrealistic to view the interaction between the state and citizens as simply a two-party situation. According to Fjeldstad et al. (2012), before considering their fellow citizens, individuals also tend to reflect on their personal experiences with the government.

Their perceptions of their peers and the government may be significantly shaped by how they feel the government treats them relative to others. If the state provides preferential treatment to one group, this could affect the group's standing with the state and the benefits they receive. As such, the treatment an individual receives from the state is less significant than how they are treated in relation to their fellow citizens

in the larger national community. The perceived fairness of the tax system influences compliance decisions in various ways, including the treatment each taxpayer receives and the relationship between others' tax burdens and their compliance behavior. Walsh (2012) argues that individuals are more likely to cooperate if they believe that those around them are also fulfilling their tax obligations. The most apparent requirement for fairness is to ensure that equally situated individuals are treated equally under comparable circumstances (Jayawardane, 2015). The two main components of tax equity are horizontal and vertical equity. Horizontal equity supports tax collection based on financial status, while vertical equity asserts that wealthier taxpayers should pay the same proportion of their income as those who have less wealth (Sahu, 2021). Vertical equity pertains to individuals with varying income levels (Barjoyai, 1987).

## 2.4 Empirical Review

### 2.4.1 Effects of Sociological Influences on Tax Compliance among MSMEs

The research conducted by Nguyen (2022) examines the non-economic factors affecting the voluntary tax compliance behavior of micro, small, and medium-sized enterprises (MSMEs) in Vietnam. The data for this study was collected through a survey involving 339 tax accountants and managers from MSMEs across different regions and cities in Vietnam. The statistical software SPSS 20 was utilized to analyze the data for linear regression, exploratory factor analysis, and to assess Cronbach's alpha. The results of the study indicate that social norms, tax knowledge, personal norms, perceptions of the fairness of the tax system, and the quality of tax services significantly influence the voluntary tax compliance behavior of MSMEs in Vietnam. The greatest impact on the voluntary tax compliance practices of these businesses is

attributed to the risk of a tax audit or inspection, while the least impact comes from the quality of tax services.

Sritharan, Salawati, and Cheuk (2020) sought to clarify the influence of social variables on individual taxpayers' tax compliance behavior in Malaysia in their 2020 study. Studies on related topics show that emerging countries continue to face a gap that influences their tax compliance decisions. Malaysia's population is cosmopolitan and multiracial, which creates sociocultural factors that influence tax compliance. A person's political affiliation, religious beliefs, and cultural influence are just a few of the factors that are believed to have a big impact on their tax compliance behavior. The survey approach was used in the researcher's research design.

The target population for that was Malaysia's individual taxpayers. Using an easy sampling technique, 419 respondents made up the sample for this investigation. The data has been analyzed using multiple regression analysis and Pearson correlation. The study's findings indicate that political affiliation, referral networks, LHDN's function, and policy changes are the primary factors influencing how each individual taxpayer behaves when it comes to tax compliance. This study examined social factor variables, which at last closes the gap in the literature and aids in the development of an efficient compliance risk management strategy by tax administration.

Omar Faruque, Abdul, Mursheda, Mursheda, and Omar Faruque (2020) sought to determine the variables influencing individual income taxpayers' compliance in Bangladesh. Individual income taxpayers in each of Dhaka's fifteen zones make up the study's target demographic. The sample size is based on 385 self-assessments evaluated and 376 income taxpayers who filed general procedure returns and received the questionnaire between December 1, 2019, and February 15, 2020. The fairness,

tax penalty, and relationship to taxpayer impression of government expenditure have positive and substantial relationships with compliance, according to the ordered logistic regression model's results. The impact of referrals' compliance decisions on subsequent compliance decisions is also examined.

Individual income taxpayers make their own decisions on compliance, even when the results indicate a negative but negligible relationship between them. Ultimately, after analyzing the impact of tax law compliance costs on tax compliance, the study concluded that there is a negative correlation between the two, suggesting that compliance levels will decline as compliance costs rise. Thus, to improve taxpayer compliance, this study recommends preserving tax equity, determining the best feasible penalty levels, allocating tax income to public development initiatives, minimizing tax rates, and minimizing compliance costs.

Determining the social and economic factors that influence business income taxpayers in the Bahir Dar city administration's tax compliance behavior was the goal of Tilahun's (2018) study. Vocational compliance behavior of taxpayers is influenced by numerous things. To ensure voluntary compliance at a satisfactory level and address the difficulties effectively, any tax system should be founded on the identification of these components. The research strategy for the study is an explanatory one, and the participants are selected using stratified random sampling. For this study, which used unstructured interviews and questionnaires, data from 248 corporate-income taxpayers was gathered. Variables including tax rate, penalty, and system fairness, according to the research the opinions of taxpayers determine their voluntary compliance, it was found costs associated with compliance and government spending. Consequently, maximizing tax rates, limiting compliance costs, distributing tax revenue to noteworthy social programs, maintaining tax equality, and enforcing

acceptable and suitable fines can all help to raise the voluntary compliance rate of taxpayers.

### 2.4.2 Effects of Psychological Influences on Tax Compliance Behavior among MSMEs

Jayawardane (2015) investigated how psychological factors impact decisions regarding tax compliance. This volume highlights the 'variables of tax compliance' explored by various researchers, emphasizing the significance of psychological factors in making tax compliance decisions. It also presents the primary contributions that have sought to clarify the agreement and noticeable disagreement in evidence concerning how taxpayers' attitudes affect tax compliance through psychological influences. Nevertheless, taxpayers' attitudes have been recognized as a crucial factor significantly influencing tax compliance behavior. Numerous economic studies have shown that tax compliance depends on individual decisions regarding tax payment and evasion. These studies have further validated the 'impact' of various potential determinants of voluntary compliance on individual income or profit, such as social norms, equity and fairness, perceptions of government or political influences, and accountability in relation to tax compliance attitudes. Baeli (2021) conducted research analyzing tax compliance in relation to psychological factors and tax administration, using data collected through questionnaires distributed to 100 participants. The sampling approach relies on incidental assumptions. The findings indicate that awareness of the importance of tax payment will increase when certain conditions are satisfied, including the provision of user-friendly tax services, the establishment of a penalty system for delays (in the form of administrative sanctions), a strong desire to contribute to the nation (motivation stemming from nationalism), and the financial situations of taxpayers. It is firmly estimated that this will lead to a 95% increase in

participation in tax payments among the total taxpayer population. This significantly benefits government revenue collection.

The research conducted by Bhutta et al. (2019) aimed to explore the psychological factors influencing tax compliance behavior by utilizing variables from the extended theory of planned behavior. This investigation involved a sample of 395 individuals representing the direct taxpayer demographic residing in urban regions of Pakistan. The findings indicate that perceived behavioral control, subjective norms, attitudes towards the behavior, and moral obligation significantly influences the dependent variable, which is tax compliance behavior. The intention to comply serves as a mediator in the relationship between the independent and dependent variables. This research will assist policymakers in considering these findings when developing tax policies. Munga et al. (2021) aimed to examine the impact of psychological elements on the tax compliance of owners of micro and small enterprises in Nairobi County, Kenya. The study specifically focused on analyzing how taxpayer attitude, tax knowledge, and social norms affect tax compliance among these enterprise owners. This research was founded on the theory of planned behavior, tax morale theory, the Allingham and Sandmo theory, and Expectancy theory. An explanatory research design was employed. The target population for this study consisted of 21,100 licensed small-scale traders located in Nairobi Central Business. A sample of 384 small-scale traders was selected through a simple random sampling method. Primary data was gathered using structured questionnaires. The data obtained was analyzed quantitatively through descriptive statistics like percentages, means, and standard deviations to clarify the characteristics of the study variables. Additionally, inferential statistics such as Pearson correlation and regression analyses were performed to examine the relationships between the study variables. A multiple regression model

was developed. The results from the regression analysis indicated a positive and significant relationship between taxpayer attitude and tax compliance. Furthermore, tax knowledge demonstrated a positive and significant correlation with tax compliance. The findings also revealed a positive and significant relationship between social norms and tax compliance. The study concluded that psychological factors, including taxpayer attitude, tax knowledge, and social norms, have a positive and significant impact on the tax compliance of micro and small enterprise owners in Nairobi County, Kenya.

### 2.4.3 Effects of Perceived Risk on Tax Compliance Behavior among MSMEs

The research conducted by Nitami, Prinintha, Azrul, Bani, and Hanifiyah (2023) seeks to highlight additional factors that influence tax compliance, particularly the psychological dimensions of taxpayers and the reasons behind their behaviors. It is essential to assess how taxpayers' self-view of the system, their beliefs, and the penalties they face affect their actions before they willingly fulfill their tax obligations. This investigation utilizes a quantitative approach by employing a survey methodology. Participants completed self-administered questionnaires through Google Forms to facilitate the survey. Subsequently, the data were analyzed using AMOS Graphic along with structural equation modeling (SEM) techniques. The findings of this study indicate that the notions of fairness (including procedural, distributive, and retributive justice) do not significantly impact trust or the voluntary nature of tax compliance.

The study conducted by Eberhartinger and Zieser (2021) explores the relationship between cooperative compliance and businesses' perceptions of tax risk, the effectiveness of tax risk management, and the costs associated with compliance. The research evaluated the horizontal monitoring cooperative compliance pilot project that

was initiated in Austria in 2011, focusing on large enterprises. A sample group of similar companies operating under a traditional ex-post audit framework was used, alongside survey data collected from representatives of firms participating in the pilot project. The study also performed mediation analyses to elucidate the more complex relationships among various factors and compared the two groups to identify differences. The results reveal significant relative reductions in both tax risk and compliance costs for firms engaged in horizontal monitoring, along with a notable increase in tax certainty. However, while horizontal monitoring firms did not demonstrate greater progress in tax risk management compared to the control group, their initial level of tax risk management at the outset of the pilot project was significantly higher.

The research carried out by Utama, Nimran, Hidayat, and Prasetya (2022) explored how e-filing, perceived risk, and religiosity affect the willingness to comply with tax obligations. One of the quantitative approaches used in this investigation was the Structural Equation Model (SEM). Given that agencies and individuals are generally the largest contributors to taxes, the study's population consisted of 529 companies from the Directorate General of Taxation of Large Taxpayers within Jakarta's Large Tax Service Offices 1 and 2. Religiosity (X1) and perceived risk (X2) significantly influence Attitude (Y1). Moreover, a significant positive relationship exists between Attitude (Y1) and Tax Compliant Intention (Y2). In this research model, e-filing was found to have a minimal moderating effect. The innovative aspects of this study include the addition of variables such as taxpayer perceived risk and religiosity that affect taxpayer compliance behavior within the Theory of Planned Behavior.

Additionally, the e-filing variable acts as a moderating variable in this investigation. The study conducted by Soliz (2015) aimed to assess how perceived financial risk and taxpayers' ethical orientations influence tax compliance and how tax preparers impact compliance decisions. This research contributes to existing studies on tax compliance by investigating the role of the tax preparer in a controlled experimental setting, particularly in situations where income is not reported to a third party and the tax laws are straightforward, yet noncompliance still occurs. By assigning participants an income-earning task rather than providing them with an endowment or theoretical tax scenario, this study advances previous research in this field. Participants in this study experience a sense of income ownership similar to actual taxpayers, as they receive a paycheck. Finally, this research enhances current studies on risk assessment by introducing a domain-specific risk perception measurement scale. For individuals, perceived risk can differ across various domains of risk. Therefore, it is advantageous to employ a financial risk perception scale instead of a general risk measure that includes non-financial elements. Concerning the enforcement message from tax preparers, a significant main effect was observed. Individuals who received a message with a high level of enforcement tended to comply much more than those who received a lower enforcement message.

Furthermore, a strong relationship was discovered between taxpayers' financial risk perception and their ethical orientation, indicating that the impact of ethical orientation on tax compliance depends on the level of perceived financial risk. More specifically, an individual's ethical reasoning does not substantially influence tax compliance when perceived financial risk is low. Conversely, individuals with lower ethical reasoning are significantly less compliant than those with strong ethical reasoning in situations where they perceive high financial risk. As for overall

compliance, the findings highlight a strong positive correlation between complete compliance and high ethical reasoning. This information could be useful for policymakers and regulators in developing more effective strategies to enhance individual tax compliance.

### 2.4.4 The Moderating Effect of Digital Tax Administration Systems

The potential of digital technology for organizing and transforming the tax administration process was examined in research by Nazarov, Mikhaleva, and Chernousova (2020). Modern technology integration makes it possible to offer real-time tax management. Finding specific elements that influence the effectiveness of tax administration procedures was made possible by evaluating the use of the newest technology. The analysis of the efficiency of using contemporary digital technology for tax administration and the identification of critical factors influencing that efficiency were accomplished during the study.

In the Tanga regional office of the Tanzania Revenue Authority, Mbise and Baseka's (2022) study evaluated the effect of the digital tax administration system on compliance among micro small and medium-sized firms (MSMEs). A quantitative strategy was used by the researchers. MSMEs provided information using questionnaires. To ascertain the relationship between digital tax and compliance, the study used regression analysis and descriptive analysis in its investigation. 133 randomly chosen samples, representing 254 small taxpayers, were employed in the study. The results showed that MSMEs' compliance is significantly influenced by the digital tax administration system. Future research in Tanzania's other tax zones or other parts of the world, according to the researchers, should be carried out.

Ihnatišinová's (2021) paper aimed to evaluate the impact of global digital era megatrends, including automation, on the evolution of tax administration communication channels. As a research method, it combines quantitative and qualitative analysis tools. Specifically, an analysis of the development and current state of digital communication strategies implemented by OECD countries, a comparison of digital communication practices between Slovakia and the OECD, and an investigation of the use of artificial intelligence as cutting-edge information technology in the context of tax administration communication. The main conclusions have made it possible for us to highlight global automation trends as well as fresh, practical uses for real-time digital engagement. It is recommended that Slovakia move to new digital communication technologies for tax administration, make investments in state-of-the-art technology, especially artificial intelligence, and concurrently set obstacles for the development of digital capabilities among tax administration employees.

## 2.5 Conceptual Framework

The conceptual framework for this study is designed to provide a structured approach to understanding the relationships between various variables and compliance behavior. The framework integrates concepts behavioral attributes, digital tax administration systems and tax compliance.

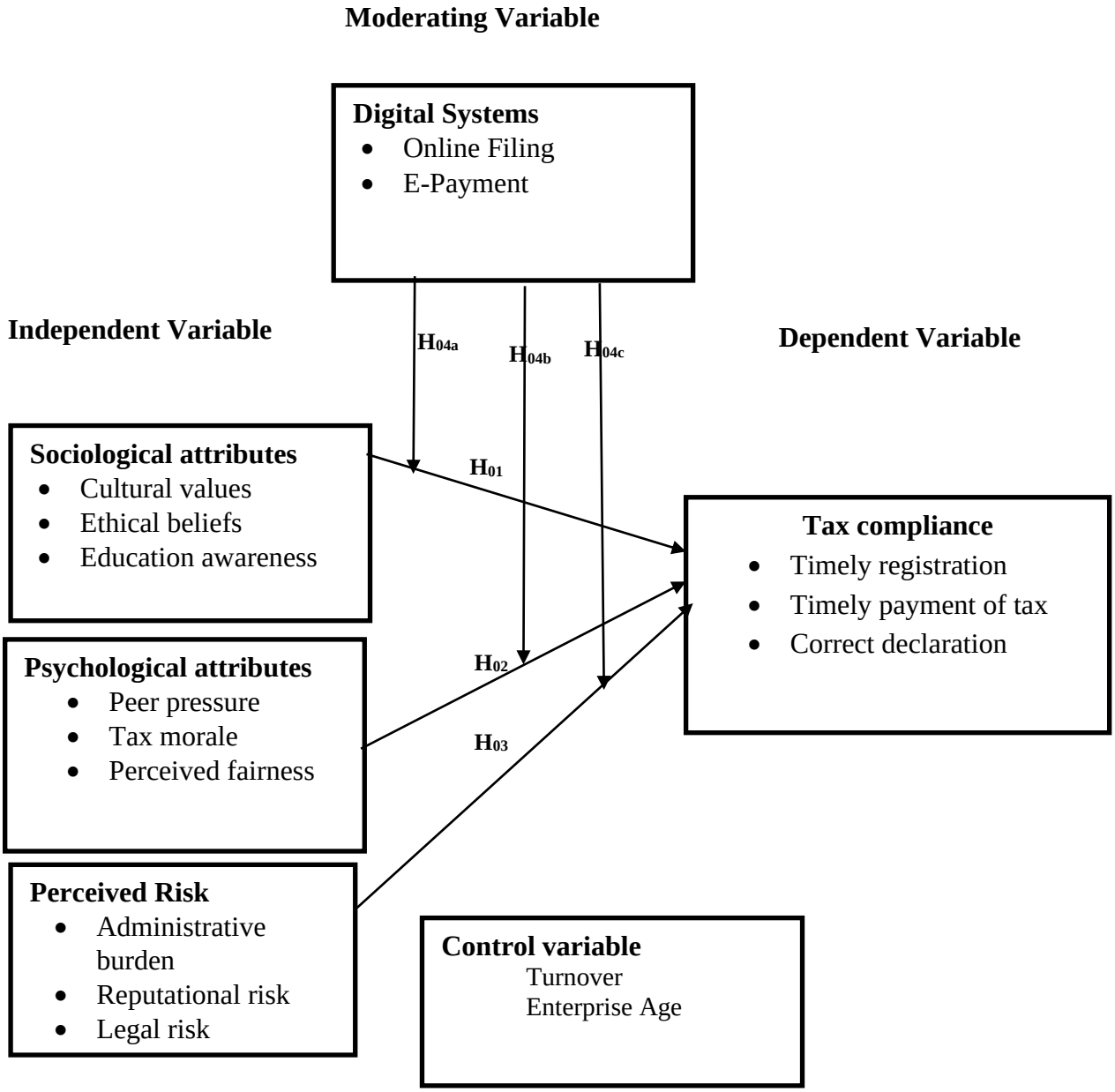



**Figure 2. 1: Conceptual framework**

## 2.6 Research Gaps

The majority Prior studies focus on showcasing the systems that are implemented and specified in financial organizations to get an advantage. These include Lumumba, Wanjohi, and Magutu (2010), who looked at how taxpayers' attitudes affected compliance behavior among MSMEs in Kerugoya town; Magiya (2016), who studied the factors influencing tax compliance among 23 small and medium-sized businesses in the Nairobi East tax district; and Thiga and Muturi (2016), who studied the factors influencing tax compliance among Kenyan MSME's.

Tax information, penalties, and assessment compliance in Nigerian small- and medium-sized enterprises were the subjects of a study conducted by Adesina and Obazee (2016). The researchers noted that the results showed that tax learning had a significant positive impact on tax compliance while tax penalties had a negligible positive impact. Taxpayers' perceptions of government accountability, transparency, and reduced fiscal corruption were studied by Adeyeye and Otosan (2018) in order to determine their impact on voluntary tax compliance. They discovered that the combined effects of these factors appear to have a greater impact on voluntary tax compliance.

Tax information, administration, and taxpayers' compliance knowledge were examined by Okoye, Akenbor, and Obara (2012) in Ekiti State Manufacturing Firms. The study's findings indicated that tax data and learning had a positive and significant impact on taxpayer compliance. None of the research, meanwhile, has examined the moderating effect of digital tax administration systems on the association between certain taxpayer behavioral characteristics and tax compliance among MSMEs in Kenya's Nairobi County's Embakasi Sub-County.

While these previous studies have examined the direct relationship between behavioral attributes and tax compliance, this study introduces digital tax administration systems as a moderating factor, a relatively underexplored area in MSME tax compliance research in Kenya. The new contribution of this research lies in its examination of how digital tax administration systems moderate the effects of sociological attributes, psychological attributes, and perceived risk on tax compliance among MSMEs. Unlike previous studies that focused on direct effects, this study provides a more nuanced understanding of how technology influences tax behavior.

Furthermore, most prior research has been conducted in developed economies where digital tax systems are fully integrated. This study fills a gap by analyzing the effectiveness of digital tax administration in a developing economy where digital adoption among MSMEs is still evolving.

# CHAPTER THREE

# RESEARCH METHODOLOGY

## 3.0 Introduction

This chapter outlines the research methodology employed in the study. The methodology describes research design, data collection methods, sampling techniques, data analysis procedures, and ethical considerations.

## 3.1 Research Design

Research design, according to Sileyew (2020), offers a structure or plan for carrying out research, assisting the investigator in devising a plan for gathering, analyzing, and interpreting data as well as presenting the results or conclusions from the data collected throughout the study time. The precise strategy that a researcher chooses or adheres to in order to carry out a particular study more thoroughly and logically is known as the research design. It also comprises the strategies for obtaining, calculating, and evaluating the information the researcher has gathered.

This research utilized an explanatory research design, which provided a comprehensive investigation into how the digitalization of tax administration systems moderates the connection between behavioral traits and tax compliance among MSMEs in Embakasi Sub-County, Nairobi County, Kenya. Explanatory research design was chosen because it allows for the identification of causal relationships between independent, dependent, and moderating variables. This design is appropriate since the study seeks to explain how digital tax systems moderate the effect of sociological attributes, psychological attributes, and perceived risk on tax compliance among MSMEs. Explanatory research also facilitates hypothesis testing using statistical models such as regression analysis. (Saunders et al., 2019). The research

design facilitated the collection of varied viewpoints from taxpayers engaged in the digital economy. This research design allowed the researcher to gather data from a randomly selected group of respondents within the MSMEs at the specified location in Embakasi Sub-County, Nairobi, Kenya. Furthermore, the research design enabled the random sampling of participants, leading to more accurate results from a larger pool of respondents.

### 3.2 Target Population

The target population refers to a set of individuals (or firms/organizations) sharing a specific characteristic that researchers can investigate, according to Creswell (2013). Zikmund et al. (2013) describe a population as a large group of all subjects from which a sample is drawn. Kombo and Tromp (2009) explain that the target population consists of a collection of people, objects, or items from which samples are selected for assessment. The target population for the study were MSMEs in Embakasi subcounty in Nairobi County that employ 5- 99 permanent employees. The choice of service, trade, and manufacturing sectors was informed by their significant contribution to the economy and their representation in the tax base. According to the Kenya National Bureau of Statistics (KNBS, 2023), these three sectors collectively account for over 80% of MSME activities in urban centers, making them critical for studying tax compliance behavior. There were 1,843 SMEs of which 342 were manufacturing employing 11-49 permanent employees and 647 were service employing 50- 99 permanent employees and about 854 were engaged in trade (Business Register Nairobi City County, 2024).

**Table 3. 1: Target Population**

| ENTERPRISES | NUMBER |
|---|---|
| Service | 647 |
| Trade | 854 |
| Manufacturing | 342 |
| **TOTAL** | **1,843** |

Source: Business Register, Nairobi City County, 2024

### 3.3 Sampling Design and Procedures

Sampling techniques pertain to the method of choosing a representative sample to identify the criteria through which the researcher selects appropriate respondents from the target population (Adams et al., 2007). According to Saunders et al. (2014), sampling is defined as a method that permits the selection of a subset from the entire population. Therefore, the sampling method should ensure the selection of a sample that accurately represents the target population (Cooper & Schindler, 2014). The sample frame for this study was drawn from the licensing records of Nairobi County (2024). The sample was taken from three specific industrial clusters based on their geographical distribution. The first cluster consisted of manufacturing MSMEs located in the Industrial area, the second cluster included manufacturing MSMEs in the Ruaraka/Baba Ndogo Industrial area, and the third cluster encompassed MSMEs in the Kariobangi Industrial cluster.

Special attention was given during sampling to ensure a proper representation of micro, small, and medium enterprises, proportionate to the target population of these businesses. In the second stage of sampling, stratified random sampling was employed to choose MSMEs from the three clusters. Stratification was essential due to the diversity of MSMEs concerning their size and the types of activities they

engaged in. This study implemented stratification based on the size of enterprises, categorizing them as either small or medium. Enterprises were randomly chosen from each stratum to reduce bias. The Yamane, (1967) sample size calculation formula was used to arrive at a sample size of 329 SMEs as follows;

$$n = \frac{N}{1 + N(e)^2}$$

Where:

n = Sample size

N = Population size

e = the error of Sampling

Hence

$$\frac{1{,}843}{1 + 1{,}843(0.05)2}$$

= 329

The sample of 329 were distributed as indicated in Table 3.2, whereby the sample distribution was based on the percentage numerical strength of each stratum.

**Table 3. 2: Sample Size**

| **Enterprise** | **Population (N)** | **Sample Size (n)** | **% n/N*100** |
|---|---|---|---|
| Service | 647 | 116 | 35.3 |
| Trade | 854 | 152 | 46.2 |
| Manufacturing | 342 | 61 | 18.5 |
| **Total** | **1,843** | **329** | **100** |

## 3.4 Data Types and Sources, Collection and Procedures

### 3.4.1. Data Types and Sources

The research utilized primary data to examine how the digitalization of tax administration systems influences the link between behavioral characteristics and tax compliance among manufacturing micro, small, and medium enterprises (MSMEs) in Embakasi Sub-County, Nairobi, Kenya. Primary data refers to the gathering of original information specifically for a designated purpose by a researcher (Kotler et al., 2005). As noted by Driscoll (2011), "the main aim of conducting primary research is to discover new information that can be verified by others and to reduce personal biases during the process." Data was gathered from participants through the use of questionnaires. Best & Kahn (2008) state that closed-ended questions provide quantitative data.

### 3.4.2. Data Collection Instruments

Primary data was gathered using a structured questionnaire that captured various aspects of the study. Questionnaires consist of a series of questions that provide responses from research participants in a standardized manner. As noted by Kombo and Tromp (2006), a questionnaire serves as a research tool that collects data from a large sample size. Most questionnaires aim to gather pre-structured data and typically include a set of response options for participants to choose from, although some may feature open-ended questions that give respondents the freedom to express their answers more freely; additionally, others ensure that all participants respond to the same questions in a consistent sequence and wording, with uniform answer choices (Matthews & Ross, 2010). Kothari (2008) points out that questionnaires are generally free from bias introduced by interviews because the responses are recorded in the respondents' own words. Respondents were given sufficient time to provide

thoughtful replies. A questionnaire is an effective research tool that the researcher employed to gather personal insights from participants. It also enables participants to share their perspectives on the topic being investigated (Matthews & Ross 2010). The questionnaire was crafted to meet specific objectives and included closed-ended questions.

### 3.5 Data Collection Methods

The data was collected from a primary source whereby structured questionnaires were distributed to MSME owners/managers in the Embakasi subcounty in Nairobi County. The questionnaires were adopted and developed with some modifications from previous similar studies such as (Pali 2010); (Tillahun and Yiedersal, 2014); (Niway and Wondwossen, 2016). Closed-ended questionnaires were prepared in the form of five Likert-Scale, where; Strongly Agree (SA) = 5; Agree (A) = 4; Neutral (N) =3, Disagree (D) = 2; and Strongly Disagree (SD) = 1; the use of Likert scale was to make it easier for understanding, reduce confusion in reading and answering the questionnaire by respondents.

According to (Ajayi, 2017) primary data refers to the data originated by the researcher for the first time. It involved data that has not been published yet and is more reliable, authentic and objective.

### 3.6 Data Collection Procedure

Given the nature of the survey interaction, the researcher sought assistance from two research assistants who distributed the questionnaires (through drop and pick approach) to the respondents and thereafter did a follow-up to ensure they are well completed. For those respondents that were not available to attend to the physical questionnaire, the researcher provided an online questionnaire whereby they were filled in and returned.

### 3.7 Pilot Testing

Pilot testing is an important component of the data collection process. A pilot test on a selected sample of respondents was conducted in Machakos County to ascertain the validity and reliability of the questionnaire before being administered to the target population. It is usually a small-scale trial run on all the procedures planned for use in the main study. According to Cooper and Schindler (2010) and Mugenda & Mugenda (2003), a sample of at least 10% of the population is usually acceptable in a pilot study. Machakos County was selected for the pilot study because it shares similar economic characteristics with Embakasi Sub-County, including a high concentration of MSMEs in trade, service, and manufacturing sectors. However, it is geographically distinct, reducing the risk of contamination in the main study population while allowing for refinement of the research instrument. This approach aligns with best practices in survey-based research to ensure validity and reliability (Mugenda & Mugenda, 2019).

### 3.8 Reliability and Validity Testing

Ensuring the trustworthiness and accuracy of research tools is essential for any study's integrity. According to Creswell (2014), the importance of data validation across the research process serves as a means to check and promote consistency and validity, which are critical for the generalizability and dependability of the results. This study utilized reliability testing to confirm the consistency of the measures by employing dependable instruments that produce the same outcomes in similar situations, along with test-retest reliability, which involved giving the same assessment to the same group at two distinct times. The research applied construct validity to assess whether the tools effectively measure the theoretical constructs they are designed to evaluate. This was accomplished through Factor Analysis, a statistical technique used to reveal

underlying relationships among the measured variables. Utilizing these tests for reliability and validity supported the assurance that the research instrument used in the investigation of MSME's compliance was both stable and accurately reflected the intended concepts. Consequently, this bolstered the credibility and generalizability of the study's results.

### 3.9 Data Analysis

According to Etikan et al. (2016), data analysis entails the examination, purification, transformation, and visualization of data, primarily aiming to provide informative insights and propose conclusions and suggestions. Cooper and Schindler (2010) state that data analysis involves the editing of data and the process of condensing it into a more manageable size while generating summaries and identifying patterns through the application of statistical methods. For the purpose of this research, the gathered data was revised, purified, and categorized to ensure completeness. Both descriptive and inferential statistics, along with an ANOVA test, were utilized to analyze the cleaned data. Additionally, hierarchical multiple regression analysis was conducted on the variables under study to explore the causal relationships between the independent and dependent variables.

### 3.10 Measurement of the Study Variables

A questionnaire survey consists of a carefully structured set of questions that respondents answer, typically within narrowly defined options (Sekaran, 2003). The questionnaire is divided into three sections. Section A includes questions related to demographic information. Section B focuses on tax compliance behaviors among MSMEs. The instrument for assessing tax compliance attitudes was created based on earlier research, which has demonstrated reliability (Alleyne & Harris, 2017; Bani-Khalid et al., 2022; Ojo & Shittu, 2023).

Section B has further been segmented into three parts, each representing one of the independent variables in the study: sociological determinants, psychological factors, perceived risk, and the moderating effect of digital tax administration systems. The sociological and psychological behaviors were assessed using instruments adapted from prior studies on MSME taxpayers (Bobek et al., 2013; Faizal et al., 2017), while the subjectivity of norms was based on research highlighting the influence of social norms on tax compliance behavior, referencing studies by (Bani-Khalid et al., 2022; Bobek et al., 2013). Additionally, further proxy statements were taken from the work of Charles, Ibrahim, and Williams (2020), Ahmad and Hijjatulah (2019), Olaoye and Ekundayo (2020), and Aladejebi (2018). Proxy statements concerning the digitalization of tax administration were drawn from the research of Night and Bananuka (2018).

Control variables such as turnover and enterprise age of a business are additional factors influencing tax compliance behavior among MSMEs as indicated in prior literature. Proxy measures for these variables were adopted from the works of Eichfelder & Vaillancourt (2014) and Sapiei (2012).

### 3.11 Operationalization and Measurement of Variables

Table 3.3 presents the measurements and operationalization of the study variables.

**Table 3. 3: Operationalization of Variables**

| **Variables** | **Indicators** | **Source** | **Measurement Scale** | **Data collection instrument** | **Type of analysis** |
|---|---|---|---|---|---|
| **Independent** Sociological attributes | • Cultural Values<br>• Education awareness<br>• Ethical beliefs | Islam *et al*. (2020) | 5-point Likert scale | Questionnaire | Correlation . Regression Analysis. |
| **Independent** Psychological attributes | • Peer pressure<br>• Tax Morale<br>• Perceive fairness | Faizal et al., 2017) | 5-point Likert scale | Questionnaire | Correlation . Regression Analysis. |
| **Independent** Perceived Risk | • Reputational risk<br>• Administrative burden<br>• Legal risk | David Parsly, (2020) | 5-point Likert scale | Questionnaire | Correlation Regression Analysis. |
| **Moderator** Digital system | • Online filing<br>• E- Payment | Loo *et al*. (2021) | 5-point Likert scale | Questionnaire | Correlation Regression Analysis. |
| **Dependent** Tax compliance | • Timely payment of Tax<br>• Timely registration<br>• Correct declaration | KRA, (2020) | 5-point Likert scale | Questionnaire | Correlation . Regression Analysis. |
| **Control** | • Turnover<br>• Enterprise Age | Eichfelder & Vaillancourt, 2014; | 5-point Likert scale | Questionnaire | Correlation . Regression Analysis. |

### 3.12 Conditions for Moderation

Cohen et al. (2003) highlighted the significance of moderators, emphasizing their essential role in theory testing within the social sciences. In examining whether digital tax administration systems influence the relationship between behavioral attributes and individual taxpayer compliance, the researcher utilized the regression model developed by Aiken & West (1991). A moderator is defined as a third variable that modifies the degree of a causal relationship (Chikaraishi, Fujiwara, Kaneko, Poumanyvong, Komatsu & Kalugin, 2015). These variable influences either the direction or intensity of the relationship among the variables under study. The research employed hierarchical multiple linear regression to investigate moderation effects. Initially, control variables in the model were regressed against tax compliance to identify any potential direct impacts. Next, both control variables and independent variables (sociological, psychological, and perceived risk) were regressed against tax compliance. Finally, the moderating variable was included and regressed alongside the other variables.

### 3.13 Model Specification

In this study, a hierarchical multiple regression model was used to determine the effects of various independent variables on the dependent variable. Besides, inferential statistics (regression analysis, correlation analysis) were to identify relationships between variables and determine the factors significantly affecting Tax compliance. This study constituted a dependent variable (Tax compliance) that seemed to affect several independent variables. Thus, the analysis entailed testing the extent or degree to which these variables affect the dependent variable individually and when they are combined. A study by KIM (2015) pinpoints the significance of

multiple regression analysis in cases like this. The study, therefore, employed the following linear function to express the relationship between these variables.

$Y = \beta_0 + \beta_1 TO + \beta_2 YOP \propto$ ..... **Model 1**

$Y = \beta_0 + C + \beta_3 SA + \beta_4 PA + \beta_5 PR + \varepsilon$ ..... **Model 2**

$Y = \beta_0 + C + \beta_3 SA + \beta_4 PA + \beta_5 PR + \varepsilon + \beta_6 DS + \varepsilon$ ..... **Model 3**

$Y = \beta_0 + C + \beta_3 SA + \beta_4 PA + \beta_5 PR + \varepsilon + \beta_6 DS + \beta_7 SA * DS + \varepsilon$ ..... **Model 4**

$Y = \beta_0 + C + \beta_3 SA + \beta_4 PA + \beta_5 PR + \varepsilon + \beta_6 DS + \beta_7 SA * DS + \beta_8 PA * DS + \varepsilon$ ..... **Model 5**

$Y = \beta_0 + C + \beta_3 SA + \beta_4 PA + \beta_5 PR + \varepsilon + \beta_6 DS + \beta_7 SA * DS + \beta_8 PA * DS + \beta_9 PR * DS + \varepsilon$ ..... **Model 6**

Where;
Y= Tax Compliance
SA = Sociological Attributes
PA= Psychological attributes
PR= Perceived Risk
DS = Digital systems
C = Control Variable (Enterprise age and Turnover,)
$\beta_0$ = Constant (the intercept of the model)
$\beta_1 - \beta_9$ = Coefficients of (independent) variables

### 3.14 Diagnostic Tests

In scientific studies, diagnostic tests are typically performed to empirically assess the impact of design flaws on the estimates of diagnostic accuracy (Lijmer et al., 1999). In this research, various diagnostic tests were conducted before data analysis to verify the accuracy of the findings. The tests included evaluations of linearity, normality, multicollinearity, and homoscedasticity.

#### 3.14.1 Linearity Test

The linearity test was performed to assess whether the relationship between independent and dependent variables is linear. The linearity assumption was evaluated using ANOVA test. According to Csorgo (1985), if the p-value for deviation from linearity is greater than 0.05, then the assumption of linearity is upheld; conversely, if

the p-value is less than or equal to 0.05, it indicates that the linearity assumption has been breached.

### 3.14.2 Test of Normality

Multiple regression presupposes that the dataset being analyzed follows a normal distribution (Osborne & Waters, 2014). “It is predicted that the errors are normally distributed, and a graph of the residual values should resemble a normal curve (Keith, 2006). Variables that do not follow a normal distribution can skew relationships and affect significance tests (Osborne & Waters, 2014).The Kolmogorov-Smirnov and Shapiro-Wilk test was chosen due to its status as the most robust normality test (Razali & Wah, 2011). Results exceeding 0.05 ($p > 0.05$) indicate that the data is normally distributed.

### 3.14.3 Multicollinearity Test

Multicollinearity occurs when there is a strong correlation among the independent variables (Keith, 2006). "Researchers can interpret regression coefficients as the influences of the independent variables when collinearity is low (Keith, 2006)." An increase in multicollinearity leads to higher standard errors for the coefficients, which can render some variables statistically insignificant when they should actually be significant (Osborne and Waters, 2014). According to Bowerman and Connell (2006), it is preferable to have lower VIF levels, while higher VIF levels can negatively impact the outcomes of multiple regression analysis. The authors noted that a VIF exceeding 10 suggests significant levels of multicollinearity.

### 3.14.4 Homoscedasticity Test

Homoscedasticity refers to the condition where the variance or distribution of errors around the regression line remains constant. According to Lani (2011), in the context of regression, an error represents the distance a data point deviates from the fitted

regression line. A key assumption of linear regression is that the variation of the residuals or error terms is uniform throughout the entire graph; if this assumption is not satisfied, the statistical findings may become unreliable because of biased coefficients. In this research probability of Chi-Square was used. A p-value greater than 0.05 suggests that the homoscedasticity assumption is not violated.

### 3.15 Ethical Considerations

Before commencing the research and data collection, the researcher obtained permission and approval from Moi University, KESRA, and other pertinent authorities, including the National Commission for Science, Technology and Innovation (NACOSTI), the Kenya Data Protection Commissioner, and the Nairobi County government. Following that, the study acquired informed consent from participants: they were given comprehensive information regarding the study's objectives, methodology, and any potential risks and advantages before their consent was obtained. Additionally, the researcher took steps to ensure the confidentiality of each respondent by implementing strategies that promote the anonymity of participants. Participation in the study was entirely voluntary, and participants were granted the right to withdraw at any time without facing any penalties.

# CHAPTER FOUR

# DATA ANALYSIS, PRESENTATION AND INTERPRETATION

## 4.0. Introduction

This chapter outlines the research results of the investigation into how digital systems influence certain behavioral traits related to tax compliance among micro, small, and medium enterprises (MSMEs) in the Embakasi sub-county Nairobi County, Kenya. It includes the response rate, descriptive statistics, assumption tests for regression analysis, and the presentation of inferential statistical findings.

## 4.1. Response Rate

The response rate is crucial in research because attaining an adequate response rate guarantees valid, trustworthy, and reliable findings (Sataloff & Vontela, 2021). Following a thorough examination of all the questionnaires collected, we verified their completeness and consistency, discarding any that contained inconsistencies or inaccurate information from the analysis. The response rate was calculated by dividing the number of valid or usable questionnaires returned by research assistants by the total number of questionnaires distributed.

The study was able to collect 285 questionnaires from 329 that had been distributed representing 86.63% out of which 44 were either incomplete or defective and were not entered into the study. Hiebl and Richter (2018) state that a response rate exceeding 70% is deemed satisfactory for a social study, since it allows for the formulation of reliable research results. Hence, the researcher deemed the response rate of 86.63% to be satisfactory since it exceeded the threshold of 70% and would yield ample data for analysis and drawing inferences from the study.

**Table 4. 1: Response Rate**

| | **Count** | **Percentage** |
|---|---|---|
| Distributed | 329 | 100.00 |
| Returned | **285** | **86.63** |

**Source: Field Data, 2024**

**Table 4.1. 1: Response Rate Distribution**

| **Enterprise** | **Distributed** | **Returned** | **percentage** |
|---|---|---|---|
| Service | 116 | 102 | 87.93% |
| Trade | 152 | 132 | 86.84% |
| Manufacturing | 61 | 51 | 83.61% |
| **Total** | **329** | **285** | **86.63%** |

**Source: Field Data, 2024**

### 4.2. Analysis of Outliers

An outlier is a data point that shows a significant departure from expected values or falls outside the usual range. Outliers were identified using case-wise assessment and the Mahalanobis distance test (Osborne & Overbay, 2019). Screening for outliers in the data is essential because their existence could disrupt the normality of the dataset, violating a key assumption of the study. Consequently, linear regression methods in SPSS were employed to compute Mahalanobis' D2, leading to the calculation of the Chi-square value. Therefore, a case was deemed a multivariate outlier if its D2 yielded a probability of less than 0.001. In summary, a total of five (5) cases were identified as significant anomalies. The researcher removed these cases from further analysis and proceeded with a total of 280 cases for the analysis.

**Table 4. 2: Outlier Analysis Test**

Residuals Statistics

| | Minimum | Maximum | Mean | Std. Deviation | N |
|---|---|---|---|---|---|
| Mahal. Distance | .444 | 22.145 | 3.986 | 3.854 | 280 |

a. Dependent Variable: TC

### 4.3. Reliability of Instruments

Evaluating reliability is crucial as it examines the consistency across all components of the measurement document (Park, 2021). Reliability refers to the extent to which a research tool, like a questionnaire, produces reliable information in different research settings (Papadopoulos et al., 2018). The text demonstrates how reliable the research tool is in generating consistent and accurate outcomes across various environments. The study utilized Cronbach's Alpha coefficient test to evaluate the instruments' consistency and reliability. The findings of the reliability coefficient, outlined in Table 4.3, indicate that all study variables exceeded the advisable threshold of 0.70. In particular, tax compliance behavior registered a reliability coefficient of 0.716, sociological characteristics recorded a reliability coefficient of 0.728, psychological characteristics scored a reliability coefficient of 0.732, perceived risk achieved a reliability coefficient of 0.725, and the digitalization of tax administration systems attained a reliability coefficient of 0.810.

**Table 4. 3: Reliability Analysis**

| Variable | Cronbach's Alpha | No of Items | Comment |
|---|---|---|---|
| Tax Compliance Behaviour | .716 | 8 | Reliable |
| Sociological Attributes | .728 | 7 | Reliable |
| Psychological Attributes | .732 | 8 | Reliable |
| Perceived Risk | .725 | 7 | Reliable |
| Digitalization of Tax Systems | .810 | 8 | Reliable |

**Source: Field Data, 2024**

### 4.4. Factor Analysis

Before performing variable reduction, it's important to evaluate the sufficiency of the study sample, which was assessed using the Kaiser-Meyer-Olkin test (KMO). Variables that have KMO values greater than 0.50 are considered appropriate for factor analysis, according to Kaiser (1974), indicating that the sample is fit for this approach. For processing the data and reducing its dimensionality, this research employed principal component analysis (PCA) as an effective method. Hasan and Abdulazeez (2021) mention that the aim of PCA is to extract pertinent information from the data and to represent the patterns of similarity among both observations and variables.

#### 4.4.1. Factor Analysis for Tax Compliance

The tax compliance variable was evaluated using eight items which were analyzed through principal component analysis. The Kaiser Meyer-Olkin (KMO) measure of sampling adequacy was found to be 0.646, surpassing the recommended threshold of 0.5 (Kaiser, 1974), and the Bartlett's Test of Sphericity (Bartlett, 1954) produced a statistically significant result with $p = 0.000$, indicating that the samples adequately represented the population. As shown in Table 3.4, the KMO test statistic recorded for the study was 0.646. According to Kaiser (1974), KMO values above 0.5 are deemed statistically sufficient, thus the score of 0.646 obtained in this study reflects adequate sampling. Besides the KMO test, the result from Bartlett's Test of Sphericity was highly significant, with a value of 1000.062 at 28 degrees of freedom and a significance level of $P < 0.05$. The P value achieved from Bartlett's Test of Sphericity was 0.000, indicating a statistically meaningful correlation among the constructs in the data set. Kothari (2014) noted that for KMO and Bartlett's tests to be deemed valid, their significance level should fall below 0.05. These outcomes suggest that

further statistical analysis is necessary. With regards to the tax compliance variable, the results of the rotated component matrix, utilizing varimax with Kaiser normalization rotation, are displayed in Table 4.4.

**Table 4. 4: Tax Compliance Rotated Component Matrix**

| | Component | | |
|---|---|---|---|
| | 1 | 2 | 3 |
| I have been paying my tax obligations on time | .912 | | |
| I have been paying my tax obligations correctly | .871 | | |
| I have no problem in complying with my tax obligation | .724 | | |
| I am not ignorance of some legislation changes in tax compliance | | .869 | |
| I am not confused by the use of tax law's ambiguities and gaps in taxpayers' favors | | .668 | |
| I make timely payments of the owed taxes without any enforcement activity. | | .628 | |
| Given a chance, I would not file my returns | | | .799 |
| I am fully satisfied with all tax requirements imposed by KRA | | | .784 |
| Eigen Value 1.078 | | | |
| % of Variance: Component 1 41.297 | | | |
| Component 2 18.437 | | | |
| Component 3 13.480 | | | |
| Cumulative % 73.215 | | | |
| KMO 0.646 | | | |
| Bartlett's Test of Sphericity, Approx. ChiSquare 1000.062 | | | |
| df 28 | | | |
| Sig. .000 | | | |

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 7 iterations.
**Source: Field Data, 2024**

The principal component analysis (PCA) was employed to extract three components. The cumulative variance contributed by the three components was 73.215% with the first component accounting for 41.297% while the second accounted for 18.437% of the cumulative variance and the third component accounted for 13.480% of the cumulative variance.

### 4.4.2. Factor Analysis for Sociological Attributes

Sociological characteristics were evaluated through seven items that underwent principal component analysis. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was recorded at 0.602, surpassing the recommended benchmark of 0.5 (Kaiser, 1974), while Bartlett's Test of Sphericity (Bartlett, 1954) demonstrated significant statistical relevance with a p-value of 0.000, confirming that the samples adequately represent the population. Table 4.5 indicates that the KMO statistic for this study is 0.602. According to Kaiser (1974), KMO values over 0.5 are statistically satisfactory. The score of 0.646 in this investigation suggests that the sampling was sufficient. Alongside the KMO evaluation, Bartlett's test of sphericity produced a highly significant output, recording a value of 1022.040 with 15 degrees of freedom and a significance level of $P<0.05$. The p-value from Bartlett's Test of Sphericity was 0.000, indicating a statistically significant relationship among the constructs within the dataset. Kothari (2014) emphasized that for the KMO and Bartlett's tests to be deemed suitable, their significance level must be below 0.05. These results indicate the need for further statistical analysis. Regarding the sociological attributes variable, the outcomes of the rotated component matrix, employing varimax with Kaiser normalization rotation, are presented in Table 4.5. The principal component analysis (PCA) was used to derive three components. The total variance explained by these three components was 86.498%, with the first component representing 47.059%, the second contributing 22.686%, and the third accounting for 16.752% of the total variance.

**Table 4. 5: Sociological Attributes Rotated Component Matrix**

| | Component | | |
|---|---|---|---|
| | **1** | **2** | **3** |
| My level of tax compliance is determined by what most people suggest I should do. | .969 | | |
| My level of tax compliance is determined by what I think other people do. | .943 | | |
| My level of tax compliance is influenced by what people close to me suggest I should do | .888 | | |
| I trust in the tax authority | | .885 | |
| My personal belief is that it is important to pay taxes. | | .850 | |
| I believe that procedures for tax filing are too complicated | | | .998 |
| Eigen Value | 1.005 | | |
| % of Variance: Component 1 | 47.059 | | |
| Component 2 | 22.686 | | |
| Component 3 | 16.752 | | |
| Cumulative % | 47.059 | | |
| KMO | 0.602 | | |
| Bartlett's Test of Sphericity, Approx. ChiSquare | 1022.040 | | |
| df | 15 | | |
| Sig. | .000 | | |

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 7 iterations.

**Source: Field Data, 2024**

### 4.4.3. Factor Analysis for Psychological Attributes

The psychological attributes variable was assessed using eight items which underwent principal component analysis. The value for the Kaiser Meyer-Olkin measure of sampling adequacy was 0.557, surpassing the recommended threshold of 0.5 (Kaiser, 1974), and Bartlett's Test of Sphericity (Bartlett, 1954) achieved a statistical significance level of p .000, demonstrating that the sample was adequately representative of the population. As shown in Table 4.6, this research recorded a KMO test statistic of 0.557. According to Kaiser (1974), KMO values greater than 0.5 are considered statistically sufficient. The score of 0.557 in this research indicates that the sampling was indeed appropriate. In addition to the KMO evaluation, Bartlett's

test for sphericity produced a strongly significant outcome, with a value of 831.230 at 28 degrees of freedom and a significance level of P<0.05. The P value obtained from this test was 0.000, which indicates a statistically significant correlation among the constructs in the dataset. Kothari (2014) noted that for both the KMO and Bartlett's tests to be deemed suitable, their significance level must be under 0.05. These results necessitate further statistical analysis to be conducted. With regards to the psychological attributes variable, the results of the rotated component matrix, utilizing varimax with Kaiser normalization rotation, are displayed in Table 4.6

**Table 4. 6: Psychological Attributes Rotated Component Matrix**

| | Component | | |
|---|---|---|---|
| | **1** | **2** | **3** |
| I value the payment of taxes to the government | .923 | | |
| I trust in tax agencies in discharging their duty | .848 | | |
| I think the tax burden to small scale businesses is too much. | | .789 | |
| I believe that the penalties of tax noncompliance are too high | | .776 | |
| I believe that it is unethical not to pat taxes | | .679 | |
| I believe that there is a higher likelihood of being caught when cheating | | | .855 |
| I believe there is no opportunity to evade paying tax | | | .782 |
| I believe that there is fairness in our tax system | | | .639 |
| Eigen Value | 1.195 | | |
| % of Variance: Component 1 | 37.298 | | |
| Component 2 | 20.122 | | |
| Component 3 | 14.938 | | |
| Cumulative % | 72.357 | | |
| KMO | 0.557 | | |
| Bartlett's Test of Sphericity, Approx. ChiSquare | 831.230 | | |
| df | 28 | | |
| Sig. | .000 | | |

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 7 iterations.

The principal component analysis (PCA) was employed to extract three components. The cumulative variance contributed by the three components was 72.357% with the first component accounting for 37.298% while the second accounted for 20.122% of

the cumulative variance and the third component accounted for 14.938% of the cumulative variance

### 4.4.4. Factor Analysis for Perceived Risks

The variable for perceived risk was assessed using seven items that underwent principal component analysis. The value for the Kaiser Meyer-Olkin measure of sampling adequacy was 0.733, which surpasses the minimum recommended value of 0.5 (Kaiser, 1974), and the Bartlett's Test of Sphericity (Bartlett, 1954) revealed a statistically significant result with p .000, indicating that the sample is a good representation of the overall population. As illustrated in Table 4.7, this study reports a KMO test statistic of 0.733. According to Kaiser (1974), KMO values greater than 0.5 are considered statistically sufficient. The KMO score of 0.733 in this research suggests that the sample was adequate. Besides the KMO assessment, the results from Bartlett's test of sphericity showed a significant outcome with a value of 913.755 at 21 degrees of freedom and a significance level of $P<0.05$. The p-value found from Bartlett's Test of Sphericity was 0.000, indicating a statistically significant correlation among the constructs in the dataset. Kothari (2014) noted that for both the KMO and Bartlett's tests to be deemed suitable, their significance level should be lower than 0.05. These results justify the need for further statistical analysis to be conducted. With regards to the psychological attributes variable, the results of the rotated component matrix, utilizing varimax with Kaiser normalization rotation, are displayed in Table 4.7. The principal component analysis (PCA) was employed to extract two components. The cumulative variance contributed by the two components was 72.357% with the first component accounting for 37.298% while the second accounted for 20.122% of the cumulative variance.

**Table 4. 7: Perceived Risk Attributes Rotated Component Matrix**

| | | Component 1 | 2 |
|---|---|---|---|
| The E-tax system often behaves in unexpected ways | | .872 | |
| Filing tax returns would be difficult to be done without an E-tax | | .740 | |
| I find the E-tax system costly in my enterprise | | .617 | |
| The firm has been able to identify high-risk audit companies. | | | .806 |
| The risks associated with specific business transactions undertaken by the company have been Reduced. | | | .803 |
| E-tax has safeguarded the business from tax compliance risks | | | .707 |
| I make errors frequently when using the E-tax system | | | .532 |
| Eigen Value | 1.163 | | |
| % of Variance: Component 1 | 49.507 | | |
| Component 2 | 16.616 | | |
| Cumulative % | 66.123 | | |
| KMO | 0.733 | | |
| Bartlett's Test of Sphericity, Approx. Chi Square | 913.755 | | |
| df | 21 | | |
| Sig. | .000 | | |

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 7 iterations.

### 4.4.5. Factor Analysis for Digital Tax Administration Systems

The variable related to digital tax administration systems was assessed using eight items that underwent principal component analysis. The Kaiser Meyer-Olkin measure of sampling adequacy was recorded at 0.729, which exceeds the acceptable threshold of 0.5 (Kaiser, 1974), and the result of Bartlett's Test of Sphericity (Bartlett, 1954) showed a statistically significant p-value of 0.000, suggesting that the samples are representative of the population. As shown in Table 4.8, this study reports a KMO test statistic of 0.729. According to Kaiser (1974), KMO values above 0.5 are statistically sufficient. The score of 0.729 in this analysis suggests that the sampling was adequate. Beyond the KMO test, Bartlett's test of sphericity produced a highly significant outcome, with a value of 1215.720 at 28 degrees of freedom and a significance level of $P<0.05$. The p-value resulting from Bartlett's Test of Sphericity was 0.000,

indicating a statistically significant correlation among the constructs within the dataset. Kothari (2014) noted that for the KMO and Bartlett's tests to be considered valid, their significance levels should fall below 0.05. These results indicate the need for further statistical analysis. With regards to the digital tax administration systems variable, the results of the rotated component matrix, utilizing varimax with Kaiser normalization rotation, are displayed in Table 4.8.

**Table 4. 8: Digital Tax Administration Systems Rotated Component Matrix**

| | | Component 1 | 2 |
|---|---|---|---|
| My firm is equipped with computer skills to solve problems when using e-tax | | .870 | |
| My company uses the e-tax to ensure compliance with tax laws | | .801 | |
| firm uses the e-tax system to avoid tax penalties | | .773 | |
| My firm has a computer system connected to the Internet to handle tax issues | | .754 | |
| My firm is currently using the e-tax system to fulfill tax obligations | | .721 | |
| My firm uses e-tax systems to file returns | | | .850 |
| I use e-tax to pay taxes and fees | | .631 | .651 |
| My firm registers for the tax identification number through the e-tax system | | | .640 |
| Eigen Value | 1.478 | | |
| % of Variance: Component 1 | 49.614 | | |
| Component 2 | 18.475 | | |
| Cumulative % | 68.089 | | |
| KMO | 0.729 | | |
| Bartlett's Test of Sphericity, Approx. Chi-Square | 1215.720 | | |
| df | 28 | | |
| Sig. | .000 | | |

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 7 iterations.

The principal component analysis (PCA) was employed to extract two components. The cumulative variance contributed by the two components was 68.089% with the

first component accounting for 49.614% while the second accounted for 18.475% of the cumulative variance.

### 4.5. Demographic Characteristics of Respondents

Respondent demographics are critical for conducting thorough data analysis, guaranteeing representation, and deriving relevant inferences from research findings. It allows researchers to divide data into useful groupings. This segmentation can aid in the identification of trends and patterns unique to various populations. Furthermore, it gives context to the data, which helps to understand why particular trends or behaviours occur. Including demographic factors in research improves the study's validity by controlling for confounding variables that may influence the results. The demographic characteristics of interest in this study are gender, level of education, age of respondents, number of years of firm operation since establishment, number of employees and total turnover.

#### 4.5.1. Gender Distribution

Table 4.9 indicates the gender distribution of the respondents. Majority of the respondents were male, and they accounted for 62.5 percent (n = 175) while 37.5 percent of were females (n = 105). This shows that there is gender disparity in the MSMEs sector indicating a violation in the implementation of the constitutional two thirds gender rule in Kenya. Gender disparity in micro small and medium-sized enterprises (MSMEs) in Kenya presents a significant barrier to economic growth and empowerment particularly among women.

Women entrepreneurs frequently encounter challenges in securing financing, attributed to inadequate collateral, limited credit history, and systemic biases within institutions. Women-led MSMEs often face challenges in accessing markets as a result of existing gender norms and disparities in networking, information

dissemination, and marketing channels. Moreover, women entrepreneurs often face restricted access to education and training opportunities, which can impede their capacity to manage and expand their businesses effectively. Additionally, current laws and regulations may not sufficiently support women's entrepreneurship or may present challenges for women to navigate. Furthermore, women frequently assume the dual roles of managing household responsibilities and business operations, which restricts their time and resources for business development. Cultural expectations surrounding gender roles may limit women's involvement in entrepreneurship and their recognition as business leaders.

Addressing gender disparity among MSMEs in Kenya necessitates a comprehensive strategy that encompasses financial assistance, training, regulatory support, and shifts in societal attitudes. Implementing these strategies enables stakeholders to cultivate an environment that promotes gender equality in entrepreneurship and empowers women to enhance economic growth in Kenya.

### 4.5.2. Level of Education

The education level of respondents offers insights into their knowledge, skills, and capabilities, potentially influencing business decisions and performance. Higher education levels may be associated with enhanced managerial practices, innovative strategies, and a deeper understanding of market dynamics, resulting in improved business outcomes. Analyzing the educational background of respondents' aids in identifying knowledge gaps and informs the creation of customized training programs or resources.

With respect to the level of education, the highest number of respondents representing 44.6% (n = 125) had diploma qualification while the lowest number of respondents representing 0.7% (n = 2) had other forms of qualifications not specified. Those who

had undergraduate degree qualifications were (n = 96) respondents representing 34.3%. The respondents who had postgraduate degree qualifications were (n = 29) representing 10.4%. This was followed by those who had certificate qualification who were (n = 28) representing 10% of the respondents.

### 4.5.3. Age of Respondents

Age can influence perspectives, experiences, and risk tolerance related to entrepreneurship and business operations. Different age groups may exhibit varying attitudes towards technology, management styles, and risk willingness, impacting business strategies and outcomes. Age may also affect the priorities of business owners; for instance, older respondents may prioritize sustainability and legacy, whereas younger entrepreneurs may focus on innovation and growth.

With respect to age, the study's findings reveal that the majority of the respondents, accounting for 57.1% (n=160), fell between the age range of 29-40 years old. This was followed by respondents who were between 41 and 50 years old, representing 18.6% (n=52) of the total respondents. The third group of respondents consisted of individuals aged between 19 and 28 years old, with a total of 39 participants, accounting for 13.9% of the total respondents. The fourth group of respondents consisted of individuals aged below 18 years old (n =15), accounting for 5.4% of the total respondents. Finally, a total of (n =14) respondents representing 5% of the respondents were over 50 years old.

### 4.5.4. Length of Firm Operations

Length of firm operation helps to evaluate the stability and experience of a firm within the market. Firms operating for longer periods may have established reputations, customer bases, and operational efficiencies, influencing their financial

performance and strategic decisions. More years in operation can indicate accumulated experience and knowledge, leading to better management practices and resilience against market changes.

With respect to length of the firm operation, findings reveal that the majority of the firms had been in operation for between 6 to 10 years as depicted by the number of respondents (n=120) representing

### 4.5.5. Number of Employees

The size of a firm, in terms of employee count, can reflect its scale of operations. The number of employees can indicate the capabilities of a firm to handle projects, customer demands, and scaling activities. Larger firms may have more resources for R&D, marketing, and customer service. Researching employment levels can also shed light on the contributions of firms to local economies, job creation, and community development.

With respect to number of employees study's findings reveal that the majority of the respondents, (n= 166) accounting for 59.3%, said that their firms had less than 9 employees. This was followed by those who said that their firms had between 10 and 49 employees (n = 68) representing 24.3% of the respondents. A total of (n = 36) respondents representing 12.91% of the employees said that their firm had employed between 50-99 employees. Only (n =10) respondents said that their firm had employed over 100 employees representing 3.6% of the respondents.

### 4.5.6. Turnover

Total turnover provides a quantitative measure of a firm's financial performance. Examining turnover allows researchers to assess the economic viability and growth potential of businesses, which can inform broader economic analyses and policy

formation. Turnover figures can be used to compare firms within industries, identify best practices, and understand market dynamics based on economic size and revenue generation.

Findings of the study revealed that the majority of the respondents, (n= 109) accounting for 38.9% of the respondents said that their firm had a turnover of between 2 and 5 million shillings. This was followed by those who said that their firm had a turnover of between 6 and 20 million (n= 109) accounting for 22.9% of the respondents. Further, the study findings revealed that a total of (n= 61) respondents accounting for 21.8% of the respondents said that their firm had a turnover of below 1 million shillings. This was followed by (n = 38) of the respondents who said that their firm had a turnover of between 21 and 99 million. A paltry (n =8) respondent representing 2.9% of the respondents averred that their firm had a turnover of over 100 million. The summary of the study findings is presented in table 4.9.

**Table 4. 9: Demographic Characteristics of Respondents**

| | | Frequency | Percent |
|---|---|---|---|
| **Gender** | Male | 175 | 62.5 |
| | Female | 105 | 37.5 |
| | **Total** | **280** | **100.0** |
| **Education** | Certificate | 28 | 10.0 |
| | Diploma | 125 | 44.6 |
| | Undergraduate | 96 | 34.3 |
| | Masters | 29 | 10.4 |
| | Others | 2 | 0.7 |
| | **Total** | **280** | **100.0** |
| **Age** | Below 18 Years | 15 | 5.4 |
| | 19-28 Years | 39 | 13.9 |
| | 29-40 Years | 160 | 57.1 |
| | 41-50 Years | 52 | 18.6 |
| | Over 50 Years | 14 | 5.0 |
| | **Total** | **280** | **100.0** |
| **Length of Operation** | Below 1 Year | 19 | 6.8 |
| | 1-5 Years | 94 | 33.6 |
| | 6-10 Years | 120 | 42.9 |
| | 11-19 Years | 39 | 13.9 |
| | Over 20 Years | 8 | 2.9 |
| | **Total** | **280** | **100.0** |
| **Number of Employees** | Less than 9 Employees | 166 | 59.3 |
| | 10-49 Employees | 68 | 24.3 |
| | 50-99 Employees | 36 | 12.9 |
| | Over 100 Employees | 10 | 3.6 |
| | **Total** | **280** | **100.0** |
| **Turnover** | Less than 1 million | 61 | 21.8 |
| | 2 and 5 million | 109 | 38.9 |
| | 6 and 20 million | 64 | 22.9 |
| | 21 and 99 million | 38 | 13.6 |
| | Over 100 million | 8 | 2.9 |
| | **Total** | **280** | **100.0** |

**Source: Field Data, 2024**

### 4.6. Descriptive Statistics of Study Variables

The primary goal of descriptive statistics is to provide a clear and concise summary of the data, enabling researchers to gain insights and understand patterns, trends, and distributions within the dataset. They are used to make inferences about a whole population based on a sample when only the sample is available.

This section elucidates the descriptive findings pertaining to the variables under examination. As a result, the primary variables examined in this study included tax compliance behavior, sociological attributes, psychological attributes, perceived risk, and the digitalization of tax administration systems.

### 4.6.1. Descriptive Statistics Results for Tax Compliance Behavior

The study's dependent variable was Tax Compliance Behavior. The respondents were required to express their level of agreement with statements concerning the tax compliance behaviour in the study area. Participants were asked to assess their responses using a 1-5 Likert scale, where 1 indicated "Strongly disagree," 2 indicated "Disagree," 3 indicated "Undecided," 4 indicated "Agree," and 5 indicated "Strongly agree," concerning tax compliance behaviour. Table 4.10 presents the responses regarding this variable.

Table 4.10 presents the findings. The results indicate that the majority of respondents were in agreement that they have been paying my tax obligations correctly as depicted by the mean and standard deviation (M = 4.55, SD = 1.029). They were also in agreement that they have been paying my tax obligations on time (M = 4.40, SD = 1.050) and that they have no problem in complying with my tax obligation (M = 4.21, SD = 1.146). However, the respondents unanimously disagreed that they were fully satisfied with all tax requirements imposed by KRA (M = 2.41, SD = 1.427). They were unsure or undecided that they were not ignorant of some legislation changes in tax compliance (M = 3.46, SD = 1.241); that they were confused by the use of tax law’s ambiguities and gaps in taxpayers' favors (M = 3.34, SD = 1.237) and that given a chance, they would not file their returns (M = 3.01, SD = 1.579). The findings revealed that the respondents agreed that they make timely payments of the owed taxes without any enforcement activity (M = 4.05, SD = 1.276). The respondents were

neutral with regards to this variable, as evidenced by the aggregate mean of (M=3.68, SD=1.25).

**Table 4. 10: Descriptive Statistics Results for Tax Compliance Behavior**

**Descriptive Statistics**

| | N | Min | Max | Mean | SD |
|---|---|---|---|---|---|
| I have been paying my tax obligations correctly | 280 | 1 | 5 | 4.55 | 1.029 |
| I have been paying my tax obligations on time | 280 | 1 | 5 | 4.40 | 1.050 |
| I have no problem in complying with my tax obligation | 280 | 1 | 5 | 4.21 | 1.146 |
| I am fully satisfied with all tax requirements imposed by KRA | 280 | 1 | 5 | 2.41 | 1.427 |
| I am not ignorance of some legislation changes in tax compliance | 280 | 1 | 5 | 3.46 | 1.241 |
| I am not confused by the use of tax law's ambiguities and gaps in taxpayers' favors | 280 | 1 | 5 | 3.34 | 1.237 |
| Given a chance, I would not file my returns | 280 | 1 | 5 | 3.01 | 1.579 |
| I make timely payments of the owed taxes without any enforcement activity. | 280 | 1 | 5 | 4.05 | 1.276 |
| **Mean Tax Compliance Behavior** | 280 | | | **3.68** | **1.25** |

**Source: Field Data,( 2024)**

### 4.6.2. Descriptive Statistics Results for Sociological Attributes

The first independent variable in this study was sociological attributes, evaluated through six items. Participants were directed to evaluate their agreement with statements related to sociological attributes using a 5-point scale, where 1 represents "Strongly disagree" and 5 signifies "Strongly agree." Table 4.11 presents the results of the assertions regarding sociological attributes. The findings indicate that the respondents agreed that they believe that procedures for tax filing are too complicated as depicted by the mean and standard deviation (M = 4.04, SD = 0.927) and that their personal belief is that it is important to pay taxes (M = 4.04, SD = 1.411). They were neutral or undecided on the view that they had trust in the tax authority (M = 3.83, SD = 1.559). However, the respondents disagreed on the view that their level of tax compliance is determined by what they thought what other people do (M = 2.17, SD =

1.400); that their level of tax compliance was determined by what most people suggested they should do (M = 2.07, SD = 1.314) and that their level of tax compliance was influenced by what people close to them suggested I should do (M = 2.04, SD = 1.294). The respondents' aggregate mean of 3.03 with a standard deviation of 1.32 indicates that they were uncertain about sociological attributes.

**Table 4. 11: Descriptive Statistics Results for Sociological Attributes**

| **Descriptive Statistics** | | | | | |
|---|---|---|---|---|---|
| | N | Min | Max | Mean | SD |
| I believe that procedures for tax filing are too complicated | 280 | 1 | 5 | .04 | .927 |
| I trust in the tax authority | 280 | 1 | 5 | 3.83 | 1.559 |
| My personal belief is that it is important to pay taxes. | 280 | 1 | 5 | 4.06 | 1.400 |
| My level of tax compliance is determined by what I think other people do. | 280 | 1 | 5 | 2.49 | 1.512 |
| My level of tax compliance is determined by what most people suggest I should do. | 280 | 1 | 5 | 2.39 | 1.455 |
| My level of tax compliance is influenced by what people close to me suggest I should do | 280 | 1 | 5 | 2.35 | 1.436 |
| **Mean Sociological Attributes** | **280** | | | **2.53** | **1.38** |

**Source: Field Data, 2024**

### 4.6.3. Descriptive Statistics Results for Psychological Attributes

The study incorporated psychological attributes as the second independent variable. Accordingly, the respondents were requested to give their views regarding items on psychological attributes on a five Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly agree). The results of their views on this variable showed that generally, the respondents were in agreement that they trusted in tax agencies in discharging their duty (M = 4.19, SD = 1.178); that they valued the payment of taxes to the government (M = 4.10, SD = 1.328); that it is unethical not to pay taxes (M = 4.03, SD = 1.081) and that the tax burden to small scale businesses is too much (M = 4. 30, SD = 1.073). They were neutral or undecided on the view that there is a higher likelihood of being caught when cheating (M = 3.14, SD = 1.596) and that the penalties of tax

noncompliance are too high (M = 3.72, SD = 1.543). Further, the respondents disagreed on the view that there is fairness in our tax system (M = 2.80, SD = 1.498) and that there is no opportunity to evade paying tax (M = 2.63, SD = 1.521). overall, the respondents' aggregate mean of 3.61 with a standard deviation of 1.35 indicates that they were uncertain about psychological attributes.

**Table 4. 12: Descriptive Statistics Results for Psychological Attributes**

| **Descriptive Statistics** | | | | | |
|---|---|---|---|---|---|
| | **N** | **Min** | **Max** | **Mean** | **SD** |
| I trust in tax agencies in discharging their duty | 280 | 1 | 5 | 4.19 | 1.178 |
| I value the payment of taxes to the government | 280 | 1 | 5 | 4.10 | 1.328 |
| I believe that there is fairness in our tax system | 280 | 1 | 5 | 2.80 | 1.498 |
| I believe there is no opportunity to evade paying tax | 280 | 1 | 5 | 2.63 | 1.521 |
| I believe that there is a higher likelihood of being caught when cheating | 280 | 1 | 5 | 3.14 | 1.596 |
| I believe that it is unethical not to pat taxes | 280 | 1 | 5 | 4.03 | 1.081 |
| I think the tax burden to small scale businesses is too much. | 280 | 1 | 6 | 4.30 | 1.073 |
| I believe that the penalties of tax noncompliance are too high | 280 | 1 | 5 | 3.72 | 1.543 |
| **Mean Psychological Attributes** | **280** | | | **3.61** | **1.35** |

**Source: Field Data, 2024**

### 4.6.4. Descriptive Statistics Results for Perceived Risk

The study incorporated perceived risk as the third independent variable. Accordingly, the respondents were requested to give their views regarding items on perceived risk on a five Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly agree). The results of their views on this variable showed that generally, the respondents were in agreement that E-tax had safeguarded the business from tax compliance risks (M = 4.70, SD = 0.619), that the risks associated with specific business transactions undertaken by the company have been reduced (M = 4.41, SD = 0.863), that firm has been able to identify high-risk audit companies (M = 4.29, SD = 0.982); and that the E-tax system often behaves in unexpected ways (M = 4.26, SD = 1.223). They were

neutral on the view that they found that the E-tax system was costly to their enterprise (M = 3.06, SD = 1.507) and disagreed regarding the view that they make errors frequently when using the E-tax system (M = 2.62, SD = 1.406). Overall, the respondents' aggregate mean of 3.94 with a standard deviation of 1.13 indicates that they were uncertain about perceived risk.

**Table 4. 13: Descriptive Statistics Results for Perceived Risk**

| **Descriptive Statistics** | | | | | |
|---|---|---|---|---|---|
| | **N** | **Min** | **Max** | **Mean** | **SD** |
| E-tax has safeguarded the business from tax compliance risks | 280 | 1 | 5 | 4.70 | .619 |
| The risks associated with specific business transactions undertaken by the company have been Reduced. | 280 | 1 | 5 | 4.41 | .863 |
| The firm has been able to identify high-risk audit companies. | 280 | 1 | 5 | 4.29 | .982 |
| Filing tax returns would be difficult to be done without an E-tax | 280 | 1 | 5 | 4.24 | 1.181 |
| I find the E-tax system costly in my enterprise | 280 | 1 | 5 | 3.06 | 1.507 |
| I make errors frequently when using the E-tax system | 280 | 1 | 5 | 2.62 | 1.406 |
| The E-tax system often behaves in unexpected ways | 280 | 1 | 5 | 4.26 | 1.223 |
| **Mean Perceived Risk** | **280** | | | **3.94** | **1.11** |

**Source: Field Data, 2024**

### 4.6.5. Descriptive Statistics Results for Digitalization of Tax Administration Systems

Digitalization of tax administration systems was the moderating variable in this study. Accordingly, the respondents were requested to give their views regarding items on digitalization of tax administration systems on a five Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly agree). The results of their views on this variable showed that generally, the respondents were undecided regarding the view that their firm registered for the tax identification number through the e-tax system (M = 3.96, SD = 1.067). However, they were in agreement that their firms used e-tax systems to file returns (M = 4.36, SD = 0.916); that their firm uses the e-tax system to avoid tax

penalties (M = 4.01, SD = 1.399); that their firms had a computer system connected to the Internet to handle tax issues (M = 4.30, SD = 0.852); that their firms used the e-tax to ensure compliance with tax laws(M = 4.58, SD = 0.612); that they used e-tax to pay taxes and fees(M = 4.34, SD = 0.804); that their staff were equipped with computer skills to solve problems when using e-tax (M = 4.27, SD = 0.892); and that their firms were using the e-tax system to fulfill tax obligations(M = 4.57, SD = 0.657). Overall, the respondents' aggregate mean of 4.30 with a standard deviation of 0.90 indicates that they agreed regarding the items on digitalization of tax administration systems.

**Table 4. 14: Descriptive Statistics Results for Digitalization of Tax Administration Systems**

| **Descriptive Statistics** | | | | | |
|---|---|---|---|---|---|
| | **N** | **Min** | **Max** | **Mean** | **SD** |
| My My firm uses e-tax systems to file returns | 280 | 2 | 5 | 4.36 | .916 |
| firm uses the e-tax system to avoid tax penalties | 280 | 1 | 5 | 4.01 | 1.399 |
| My firm has a computer system connected to the Internet to handle tax issues | 280 | 1 | 5 | 4.30 | .852 |
| My company uses the e-tax to ensure compliance with tax laws | 280 | 2 | 5 | 4.58 | .612 |
| I use e-tax to pay taxes and fees | 280 | 2 | 5 | 4.34 | .804 |
| My firm is equipped with computer skills to solve problems when using e-tax | 280 | 1 | 5 | 4.27 | .892 |
| My firm registers for the tax identification number through the e-tax system | 280 | 1 | 5 | 3.96 | 1.067 |
| My firm is currently using the e-tax system to fulfill tax obligations | 280 | 2 | 5 | 4.57 | .657 |
| **Mean Digitalization of Tax Administration Systems** | **280** | | | **4.30** | **0.90** |

**Source: Field Data, 2024**

### 4.7. Assumptions of Regression Model

Williams et al. (2019) and other scholars emphasize the importance of verifying whether the data aligns with the assumptions underlying the statistical methods employed in the study. Testing assumptions is essential for the researcher to assess the

data characteristics and identify the suitable model for the study, ensuring unbiased, consistent, and efficient estimations. Greenacre et al. (2022) observed a considerable prevalence of misconceptions regarding the application of statistical tests, confidence intervals, and statistical power. Consequently, it is recommended to exercise caution when formulating conclusions in social research.

The study evaluated the regression assumptions to determine the extent of alignment between the data and these assumptions. Deviation from assumptions may result in distorted estimates of relationships, unreliable confidence intervals, and flawed significance tests (Osborne & Waters, 2019). The four assumptions of multiple regression include linearity, homoscedasticity, normality, and collinearity (Schmidt & Finan, 2018).

### 4.7.1. Normality Test

The assumptions regarding normality were assessed at both univariate and multivariate levels, specifically examining the distribution of scores across a combination of two or more items. To determine the distribution of items in the study, both the Kolmogorov-Smirnov and Shapiro-Wilk tests were employed (Shapiro & Wilk, 1965) for calculating each variable. Given that the sample size exceeded 50, the Kolmogorov-Smirnov test was utilized for assessing normality, as SPSS provides two default values. Nevertheless, normality can also be established by evaluating the p-value from the Kolmogorov-Smirnov and Shapiro-Wilk tests. If the p-value (significance value) from the Kolmogorov-Smirnov test is greater than 0.05, this suggests that the data follows a normal distribution. Conversely, if the p-value is below 0.05, it indicates a significant deviation from normal distribution. Since the p-values for the variables were all above 0.05, this suggests that normality of the data has been verified. Consequently, the variables did not show significance, thus

fulfilling the normality assumptions. Results of the normality test can be found in Table 4.15.

**Table 4. 15: Tests of Normality**

| | Kolmogorov-Smirnov[a] | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|
| | **Statistic** | **df** | **Sig.** | **Statistic** | **df** | **Sig.** |
| Unstandardized Residual | .044 | 280 | .200* | .994 | 280 | .303 |
| Standardized Residual | .044 | 280 | .200* | .994 | 280 | .303 |
| Studentized Residual | .043 | 280 | .200* | .994 | 280 | .341 |

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

### 4.7.2. Linearity Test

Typically, the assumption of linearity suggests that the response variable can be expressed as a function of the predictor variables. Therefore, multiple regression analysis was utilized to assess the linear relationship between the dependent and independent variables. It is essential to evaluate linearity, as other components of the general linear model, including correlation and regression, rely on this assumption (Osborne & Waters, 2019). ANOVA and various statistical tests available in SPSS were used to investigate the presence of linearity in the data (Kafle, 2019). In conducting an analysis of variance (ANOVA) to determine linearity, a commonly accepted standard is that if the ρ-value is lower than 0.05, the relationship between the independent and dependent variables is considered linear. Conversely, if the ρ-value is greater than 0.05, it indicates the occurrence of nonlinearity (Roni & Djajadikerta, 2021). Table 4.16 below presents the results of linearity tests, demonstrating a linear relationship between sociological attributes and tax compliance ($F = 391.094$, $p = .000$). Additionally, there is a direct correlation between psychological attributes and tax compliance, as shown by the statistical analysis ($F = 1534.563$, $p = .000$). The

findings further indicate a direct correlation between perceived risks and tax compliance (F = 4651.056, p = .000). Moreover, it has been established that there is a direct correlation between digital tax management systems and tax compliance, as indicated by the statistical analysis (F = 4230.965, p = .000). It is observed that the eta values reflecting the association between tax compliance and each predictor variable, as listed in Table 4.16, closely align with the correlation coefficient (Pearson's r). This observation suggests a linear relationship among the variables (Hahs-Vaughn & Lomax, 2020). In summary, the results indicated a strong linear correlation between all predictor variables and the outcome variable (Financial growth). This finding implies that the assumption of linearity was upheld, allowing the researcher to perform further regression analysis and draw conclusions regarding the causal relationships among the variables in the study.

**Table 4. 16: Tests of Linearity**

| | | **ANOVA** | | **Measures of Association** | |
|---|---|---|---|---|---|
| | | F | Sig. | R | Eta |
| Sociological Attributes* Tax Compliance | Linearity | 391.094 | .000 | 0.560 | 0.917 |
| | Deviation from Linearity | 8.219 | .000 | | |
| Psychological* Tax Compliance | Linearity | 1534.563 | .000 | 0.670 | 0.975 |
| | Deviation from Linearity | 16.010 | .000 | | |
| Perceived Risk*Tax Compliance | Linearity | 4651.056 | .000 | 0.751 | 0.987 |
| | Deviation from Linearity | 46.331 | .000 | | |
| Digital Tax Systems*Tax Compliance | Linearity | 4230.965 | .000 | 0.848 | 0.982 |
| | Deviation from Linearity | 20.291 | .000 | | |

**Source: Field Data, 2024**

### 4.7.3. Homoscedasticity Test

Homoscedasticity posits that the errors maintain a consistent variance across all levels of the independent variables (Osborne & Waters, 2019). Researchers operate under

the assumption that errors are uniformly distributed throughout the variables (Keith, 2006). This is evident when the spread around the regression line remains stable across all values of the predictor variable. The assessment of homoscedasticity was conducted, and a p-value greater than 0.05 indicates that the homoscedasticity assumption is upheld.

**Table 4. 17: Tests for Homoscedasticity**

| Chi-Square | df | Sig. |
|---|---|---|
| 17.213 | 1 | .062 |

a. Dependent variable: TC
b. Tests the null hypothesis that the variance of the errors does not depend on the values of the independent variables.
c. Predicted values from design: Intercept + ZRE_1 + SRE_1 + ZRE_1 * SRE_1

**Source: Field Data, 2024**

### 4.7.4. Multicollinearity Test

The Variance Inflation Factor (VIF) was utilized to evaluate multicollinearity. This measure examines the effect of additional variables on the coefficient of determination, with significant values generally occurring when VIF exceeds 10.0, while tolerance values above 4 indicate the presence of collinearity or multicollinearity (Cooper & Schindler, 2001). In this study, the VIF values range from 1.015 to 1.151, and the tolerance values are between 0.868 and 0.944, as shown in Table 4.18. This suggests that multicollinearity is not a concern.

**Table 4. 18: Test for Multicollinearity**

| Model | | Collinearity Statistics Tolerance | VIF |
|---|---|---|---|
| 1 | (Constant) | | |
| | SA | .912 | 1.096 |
| | PA | .985 | 1.015 |
| | PR | .868 | 1.151 |
| | DTAS | .944 | 1.060 |

**Source: Field Data, 2024**

### 4.8. Correlation Analysis

Correlation analysis demonstrates the relationship between variables about the degree and intensity of their association. This study employed Pearson pairwise correlation ($\rho$). The correlation coefficient ($\rho$) varies from -1 to +1. When the value of $\rho$ is +1, the variables exhibit a perfect positive relationship; a value of -1 indicates a perfect negative association. Values approaching zero indicate a weak correlation, but values significantly different from zero signify a strong association.

The findings presented in Table 4.19 demonstrate that all the variables in this study exhibited a positive and statistically significant correlation with tax compliance. Specifically, enterprise age which was the first control variable in this study was positive and statistically correlated with tax compliance (r = 0.479, p = 0.01). This implied that there was 47.9% probability that tax compliance would increase with increased enterprise age. The second control variable turnover had a positive and statistically significant correlation with tax compliance (r = 0.402, p = 0.01). This implied that there was 40.2% probability that tax compliance would increase with increased turnover. Moreover, sociological attributes was positive and statistically correlated with tax compliance (r = 0.560, p =0.01). This implied that there was 56% probability that tax compliance would increase with increased sociological attributes. Psychological attributes had a positive and significant correlation with tax compliance (r = 0.670, p =0.01). This implied that there was 67% probability that tax compliance would increase with increased psychological attributes. Perceived risk had a positive and statistically significant correlation with tax compliance (r = 0.751, p =0.01)..

**Table 4. 19: Correlation Analysis Results**

| | | TC | EA | TO | SA | PA | PR | DTS |
|---|---|---|---|---|---|---|---|---|
| Tax Compliance | Pearson Correlation | 1 | | | | | | |
| Enterprise Age | Pearson Correlation | .479** | 1 | | | | | |
| Turnover | Pearson Correlation | .402** | .251** | 1 | | | | |
| Social Attributes | Pearson Correlation | .560** | .132* | .010 | 1 | | | |
| Psychological Attributes | Pearson Correlation | .670** | .328** | .315** | .343** | 1 | | |
| Perceived Risk | Pearson Correlation | .751** | .211** | .181** | .579** | .541** | 1 | |
| Digital Tax Systems | Pearson Correlation | .848** | .358** | .289** | .517** | .587** | .719** | 1 |

** Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
**Source: Field Data, 2024**

This implied that there was 75.1% probability that tax compliance would increase with increased perceived risk attributes. Digitalization of tax administration systems had a positive and statistically significant correlation with tax compliance (r = 0.848, p =0.01). This implied that there was 84.8% probability that tax compliance would increase with increased digitalization of tax administration systems

### 4.9. Regression Results

This study formulated and analyzed six hypotheses through a hierarchical regression model, which improves the model by integrating new variables. The study includes three hypotheses addressing direct effects and three hypotheses addressing moderating effects.

#### 4.9.1. Results of the Control Variables of the Study

Control variables improve the internal validity of a study by reducing the impact of confounding and other extraneous variables. The aim is to guarantee that the impact of the independent variable on the dependent variable can be precisely assessed

without the influence of other variables. Control variables remain constant to avoid any influence on the outcome, enabling a clear evaluation of the relationship between the independent and dependent variables.

This research controlled for enterprise age (EA) and turnover (TO). Model 1 findings demonstrate that the control variables, specifically enterprise age and turnover, accounted for 31.4% of the variation in tax compliance. The $R^2$ coefficient of determination is 0.314, the F statistic is 63.444, and the p-value is 0.000, supporting this conclusion. Further, the result indicated that the regression results of enterprise age was positive and statistically significant ($\beta$= 0.404, $\rho$<0.05). The positive beta value implies that as a firm gets older, its tax compliance tends to improve by 0.404 units. Moreover, the study established that turnover had a positive and statistically significant correlation with tax compliance ($\beta$= 0.301, $\rho$<0.05) implying that an increase in turnover leads to an increase in tax compliance by 0.301 units. Findings of the control variables are presented in table 4.20.

**Table 4. 20: Regression Results for Control Variable**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | **B** | **Std. Error** | **Beta** | | |
| 1 | (Constant) | 2.489 | .112 | | 22.137 | .000 |
| | Enterprise Age | .079 | .010 | .404 | 7.852 | .000 |
| | Turnover | .044 | .008 | .301 | 5.848 | .000 |
| **Model Summary** | | | | | | |
| R | | | 0.561 | | | |
| R Square | | | 0.314 | | | |
| $R^2$ Change | | | 0.314 | | | |
| Std. Error of the Estimate | | | 0.60569 | | | |
| **Model Fit** | | | | | | |
| F change | | | 63.444 | | | |
| Sig. | | | 0.000 | | | |

**Source: Field Data, 2024**

### 4.9.2. Results of the Direct Effects

Model 2 presents the findings of independent variables. The results show that enterprise age had a positive and statistically significant effect (β = 0.239, p <0.05), on tax compliance and that firm turnover had a positive and statistically significant effect on tax compliance (β = 0.190, p = <0.05. The model accounts for 77.8% of the overall variation in tax compliance, as indicated by an $R^2$ value of 0.778. This is supported by a significant F value of 192.504 and a p-value of 0.000

**Table 4. 21: Regression Results for Direct Effect**

| | | **Unstandardized Coefficients** | | **Standardized Coefficients** | | |
|---|---|---|---|---|---|---|
| **Model** | | B | Std. Error | Beta | **t** | **Sig.** |
| 2 | (Constant) | .876 | .093 | | 9.413 | .000 |
| | Enterprise Age | .047 | .006 | .239 | 7.815 | .000 |
| | Turnover | .028 | .005 | .190 | 6.188 | .000 |
| | Sociological Attributes | .036 | .006 | .201 | 5.718 | .000 |
| | Psychological Attributes | .042 | .006 | .234 | 6.509 | .000 |
| | Perceived Risk | .078 | .007 | .423 | 10.823 | .000 |
| **Model Summary** | | | | | | |
| R | | | 0882 | | | |
| R Square | | | 0.778 | | | |
| $R^2$ Change | | | 0.464 | | | |
| Std. Error of the Estimate | | | 0.34616 | | | |
| **Model Fit** | | | | | | |
| F change | | | 192.504 | | | |
| Sig. | | | 0.000 | | | |

**Source: Field Data, 2024**

### 4.9.3. Results of the Moderating Effect of Digitalization of Tax Administration Systems

The moderating effect was evaluated through a series of hierarchical blocks. Model 1 involved the testing of control variables. Model 2 examined all four independent variables. In model 3, the role of digitalization of tax administration systems as a moderator was tested to determine its contribution to the model. A cross product of the moderator with each independent variable was computed. Models 4 through 6

involved a hierarchical testing of the interaction terms between the moderator and each independent variable.

Model 3 shows the inclusion of the moderator in the model. The results show that enterprise age had a positive and statistically significant effect (β = 0.176, p <0.05), on tax compliance and that firm turnover had a positive and statistically significant effect on tax compliance (β = 0.146, p = <0.05). The model accounts for 6.9% of the overall variation in tax compliance, as indicated by an $R^2$ value of 0.069. This is supported by a significant F value of 252.292 and a p-value of 0.000.

### 4.9.4. Results of the Interaction Effect of Sociological Attributes, Digitalization of Tax Administration Systems and Tax Compliance

Model 4 shows the results of the first interactions of digitalization of tax administration systems on the relationship between sociological attributes and tax compliance. This Model indicates an improved R of 0.921 and change in $R^2$ of 0.000, with F= 215.84, p = 0.000 which implies that the first interaction explains 0.0% of the variance in tax compliance. The findings regarding the controls in this model indicate that enterprise age had a positive and statistically significant effect (β = 0.175, p <0.05), on tax compliance and that firm turnover had a positive and statistically significant effect on tax compliance (β = 0.146, p = <0.05).

### 4.9.5. Results of the Interaction Effect of Psychological Attributes, Digitalization of Tax Administration Systems and Tax Compliance

Model 5 shows the results of the second interactions of digitalization of tax administration systems on the relationship between psychological attributes and tax compliance. This Model indicates an improved R of 0.945 and change in $R^2$ of 0.045, with F= 280.081, p = 0.000 which implies that the first interaction explains 4.5% of the variance in tax compliance. The findings regarding the controls in this model

indicate that enterprise age had a positive and statistically significant effect (β = 0.140, p <0.05), on tax compliance and that firm turnover had a positive and statistically significant effect on tax compliance (β = 0.122, p = <0.05).

### 4.9.6. Results of the Interaction Effect of Perceived Risk, Digitalization of Tax Administration Systems and Tax Compliance

Model 6 shows the results of the third interactions of digitalization of tax administration systems on the relationship between perceived risk and tax compliance. This Model indicates an improved R of 0.954 and change in $R^2$ of 0.019, with F= 307.233, p = 0.000 which implies that the first interaction explains 1.9% of the variance in tax compliance. The findings regarding the controls in this model indicate that enterprise age had a positive and statistically significant effect (β = 0.116, p <0.05), on tax compliance and that firm turnover had a positive and statistically significant effect on tax compliance (β = 0.104, p = <0.05).

The results of the independent variable show that sociological attributes (β = -0.480, p = <0.05) had a negative and significant effect on tax compliance implying that a unit increase in sociological attributes leads to a decrease in tax compliance. Psychological attributes (β = 0.570, p = <0.05) had a positive and significant effect on tax compliance implying that a unit increase in psychological attributes leads to an increase in tax compliance; and perceived risk (β = 1.032, p = <0.05) had a positive and statistically significant on tax compliance implying that a unit increase in perceived risk leads to an increase in tax compliance. The moderator was found to have a positive and significant effect on tax compliance (β = 1.116, p = <0.05).

The first interaction effect of digitalization of tax administration systems on the relationship between sociological attributes and tax compliance was found to be

positive and statistically significant (β = 0.895, p = <0.05). This implied that digitalization of tax administration systems moderates the relationship between sociological attributes and tax compliance. The second interaction effect of digitalization of tax administration systems on the relationship between psychological attributes and tax compliance had a negative and statistically significant effect (β = -0.693, p = <0.05). This implied that digitalization of tax administration systems moderated the relationship between psychological attributes and tax compliance. The third and final interaction effect of digitalization of tax administration systems on the relationship between perceived risk and tax compliance was found to be negative and statistically significant (β = -1.437, p = <0.05). This implied that digitalization of tax administration systems moderates the relationship between perceived risk and tax compliance.

**Table 4. 22: Regression Results for Direct Effect**

| Model | | Unstandardized Coefficients B | Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 2.489 | .112 | | 22.137 | **.000** |
| | EA | .079 | .010 | .404 | 7.852 | **.000** |
| | TO | .044 | .008 | .301 | 5.848 | **.000** |
| 2 | (Constant) | .876 | .093 | | 9.413 | **.000** |
| | EA | .047 | .006 | .239 | 7.815 | **.000** |
| | TO | .028 | .005 | .190 | 6.188 | **.000** |
| | SA | .036 | .006 | .201 | 5.718 | **.000** |
| | PA | .042 | .006 | .234 | 6.509 | **.000** |
| | PR | .078 | .007 | .423 | 10.823 | **.000** |
| 3 | (Constant) | .741 | .078 | | 9.449 | **.000** |
| | EA | .034 | .005 | .176 | 6.775 | **.000** |
| | TO | .021 | .004 | .146 | 5.651 | **.000** |
| | SA | .024 | .005 | .136 | 4.541 | **.000** |
| | PA | .027 | .005 | .150 | 4.862 | **.000** |
| | PR | .041 | .007 | .223 | 5.974 | **.000** |
| | DTAS | .074 | .007 | .425 | 11.087 | **.000** |
| 4 | (Constant) | .682 | .121 | | 5.641 | **.000** |
| | EA | .034 | .005 | .175 | 6.718 | **.000** |
| | TO | .021 | .004 | .146 | 5.649 | **.000** |
| | SA | .029 | .009 | .164 | 3.085 | **.002** |
| | PA | .027 | .005 | .150 | 4.851 | **.000** |
| | PR | .041 | .007 | .221 | 5.929 | **.000** |
| | DTAS | .078 | .009 | .447 | 8.625 | **.000** |
| | X1 | -7.322E-5 | .000 | -.045 | -.640 | .523 |
| 5 | (Constant) | -.158 | .129 | | -1.225 | .222 |
| | EA | .027 | .004 | .140 | 6.276 | **.000** |
| | TO | .018 | .003 | .122 | 5.581 | **.000** |
| | SA | -.037 | .010 | -.207 | -3.640 | **.000** |
| | PA | .185 | .016 | 1.039 | 11.821 | **.000** |
| | PR | .031 | .006 | .169 | 5.299 | **.000** |
| | DTAS | .154 | .010 | .883 | 14.714 | **.000** |
| | X1 | .001 | .000 | .493 | 6.283 | **.000** |
| | X2 | -.010 | .001 | -1.358 | -10.592 | **.000** |
| 6 | (Constant) | -.550 | .128 | | -4.288 | **.000** |
| | EA | .023 | .004 | .116 | 5.659 | **.000** |
| | TO | .015 | .003 | .104 | 5.185 | **.000** |
| | SA | -.085 | .011 | -.480 | -7.616 | **.000** |
| | PA | .101 | .018 | .570 | 5.645 | **.000** |
| | PR | .190 | .022 | 1.032 | 8.784 | **.000** |
| | DTAS | .195 | .011 | 1.116 | 17.814 | **.000** |
| | X1 | .001 | .012 | .895 | 10.065 | **.000** |
| | X2 | -.005 | .001 | -.693 | -4.746 | **.000** |
| | X3 | -.010 | .001 | -1.437 | -7.581 | **.000** |

**Source: Field Data, 2024**

The final study model took the form of:

$$Y = .116 + .104TO + -.480YOP + .104SA + .570PA + 1.032PR + 1.116DS + .895SA * DS + -.693PA * DS + -1.437PR * DS + \varepsilon$$

**4.10. Hypotheses Testing**

The first hypothesis of the study, $H_{O1}$, posited that sociological attributes have no significant relationship with tax compliance among MSME's in Embakasi Sub-County in Nairobi County. Results presented in the table revealed that there was a negative and significant effect of sociological attributes on tax compliance (β = -0.480, p = <0.05). The null hypothesis is therefore rejected, and a conclusion made that that sociological attribute has a statistically significant effect on tax compliance.

The second hypothesis of the study postulated that psychological attributes have no significant relationship with tax compliance among MSME's in Embakasi Sub-County, Nairobi County. Results presented in the table revealed that there was a positive and significant effect of psychological attributes on tax compliance (β = 0.570, p = <0.05). The null hypothesis is therefore rejected, and a conclusion made that that psychological attributes have a statistically significant effect on tax compliance.

The third hypothesis hypothesized that perceived risk has no significant relationship with tax compliance among MSME's in Embakasi Sub-County Nairobi County. Results presented in the table revealed that there was a positive and significant effect of perceived risk on tax compliance (β =1.032, p = <0.05). The null hypothesis is therefore rejected, and a conclusion made that perceived risk has a statistically significant effect on tax compliance.

The fourth hypothesis stated that digitalization of tax administration systems has no significant moderating effect on the relationship between sociological influences and tax compliance among MSME's in Embakasi Sub-County, Nairobi County. Results indicate that the interaction effect of digitalization of tax administration systems on the relationship between sociological attributes and tax compliance was positive and significant ($\beta = 0.895$, $p = <0.05$). The null hypothesis is therefore rejected, and a conclusion made that digitalization of tax administration systems moderates the relationship between sociological attributes and tax compliance.

The fifth hypothesis stated digital tax administration systems have no significant moderating effect on the relationship between psychological attributes and tax compliance among MSME's in Embakasi Sub-County, Nairobi County. Results indicate that the interaction effect of digitalization of tax administration systems on the relationship between psychological attributes and tax compliance was negative and significant ($\beta = -0.693$, $p = <0.05$). The null hypothesis is therefore rejected, and a conclusion made that digitalization of tax administration systems moderates the relationship between psychological attributes and tax compliance.

The sixth hypothesis stated that digital tax administration systems have no significant moderating effect on the relationship between perceived risk and tax compliance among MSME's in Embakasi Sub-County, Nairobi County. Results indicate that the interaction effect of digitalization of tax administration systems on the relationship between perceived risk and tax compliance was negative and significant ($\beta = -1.437$, $p = <0.05$). The null hypothesis is therefore rejected, and a conclusion made that digitalization of tax administration systems moderates the relationship between perceived risk and tax compliance.

### 4.11. Mod Graphs

A moderation effect may be either antagonistic, in which case increasing the moderator would reverse the effect of the predictor on the outcome, or enhancing, in which case increasing the moderator would increase the effect of the predictor (IV) on the outcome (DV) (Hayes, 2013). Three prerequisites must be met for moderation to exist. First off, there should be far more variance explained by interaction than by none. Second, the interaction term coefficient needs to be non-zero. The investigation of the simple slopes to determine the nature of the interaction starts with this simple slope for the interaction. Finally, there should be a significant difference between the overall models with and without interaction (Hayes, 2013). According to earlier researchers, plotting the interaction impact of the moderator on a graph is the best approach to determine its nature (Jose, 2008; Aiken & West, 1991). Mod Graphs make the interpretation of the intricate interactions in the model easier.

#### 4.11.1. Moderating Effect of Digitalization of Tax Administration Systems on Sociological Attributes and Tax Compliance

The findings in figure 4.1 show that at low levels of sociological attributes, tax compliance is high for firms with high digitalization of tax administration systems and low for firms with low digitalization of tax administration systems. As sociological attributes increase, tax compliance decreases at a higher for firms with low digitalization of tax administration systems as compared to firms with high digitalization of tax administration systems. As sociological attributes increase, tax compliance decreases but the decrease is high for firms with high digitalization of tax administration systems compared to firms with low digitalization of tax administration systems as demonstrated by the steepness of the slope. The nature of moderation depicted in this graph is a buffering moderation since the results from

model 2 which shows the direct effect of the independent variable, sociological attributes, on the dependent variable, tax compliance, has decreased in model 4 when the moderator digitalization of tax administration systems, is introduced. The buffering moderation is from $\beta = 0.036$, $\rho = 0.000$ in model 2 to $\beta = 0.029$, $\rho = 0.002$ in model 4 which are both significant.

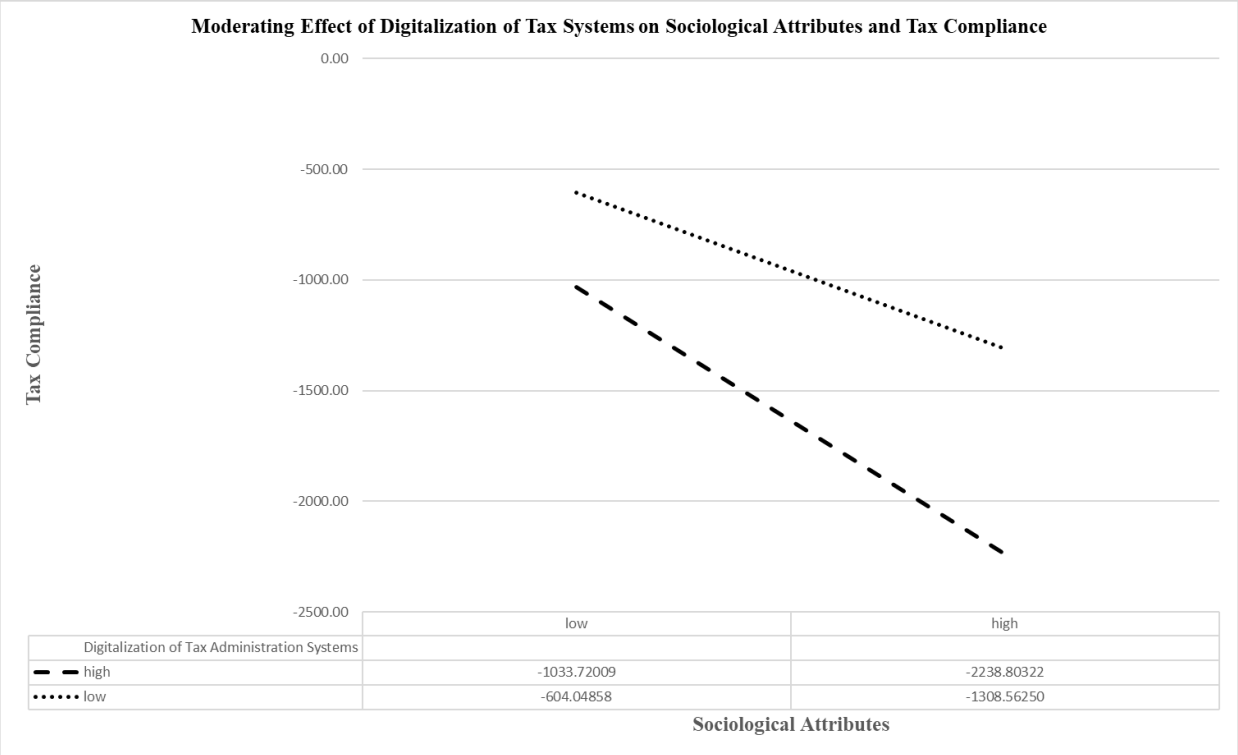


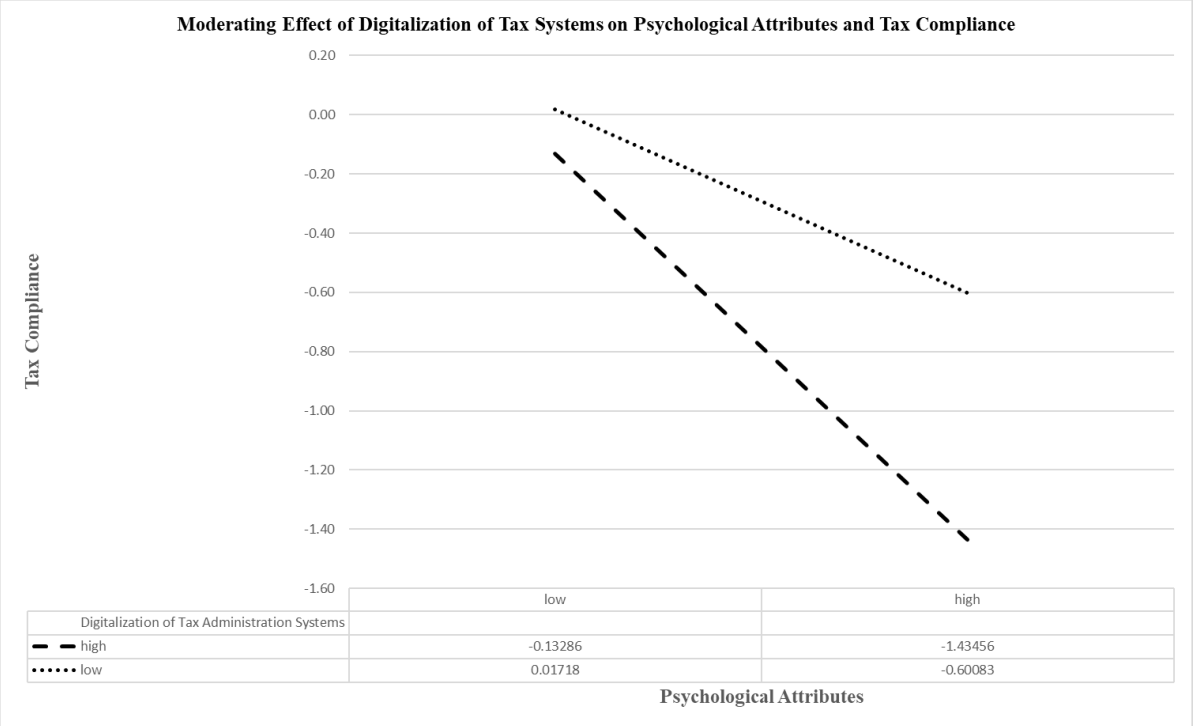

**Figure 4. 1: Moderating Effect of Digitalization of Tax Administration Systems on Sociological Attributes and Tax Compliance**

**Source: Field Data, 2024**

### 4.11.2. Moderating Effect of Digitalization of Tax Administration Systems on Psychological Attributes and Tax Compliance

The findings in figure 4.2 show that at low levels of psychological attributes, tax compliance is high for firms with high digitalization of tax administration systems and low for firms with low digitalization of tax administration systems. As psychological attributes increase, tax compliance decreases at a higher rate for firms with high digitalization of tax administration systems as compared to firms with low

digitalization of tax administration systems as demonstrated by the steepness of the slope. The nature of moderation depicted in this graph is an enhancing moderation since the results from model 2 which shows the direct effect of the independent variable, psychological attributes, on the dependent variable, tax compliance, has increased in model 5 when the moderator, digitalization of tax administration systems, is introduced. The enhancing moderation is from $\beta = 0.042$, $\rho = 0.000$ in model 2 to $\beta = 0.185$ $\rho = 0.002$ in model 4 which are both significant.




| Digitalization of Tax Administration Systems | low | high |
|---|---|---|
| high | -0.13286 | -1.43456 |
| low | 0.01718 | -0.60083 |

**Figure 4. 2: Moderating Effect of Digitalization of Tax Administration Systems on Psychological Attributes and Tax Compliance**

**Source: Field Data, 2024**

### 4.11.3. Moderating Effect of Digitalization of Tax Administration Systems on Perceived Risk and Tax Compliance

The findings in figure 4.3 show that at low levels of perceived risk, tax compliance is high for firms with low digitalization of tax administration systems and low for firms with high digitalization of tax administration systems. As perceived risk increases, tax

compliance decreases at a higher rate for firms with high digitalization of tax administration systems as compared to firms with low digitalization of tax administration systems as demonstrated by the steepness of the slope. The nature of moderation depicted in this graph is an enhancing moderation since the results from model 2 which shows the direct effect of the independent variable, psychological attributes, on the dependent variable, tax compliance, has increased in model 6 when the moderator, digitalization of tax administration systems, is introduced. The enhancing moderation is from $\beta = 0. .078$, $\rho = 0.000$ in model 2 to $\beta = 0.190$ $\rho = 0.000$ in model 6 which are both significant.

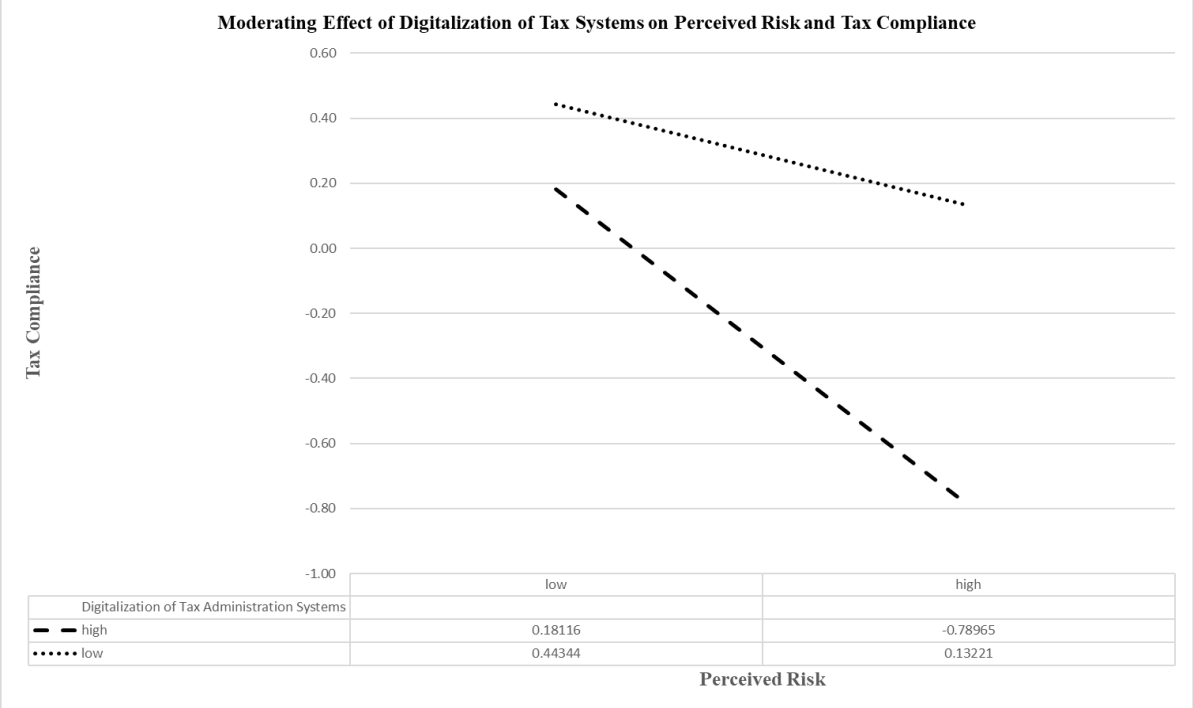



**Figure 4. 3: Moderating Effect of Digitalization of Tax Administration Systems on Perceived Risk and Tax Compliance**

**Source: Field Data, 2024.**

### 4.12. Discussion of the Finding

The first objective of the study was to establish the effect of sociological influences on tax compliance behavior. The hypothesis posited that sociological attributes have

no significant relationship with tax compliance among MSME's in Embakasi Sub-County, Nairobi County (Sritharan, Salawati, and Cheuk (2020), Nguyen (2022).

Conversely, some studies reported positive association between sociological attributes and tax compliance (Omar Faruque, Abdul, Mursheda, Mursheda, and Omar Faruque (2020)). Individual taxpayers tend to make their own decisions on whether to be compliant or not.

To improve tax compliance among MSME's the study posits that adopting tax equality, allocating tax revenue to public development and amenities.

The second objective of the study was to establish the effects of psychological influences on tax compliance behavior among MSME's in Embakasi Sub-County, Nairobi County. It was hypothesized that psychological attributes have no significant relationship with tax compliance among MSME's in Embakasi Sub-County, Nairobi County.

The results are consistence with earlier studies (Bhutta et al. (2019), Munga et al. (2021), Jayawardane (2015)) MSMEs, mostly are constrained by subjective normal perceived behavioral attribute and attitude toward compliance. Thus, this perception encourages MSMEs to prioritize tax compliance as form of ensuring they adhere to laws and regulations to maintain their reputation and trustworthy with their customers, stakeholder, and community

The third objective of the study was to examine the effects of perceived risk on tax compliance behavior. Findings revealed that there was a positive and significant effect of perceived risk on tax compliance ($\beta = 1.032$, $p = <0.05$).

These results are supported by earlier studies on effects of perceived risk on tax compliance behavior (Nitami, Prinintha, Azrul, Bani, and Hanifiyah (2023).

When MSMEs perceive that voluntary payment of the taxes will enable them escape huge fines and penalties they tend to be more compliant.

The fourth objective of the study sought to determine the moderating effect of digital tax administration systems on the relationship between sociological attributes and tax compliance. It was hypothesized that digitalization of tax administration systems has no significant moderating effect on the relationship between sociological influences and tax compliance among MSME's in Embakasi Sub-County, Nairobi County

These results are supported by the earlier studies Nazarov, Mikhaleva, and Chernousova (2020) that posits that modern technology has made it easier and efficient for taxpayers to file and remit their taxes thus improving the level of compliance.

The fifth objective of the study sought to determine the moderating effect of digital tax administration systems on the relationship between psychological attributes and tax compliance. Findings revealed that the interaction effect of digitalization of tax administration systems on the relationship between psychological attributes and tax compliance was negative and significant ($\beta = -0.693$, $p = <0.05$)

The psychological attributes on how the MSME's owners will be perceived by their customers and the community at large gears them to be compliant. The fear of facing negative attitudes and repercussions can instill MSMEs to be compliant with tax regulations to avoid the psychological burden of guilt and anxiety.

The sixth objective of the study sought to determine the moderating effect of digital tax administration systems on the relationship between perceived risk and tax compliance. Findings revealed that the interaction effect of digitalization of tax administration systems on the relationship between perceived risk and tax compliance was negative and significant ($\beta = -1.437$, $p = <0.05$).

The finding posits that the firms with high digitalization of the tax administration systems tend to be compliant because the filing and remitting of the taxes are easier and more efficient. MSME's with proper digital systems that allow them to access the I-Tax system with ease tend to comply with the tax regulation and they pay the taxes on time to avoid interest and penalties.

### 4.13. Summary of Hypotheses Testing Results

The data displayed in Table 4.23 below provides a concise overview of the numerous and hierarchical regression models. The table displays the values of R2 and Δ in R2 for both the main and interaction effects, together with the choice about the proposed hypothesis, as presented in Table 4.23.

**Table 4.23: Summary of Hypotheses Testing Results**

| Hypothesis formulated | | Beta | p-values | Decision |
|---|---|---|---|---|
| **Main Effect** | | | | |
| $H_{O1:}$ | Sociological attributes have no significant relationship with tax compliance among MSME's in Embakasi Sub-County, Nairobi Kenya | -0.480 | 0.000 | Reject |
| $H_{O2:}$ | Psychological attributes have no significant relationship with tax compliance among MSME's in Embakasi Sub-County, Nairobi Kenya | 0.570 | 0.000 | Reject |
| $H_{O3:}$ | Perceived risk has no significant relationship with tax compliance among MSME's in Embakasi Sub-County, Nairobi Kenya | 1.032 | 0.000 | Reject |
| Moderation- | | | | |
| $H_{o4a}$ | Digitalization of tax administration systems has no significant moderating effect on the relationship between sociological influences and tax compliance among MSME's in Embakasi Sub-County, Nairobi Kenya | 0.895 | 0.000 | Reject |
| $H_{o4b}$ | Digital tax administration systems have no significant moderating effect on the relationship between psychological attributes and tax compliance among MSME's in Embakasi Sub-County, Nairobi Kenya | -0.693 | 0.000 | Reject |
| $H_{o4c}$ | Digital tax administration systems have no significant moderating effect on the relationship between perceived risk and tax compliance among MSME's in Embakasi Sub-County, Nairobi Kenya | -1.437 | 0.000 | Reject . |

# CHAPTER FIVE
# SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

## 5.1. Introduction

This chapter outlines a summary of the research findings in relation to the specific objectives and hypotheses of the study. It also includes the conclusions derived from the study findings, along with suggestions and potential avenues for future investigation regarding the moderating influence of digital tax administration systems on chosen behavioral characteristics affecting tax compliance among MSMEs in the Embakasi sub-county of Nairobi County, Kenya.

## 5.2. Summary of findings

### 5.2.1. Establish the Effect of Sociological attributes on Tax Compliance Behavior

The first objective of the study was to establish the effect of sociological influences on tax compliance behavior. The hypothesis posited that sociological attributes have no significant relationship with tax compliance among MSME's in Embakasi Sub-County, Nairobi County. Findings of the study revealed that there was a negative and significant effect of sociological attributes on tax compliance ($\beta$ = -0.480, p = <0.05). The null hypothesis is therefore rejected, and a conclusion made that that sociological attribute has a statistically significant effect on tax compliance..

### 5.2.2. Establish the Effect of Psychological Attributes on Tax Compliance Behavior.

The second objective of the study was to establish the effects of psychological influences on tax compliance behavior among MSME's in Embakasi Sub-County, Nairobi County. It was hypothesized that psychological attributes have no significant relationship with tax compliance among MSME's in Embakasi Sub-County, Nairobi County. Findings revealed that there was a positive and significant effect of

psychological attributes on tax compliance (β = 0.570, p = <0.05). The null hypothesis is therefore rejected, and a conclusion made that that psychological attributes have a statistically significant effect on tax compliance.

### 5.2.3. Establish the Effect of Perceived Risk on Tax Compliance Behavior

The third objective of the study was to examine the effects of perceived risk on tax compliance behavior. The study hypothesized that perceived risk has no significant relationship with tax compliance among MSME's in Embakasi Sub-County, Nairobi County. Findings revealed that there was a positive and significant effect of perceived risk on tax compliance (β = 1.032, p = <0.05). The null hypothesis is therefore rejected and a conclusion made that perceived risk has a statistically significant effect on tax compliance.

### 5.2.4. Moderating Effect Of Digital Tax Administration Systems on the Relationship Between Sociological Attributes and Tax Compliance

The fourth objective of the study sought to determine the moderating effect of digital tax administration systems on the relationship between sociological attributes and tax compliance. It was hypothesized that digitalization of tax administration systems has no significant moderating effect on the relationship between sociological influences and tax compliance among MSME's in Embakasi Sub-County, Nairobi County. Results of the regression analysis revealed that the interaction effect of digitalization of tax administration systems on the relationship between sociological attributes and tax compliance was positive and significant (β = 0.895, p = <0.05). The null hypothesis is therefore rejected and a conclusion made that digitalization of tax administration systems moderates the relationship between sociological attributes and tax compliance.

### 5.2.5. Moderating Effect Of Digital Tax Administration Systems on the Relationship Between Psychological Attributes and Tax Compliance

The fifth objective of the study sought to determine the moderating effect of digital tax administration systems on the relationship between psychological attributes and tax compliance. It was hypothesized that digitalization of tax administration systems has no significant moderating effect on the relationship between psychological attributes and tax compliance among MSME's in Embakasi Sub-County, Nairobi County. Findings revealed that the interaction effect of digitalization of tax administration systems on the relationship between psychological attributes and tax compliance was negative and significant ($\beta$ = -0.693, p = <0.05). The null hypothesis is therefore rejected and a conclusion made that digitalization of tax administration systems moderates the relationship between psychological attributes and tax compliance.

### 5.2.6. Moderating Effect Of Digital Tax Administration Systems on the Relationship Between Perceived Risk Attributes and Tax Compliance

The sixth objective of the study sought to determine the moderating effect of digital tax administration systems on the relationship between perceived risk and tax compliance. It was hypothesized that digitalization of tax administration systems has no significant moderating effect on the relationship between perceived risk and tax compliance among MSME's in Embakasi Sub-County, Nairobi County. Findings revealed that the interaction effect of digitalization of tax administration systems on the relationship between perceived risk and tax compliance was negative and significant ($\beta$ = -1.437, p = <0.05). The null hypothesis is therefore rejected, and a conclusion made that digitalization of tax administration systems moderates the relationship between perceived risk and tax compliance.

### 5.3. Conclusion of the Study

The study sought to establish the moderating role of digital systems on the selected behavioral attributes on tax compliance among MSMEs in Embakasi sub-county in Nairobi County Kenya. This section highlights how this study contributes to knowledge, theory, policy, practice, and future research directions.

The negative and significant effect of sociological attributes on tax compliance suggests that social factors, possibly social norms or peer influence, may deter SMEs from complying with tax obligations in this context. This highlights the need for interventions targeting local MSME's communities to foster a culture of compliance. Studies highlight the significant role of social factors in influencing tax compliance behavior, albeit in different contexts—Nguyen (2022) focuses on micro,small and medium-sized enterprises (MSMEs) in Vietnam, while Sritharan, Salawati, and Cheuk (2020) examine individual taxpayers in Malaysia. Nguyen identifies key elements such as social norms, tax knowledge, personal norms, perceptions of tax fairness, and the quality of tax services that drive voluntary compliance among MSMEs, emphasizing the social environment's impact on business behavior. Conversely, Sritharan et al. reveal how political affiliation, referral networks, the role of the tax authority (LHDN), and policy changes affect individual taxpayers, suggesting that social dynamics also shape compliance at the personal level. Together, these findings underscore the importance of understanding social influences to develop effective tax compliance strategies and manage risks within tax administrations across different cultural contexts.

The positive and significant effect of psychological attributes underscores the importance of individual beliefs and attitudes toward taxation. This implies that fostering a positive perception of taxation can enhance compliance rates. he studies

conducted by Baeli (2021), Bhutta et al. (2019), and Munga et al. (2021) explore the influence of psychological factors on tax compliance behavior across different contexts. Baeli's research emphasizes that tax compliance awareness increases when easy tax services are available, penalties for delays are enforced, and taxpayers have a strong sense of nationalism and sound financial conditions. Bhutta et al. utilize the extended theory of planned behavior, finding that perceived behavioral control, subjective norms, attitudes, and moral obligations significantly affect tax compliance, with intention acting as a mediator. Meanwhile, Munga et al. focus on micro and small enterprise owners in Nairobi, confirming that taxpayer attitudes, tax knowledge, and social norms are all positively related to compliance. Collectively, these studies highlight the critical role of psychological and social factors in understanding and enhancing tax compliance behaviors.

The positive relationship between perceived risk and tax compliance indicates that when MSMEs perceive higher risks associated with non-compliance (such as penalties), they may be more likely to comply. This suggests that increasing awareness of the consequences of tax evasion may improve compliance. Nitami et al. (2023) and Utama et al. (2022) delve into various factors affecting tax compliance, addressing both psychological aspects and technological influences. Nitami et al. focus on taxpayer motivations, revealing that concepts of fairness, including procedural, distributive, and retributive justice, do not significantly impact voluntary tax compliance. In contrast, Utama et al. examine the roles of e-filing, perceived risk, and religiosity in shaping tax compliance intentions, finding that e-filing has a minimal moderating effect. Their study introduces novel variables related to perceived risk and religiosity within the framework of the Theory of Planned Behavior, enriching the understanding of factors influencing taxpayer compliance

behavior. Together, these studies contribute to a broader understanding of the diverse and complex influences on tax compliance beyond traditional economic considerations.

The findings illustrate the nuanced role of digital systems. While digitalization positively moderates the impact of sociological attributes, it negatively affects the psychological attributes-compliance relationship. This indicates potential complexities in how digital tools can influence different behavioral aspects and suggests variability in their effectiveness based on the attribute being considered.

The negative interaction effects with psychological attributes and perceived risk when digitalization is introduced suggest that policymakers should carefully design digital tax administration systems to align with the psychological and risk perceptions of MSMEs. Providing education and support around these systems could mitigate any negative impacts.

### 5.4. Recommendations of the Study

The findings from this study contribute significantly to the research on MSMEs tax compliance. This section highlights how this study contributes to knowledge, theory, policy, practice, and future research directions.

#### 5.4.1. Theoretical Contribution

The study contributes to tax compliance literature by integrating multiple behavioral theories, illustrating how sociological, psychological, and perceived risk factors interact with digital tools.

Economic deterrence theory states that in the context of the MSME's tax trainings can significantly enhance voluntary tax and recommends adoption of training and creating tax awareness. This multiplicity of frameworks can guide future research in exploring other influencing factors on tax compliance.

This research adds to the understanding of the specific moderation effects of digital systems, emphasizing that they can have varied effects based on the attributes considered. It suggests that the intersection of technology with human behavior is complex and warrants further exploration.

### 5.4.2. Managerial Contribution

Managers should actively promote a culture of tax compliance within their organizations. This involves communicating the importance of tax compliance in fostering long-term business sustainability, which can help mitigate the negative effects of sociological attributes.

They should invest and allocate funds to support and promote smoothing running of the training by hiring a trainer and getting reliable materials for their employees.

Managers should focus on understanding the psychological motivations of their employees. Tailoring messaging to highlight the positive impacts of compliance—such as business growth and legitimacy—can enhance compliance efforts. Given the findings that digitalization has a complex effect on tax compliance, managers must ensure that employees are adequately trained in using digital tax administration systems. This training should focus on how to navigate these systems effectively and understand their benefits.

They should also monitor how digital tax systems are implemented and operated by the employees.

Managers can address perceived risks associated with tax compliance by providing clear information about the processes, penalties for non-compliance, and strategies for minimizing risks. Keeping proper and accurate records of both purchases and sales to enhance compliance. Transparency can reduce fear and uncertainty, encouraging compliance.

### 5.4.3. Policy Recommendations

Insights from the study can influence tax policy frameworks, encouraging the integration of community-oriented approaches that address sociological factors alongside the enhancement of digital systems.

To improve compliance among MSME's KRA and legislature should implement a simplified tax procedure system. Also, they should prioritize having more tax education and training on the areas that are ambiguous to the taxpayers. Practical strategies could include training programs that inform SMEs about the benefits of tax compliance, the use of digital tools, and addressing perceived risks.

## 5.5. Suggestions for Future Study

Extending research to other regions or countries could validate or challenge the findings, providing a more comprehensive understanding of tax compliance across different contexts. Further, conducting longitudinal studies could reveal how behavioral attributes and digital systems evolve over time and their effects on tax compliance. Future research could explore additional factors influencing tax compliance, such as economic conditions, levels of trust in government, or the impact of economic incentives that could complement the findings of this study.

## REFERENCES

Aiken, L. S., & West, S. G. (1991). Multiple regression: Testing and interpreting interactions. Thousand Oaks, CA: Sage.

Alabede, J., Zainol, A. Z., & Idris, K. (2011). Determinants of tax compliance behaviour: A proposed model for Nigeria. *International Research Journal of Finance and Economics*, 78.

Alm, J., Martinez-Vazquez, J., & Schneidler, F. (2003). Sizing the problem of hard-to-tax,

Alm, J., Sanchez, I., & De Juan, A. (1995). Economic and noneconomic factors in tax compliance. *Kyklos,* 48(1), 1-18

Andrew Young School of Policy Studies. International Conference. University of Georgia, Atlanta

Baeli, J. (2021). Analysis Of Tax Compliance Based On Psychological Factors And Tax Administration. *AKADEMIK: Jurnal Mahasiswa Ekonomi & Bisnis, 1*(3), 87-94.

Bassey, E., Mulligan, E., & Ojo, A. (2022). A conceptual framework for digital tax administration: A systematic review. *Government Information Quarterly,* 39(4), 1-15.

Bazart, C., Bonein, A. Reciprocal relationships in tax compliance decisions. Journal of Economic Psychology, Elsevier, 2014, 40 (Special Issue on Behavioral Dynamics of Tax Evasion), pp.83-102.

Bhutta, Z. M., Tara, N., Rasheed, R., & Khan, A. B. (2019). Psychological factors affecting tax compliance behavior of pakistani tax payer: An extended theory of planned behavior perspective. *Pakistan Journal of Social Sciences*, *39*(4), 1453-1464.

Black, W., & Babin, B. J. (2019). Multivariate data analysis: Its approach, evolution, and impact. In *The great facilitator: Reflections on the contributions of Joseph F. Hair, Jr. to marketing and business research* (pp. 121-130). Springer.

Bobek, D. D., Hageman, A. M., & Kelliher, C. F. (2013). Analyzing the role of social norms in tax compliance behavior. *Journal of Business Ethics,* 115(3), 451-468.

Brockmann, H., Genschel, P., & Seelkopf, L. (2016). Happy taxation: Increasing tax compliance through positive rewards? *Journal of Public Policy,* 36(3), 381–406.

Castro, L., & Scartascini, C. (2015). Tax compliance and enforcement in the pampas evidence from a field experiment. *Journal of Economic Behavior & Organization*, 116, 65-82

Chindengwike, J.D., & Kira, A. R., (2021). The Influence of Electronic Tax Administration system on taxpayers' voluntary compliance in Tanzania. *The Second Business and Economic Development Conference* (pp. 739 - 752).

CIAT. (2006) Organization Structures and Functions of the Tax Administration of CIAT Member Countries. CIAT Technical Publication.

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). Applied multiple regression/ correlation analysis for the behavioral sciences (2nd ed.). Hillsdale, NJ: Erlbaum.

Crivelli. E., Gupta, S. (2014). Resource Blessing, Revenue Curse? Domestic Revenue Effort in Resource-Rich Countries, European Journal of Political Economy.

Devos, K. (2014). 'Tax Compliance Theory and the Literature', 'Tax Compliance Theory and the Literature', Factors Influencing Individual Taxpayer Compliance Behaviour, Springer. pp. 3-65.

Dwenger, N., Kleven, H., Rasul, I., & Rincke, J. (2016). Extrinsic and intrinsic motivations for tax compliance: Evidence from a field experiment in Germany. *American Economic Journal Economic Policy*, 8(3), 203-232

Eberhartinger, E., & Zieser, M. (2021). The effects of cooperative compliance on firms' tax risk, tax risk management and compliance costs. *Schmalenbach Journal of Business Research, 73*(1), 125-178.

Eriksson, K., Strimling, P., & Coultas, J. C. (2015). Bidirectional associations between descriptive and injunctive norms. *Organizational Behavior and Human Decision Processes*, 129, 59-69.

Evans, C., & Tran-Nam, B. (2014). Towards the Development of a Tax System Complexity Index. *Australian School of Business Research Paper* No. 2013 TABL 1001, 35(3), 26.

Fauziati, P., Minovia, A. F., Muslim, R. Y., & Nasrah, R. (2016). The impact of tax knowledge on tax compliance case study in kota padang, Indonesia. *Journal of Advanced Research in Business and Management Studies,* 2(1), 22-30

Fellner, G., Sausgruber, R., & Traxler, C. (2013). Testing enforcement strategies in the field: Threat, moral appeal and social information. *Journal of the European Economic Association*, 11(3), 634-660

Frey, Bruno and Torgler, Benno, (2007), Tax morale and conditional cooperation, Journal of Comparative Economics, 35, issue 1, p. 136-159.

Ghani, H. H. A., Hamid, N. A., Sanusi, S., & Shamsuddin, R. (2020). The effect of Tax knowledge, compliance costs, complexity and morale towards Tax compliance among self-employed in Malaysia. *Global Business and Management Research: An International Journal*, 12(1), 18–32.

Hahs-Vaughn, D. L., & Lomax, R. G. (2020). *An introduction to statistical concepts*. Routledge.

Hamid, N. A., Ismail, I. S., Yunus, N., Jali, M. N., & Rosly, A. S. (2022). Taxpayer Perceptions of tax awareness, tax education, and tax complexity among small and medium enterprises in Malaysia: A quadrant analysis approach. *Universal Journal of Accounting and Finance,* 10(1), 231–242.

Hasan, B. M. S., & Abdulazeez, A. M. (2021). A review of principal component analysis algorithm for dimensionality reduction. *Journal of Soft Computing and Data Mining*, *2*(1), 20-30.

Hernandez, H. (2021). Testing for normality: What is the best method. *ForsChem Research Reports*, *6*(5), 1-38.

Hernandez, M., Jamison, J., Korczyc, E., Mazar, N., & Sormani, R. (2017). Applying behavioral insights to improve tax collection: Experimental evidence from Poland. Washington, D.C.: The World Bank.

Hiebl, M. R., & Richter, J. F. (2018). Response rates in management accounting survey research. *Journal of Management Accounting Research*, *30*(2), 59-79.

Ihnatišinová, D. (2021). *Digitalization of tax administration communication under the effect of global megatrends of the digital age.* Paper presented at the SHS Web of Conferences.

Jaffar, R., Derashid, C., & Taha, R. (2021). Determinants of tax aggressiveness: Empirical evidence from Malaysia. *Journal of Asian Finance, Economics, and Business*, 8(5), 179–188.

Jayawardane, D. (2015). Psychological factors affect tax compliance. A review paper. *International Journal of Arts and Commerce, 4*(6), 131-141.

Jimenez, P., & Iyer, G. S. (2016). Tax compliance in a social setting: The influence of social norms, trust in government, and perceived fairness on taxpayer compliance. *Advances in accounting*, 34, 17-26.

Kafle, S. C. (2019). Correlation and regression analysis using SPSS. *Management, Technology & Social Sciences, 126*.

Kamleitner, B., Korunka, C., & Kirchler, E. (2012). Tax compliance of small business owners. *International Journal of Entrepreneurial Behavior & Researc*h.

Kherif, F., & Latypova, A. (2020). Principal component analysis. In *Machine learning* (pp. 209-225). Elsevier.

Kirchler, E. (2007). The economic psychology of tax behavior. Cambridge University Press. 64.

Kirchler, E. (2014). Cooperative tax compliance: From deterrence to deference. *Current Directions in Psychological Science,* 23(2), 87-92.

Kroenung, J., & Eckhardt, A. (2017). What Determines User Attitudes in IS Research? A Meta-analytic Structural Equation Modeling Approach. *Journal of Information Technology Theory and Application (JITTA)*, 18(3), 34-65.

Levi, Margaret. 1989. Of Rule and Revenue. Berkeley and Los Angeles: University of California Press.

Lubua, E. W. (2022). The implication of using electronic fiscal devices on audit effectiveness among small business owners of Arusha – Tanzania. *The Pan-African Journal of Business Management*, 7(1), 41–57.

Lumumba, O.M., Migwi, S.W., & Mguta, O. (2010). Taxpayers attitude and tax compliance behaviour in Kenya: How the taxpayers attitude influence compliance behaviour among SMESs business income earner. *African Journal of Business and Management,* 1,112-122

Mascagni G, Moore M, McCluskey R (2014). Tax Revenue Mobilization in Developing Countries: Issues and Challenges. Brussels: European Union, Directorate-General for External Policies of the Union, Directorate B, Policy Department.

Mbise, K. S., & Baseka, L. (2022). The Impact of Digital Systems on Tax Compliance Among SMEs. *The Journal of Informatics*, *2*(1).

Munga, Y., Olweny, T., & Yegon, C. (2021). *Effect of psychological factors and knowledge on Tax compliance of Micro and Small Enterprise Owners in Nairobi County, Kenya.* KESRA/Moi University,

Mursheda, M., Mursheda, K., Omar Faruque, F., & Omar Faruque, G. (2020). Socio-Economic Factors of Tax Compliance: An Empirical Study of Individual Taxpayers in the Dhaka Zones. In: Bangladesh.

Musau, N. (2015). Determinants of tax compliance among small and medium enterprises in Kenya: a case of Nairobi county. School of Economics, University of Nairobi.

Musimenta, D. (2020). Knowledge requirements, tax complexity, compliance costs and tax compliance in Uganda. *Cogent Business & Management*, 7(1), 1–19.

Muturi, H.M., & Kiarie, N. (2015). Effects of online tax system on tax compliance among small taxpayers in Meru County, Kenya. I*nternational Journal of Economics, Commerce and Management,* 3(12), 280-297.

Nabaweesi, J. (2017). Social norms and tax compliance among small business enterprises in Uganda

Nazarov, M., Mikhaleva, O., & Chernousova, K. (2020). *Digital transformation of tax administration.* Paper presented at the Digital Age: Chances, Challenges and Future 7.

Nguyen, T. H. (2022). The impact of non-economic factors on voluntary tax compliance behavior: A case study of small and medium enterprises in Vietnam. *Economies, 10*(8), 179.

Niemirowski, P., Wearing, A.J., Baldwin, S., Leonard, B., & Mobbs, C. (2012). The influence of tax related behaviours, beliefs, attitudes and values on Australian taxpayer compliance, is tax avoidance intentional and how serious an offence is it? University of New South Wales, Sydney.

Night, S., & Bananuka, J. (2020). The mediating role of adoption of an electronic tax system in the relationship between attitude towards electronic tax system and tax compliance. *Journal of Economics, Finance and Administrative Scien*ce, 25(49), 73-88

Nitami, G. P., Prinintha, N. S., Azrul, A., Bani, A., & Hanifiyah, Y. H. (2023). Justice, Trust, Perceived of Risk and Voluntary Tax Compliance in MSME. *he International Journal of Applied Business*, *7*(2), 185-195.

Niway Ayalew Wondwossen, (2016). Determinants of voluntary compliance behavior evidence from SNNPR, Ethiopia. *International Journal of Science and Research*, 5(12), pp. 967-973.

Noor Azmi, N. P. N. A., Tarmuji, I., Hamid, N. A., Rasit, Z. A., & Rashid, N. (2020). Tax compliance motives among grab car drivers in Malaysia. *Journal of Critical Reviews,* 7(11), 446–451

OECD, OECD Principles of Corporate Governance, Paris, (2004), OECD Publishing

Ondara, T.G., Kimani, M., & Kwasira, J. (2016). Influence of online tax filing on tax compliance among small and medium enterprises in Nakuru town, Kenya. *IOSR Journal of Business and Management,* 18(10), 82-92.

Osborne, J. & Waters, E. (2018). Four assumptions of multiple regression that researchers should always test. *Practical Assessment, Research and Evaluation, 8* (2).

Osborne, J. W., & Waters, E. (2019). Four assumptions of multiple regression that researchers should always test. *Practical Assessment, Research, and Evaluation, 8*(1), 2.

Palil MR, Mustapha AF (2011) Determinants of tax compliance in Asia: a case of Malaysia. *Eur J Soc Sci* 24(1):7–32

Palil, M. R., (2010). Tax Knowledge and Tax Compliance Determinants in Self-Assessment System in Malaysia. A thesis submitted to The University of Birmingham for the degree of Doctor of Philosophy. Birmingham: The University of Birmingham

Palil, M.R., & Mustapha, A.F. (2015). The evolution and concept of tax compliance in Asia and Europe. *Australian Journal of Basic and Applied Science*s, 5(11), 557- 563

Razali, N.M. & Wah, Y.B. (2018). Power comparisons of Shapiro-Wilk, Kolmogorov-Smirnov, Lilliefors and Anderson-darling tests. *Journal of Statistical Modeling and Analytics*, *2*(1), 21-33

Richardson, G. (2006). The impact of tax fairness dimensions on tax compliance behavior in an Asian jurisdiction: The case of Hong Kong. *The International Tax Journal*, 32(1), 29–42.

Roni, S. M., & Djajadikerta, H. G. (2021). *Data analysis with SPSS for survey-based research*. Springer

Saad, N. (2012). Tax non-compliance behaviour: Taxpayers view. *International Congress on Interdisciplinary Business and Social Science*, 65, 344–351.

Sataloff, R. T., & Vontela, S. (2021). Response rates in survey research. *Journal of Voice, 35*(5), 683-684.

Schmidt, A. F., & Finan, C. (2018). Linear regression and the normality assumption. *Journal of clinical epidemiology*, *98*, 146-151.

Schneider F (2011). Handbook on the Shadow Economy. Cheltenham, UK: Edward Elgar Publishing Limited

Schreiber, J. B. (2021). Issues and recommendations for exploratory factor analysis and principal component analysis. *Research in Social and Administrative Pharmacy*, *17*(5), 1004-1011

Slemrod J (2015). Tax Compliance and Enforcement: New Research and its Policy Implications. Working Draft.

Soliz, A. B. (2015). Tax Compliance: Ethical Orientation, Risk Perception And The Role Of The Tax Preparer.

Sritharan, N., Salawati, S., & Cheuk, S. C.-S. (2020). How social factor determine individual taxpayers' tax compliance behaviour in Malaysia? *International Journal of Business and Society, 21*(3), 1444-1463.

Thiga, M.N and Muturi, W (2015), Factors That Influence Compliance Among Small and Medium Sized Enterprises in Kenya, *International Journal of Scientific and Research Publications*, Vol-5, Issue 6.

Tilahun A. & Yidersal D, (2014). Determinants of Tax Compliance Behavior in Ethiopia: The Case of Bahir Dar City Taxpayers. *Journal of Economics and Sustainable Development* Volume Vol.5, issue number 15. pp.268- 273

Tilahun, M. (2018). Economic and social factors of voluntary tax compliance: Evidence from Bahir Dar City. *International journal of Accounting research, 6*(2), 182-188.

Tsagris, M., & Pandis, N. (2021). Normality test: Is it really necessary? *American journal of orthodontics and dentofacial orthopedics, 159*(4), 548-549

Tyler, Tom R. 2006. Why People Obey the Law. Princeton: Princeton University Press.

Utama, M. S., Nimran, U., Hidayat, K., & Prasetya, A. (2022). Effect of religiosity, perceived risk, and attitude on tax compliant intention moderated by e-filing. *International Journal of Financial Studies, 10*(1), 8.

Wassermann, M., & Bornman, M. (2020). Tax knowledge for the digital economy. *Journal of Economic and Financial Sciences*, 13(1), 1-11.

World Bank. 2019. Increasing Tax Compliance in the Shadow Economy in Latvia (English). eMBeD brief. Washington, D.C.: World Bank Group

Zainuddin, S. Z. (2018). Tax knowledge, tax penalty, and tax rate on tax compliance among small-medium enterprises in Selangor. *Global Business and Management Research: An International Journal*, 10(3), 12–23.

# APPENDICES

## Appendix I: Data Request form

**RE: REQUEST FOR DATA COLLECTION**

I'm a final-year student at Moi University's Master of Tax Administration (KESRA) program. I'm working on a research paper on **" MODERATING ROLE OF DIGITAL SYSTEMS ON THE SELECTED BEHAVIORAL ATTRIBUTES ON TAX COMPLIANCE AMONG MICRO, SMALL AND MEDIUM ENTERPRISES IN NAIROBI COUNTY KENYA** "as one of the criteria for receiving a Master of Business in Tax Administration degree. In this regard, I gladly ask for your assistance in terms of time and by answering the questionnaire that is attached. Your honesty and correctness will be crucial in ensuring unbiased research. Your name won't be mentioned anywhere in the report because it's an academic study and confidentiality is stressed. Please take a moment to complete the attached survey. Thank you in advance

Yours Sincerely,

**Purity Makandi Mwirigi**

## Appendix II: Questionnaire

### Section A: Demographic Information

1. Gender:

   Male ( )

   Female ( )

2. What is your level of education?

   Certificate ( ) Diploma ( ) Undergraduate ( ) Masters ( )

   Other ( ) Specify _____

3. How old are you?

   Below 18 year ( )

   19-28 years ( )

   29-40 years ( )

   41-50 years ( )

   Over 50 years ( )

4. For how long have your enterprise in operations?

   Below 1 year ( )

   1-5 years ( )

   6-10 years ( )

   11-19 years ( )

   Over 20 years ( )

5. Capacity in terms of the number of employees in your enterprise:

   Less than 9 employees [ ] 10 – 49 employees [ ]

   50 – 99 employees [ ] Over 100 employees [ ]

6. Turnover sales your enterprise in millions of shillings:

   Less than 1 million [ ] Between 2 and 5 million [ ]

   Between 6 and 20 million [ ] Between 21 and 99 million [ ]

   Over 100 million [ ]

**Section A**

**Tax Compliance Behaviour**

Please indicate with a tick √ the extent to which you agree with any of the following statements concerning your enterprise tax compliance. Use the scale where 1: Strongly disagree 2: Disagree, 3: Neutral, 4: Agree, 5: Strongly Agree

| | **Proxy statement** | **SA** | **A** | **N** | **D** | **SD** |
|---|---|---|---|---|---|---|
| **1** | I have been paying my tax obligations correctly | | | | | |
| **2** | I have been paying my tax obligations on time | | | | | |
| **3** | I have no problem in complying with my tax obligation | | | | | |
| **4** | I am fully satisfied with all tax requirements imposed by KRA | | | | | |
| **5** | I am not ignorance of some legislation changes in tax compliance | | | | | |
| **6** | I am not confused by the use of tax law's ambiguities and gaps in taxpayers' favors | | | | | |
| **7** | Given a chance, I would not file my returns | | | | | |
| **8** | I make timely payments of the owed taxes without any enforcement activity. | | | | | |

**Sociological attributes**

Please indicate with a tick √ the extent to which you agree with any of the following statements concerning your enterprise tax compliance. Use the scale where 1: Strongly disagree 2: Disagree, 3: Neutral, 4: Agree, 5: Strongly Agree

| | **Proxy statement** | **SA** | **A** | **N** | **D** | **SD** |
|---|---|---|---|---|---|---|
| **1** | I believe that procedures for tax filing are too complicated | | | | | |
| **2** | Ethnic background | | | | | |
| **3** | I trust in the tax authority | | | | | |
| **4** | My personal belief is that it is important to pay taxes. | | | | | |
| **5** | My level of tax compliance is determined by what I think other people do. | | | | | |
| **6** | My level of tax compliance is determined by what most people suggest I should do. | | | | | |
| **7** | My level of tax compliance is influenced by what people close to me suggest I should do | | | | | |

**Psychological attributes**

Please indicate with a tick √ the extent to which you agree with any of the following statements concerning your enterprise tax compliance. Use the scale where 1: Strongly disagree 2: Disagree, 3: Neutral, 4: Agree, 5: Strongly Agree

| | **Proxy statement** | **SA** | **A** | **N** | **D** | **SD** |
|---|---|---|---|---|---|---|
| **1** | I trust in tax agencies in discharging their duty | | | | | |
| **2** | I value the payment of taxes to the government | | | | | |
| **3** | I believe that there is fairness in our tax system | | | | | |
| **4** | I believe there is no opportunity to evade paying tax | | | | | |
| **5** | I believe that there is a higher likelihood of being caught when cheating | | | | | |
| **6** | I believe that it is unethical not to pat taxes | | | | | |
| **7** | I think the tax burden to small scale businesses is too much. | | | | | |
| **8** | I believe that the penalties of tax noncompliance are too high | | | | | |

**Perceived risk**

Please indicate with a tick √ the extent to which you agree with any of the following statements concerning your enterprise tax compliance. Use the scale where 1: Strongly disagree 2: Disagree, 3: Neutral, 4: Agree, 5: Strongly Agree

| | **Proxy statement** | **SA** | **A** | **N** | **D** | **SD** |
|---|---|---|---|---|---|---|
| **1** | E-tax has safeguarded the business from tax compliance risks | | | | | |
| **2** | The risks associated with specific business transactions undertaken by the company have been Reduced. | | | | | |
| **3** | The firm has been able to identify high-risk audit companies. | | | | | |
| **4** | Filing tax returns would be difficult to be done without an E-tax | | | | | |
| **5** | I find the E-tax system costly in my enterprise | | | | | |
| **6** | I make errors frequently when using the E-tax system | | | | | |
| **7** | The E-tax system often behaves in unexpected ways | | | | | |

**Digitalization of tax administration systems**

Please indicate with a tick √ the extent to which you agree with any of the following statements concerning your enterprise tax compliance. Use the scale where 1: Strongly disagree 2: Disagree, 3: Neutral, 4: Agree, 5: Strongly Agree

| | **Proxy statement** | **SA** | **A** | **N** | **D** | **SD** |
|---|---|---|---|---|---|---|
| **1** | My firm uses e-tax systems to file returns | | | | | |
| **2** | My firm uses the e-tax system to avoid tax penalties | | | | | |
| **3** | My firm has a computer system connected to the Internet to handle tax issues | | | | | |
| **4** | My company uses the e-tax to ensure compliance with tax laws | | | | | |
| **5** | I use e-tax to pay taxes and fees | | | | | |
| **6** | My firm is equipped with computer skills to solve problems when using e-tax | | | | | |
| **7** | My firm registers for the tax identification number through the e-tax system | | | | | |
| **8** | My firm is currently using the e-tax system to fulfill tax obligations | | | | | |

## Appendix III: Institution Letter

KENYA REVENUE AUTHORITY

ISO 9001:2015 CERTIFIED

PUBLIC

**KENYA SCHOOL OF REVENUE ADMINISTRATION**

**REF: KESRA/NBI/036**

29th August 2024

**TO: WHOM IT MAY CONCERN**

Dear Sir/Madam,

**RE: REQUEST FOR ASSISTANCE TO PURITY MAKANDI MWIRIGI OF REGISTRATION NO.: KESRA105/0089/2019 UNDERTAKING MASTERS AT KESRA**

This is to confirm that the above named is a student at Kenya School of Revenue Administration (KESRA) Nairobi Campus pursuing Masters in Tax and Customs Administration.

The named student is undertaking Research on TOPIC: **"Moderating role of digital systems on the selected behavioral attributes on tax compliance among small and medium enterprises in Nairobi county, Kenya."**

The purpose of this letter is to request for your kind facilitation in enabling the student progress in her research project by allowing access to any relevant information and/or conduct interviews, which are relevant to the project.

Your support to the student in this regard will be highly appreciated.

Thank you.

KENYA SCHOOL OF REVENUE ADMINISTRATION
DEAN OF STUDIES
ACADEMIC AFFAIRS DIVISION

**Dr. Marion Nekesa**
**For: Manager Academic Research**

*Tulipe Ushuru, Tujitegemee!*

**Appendix IV: NACOSTI Research License**

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR
SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **707639**

Date of Issue: **09/September/2024**

## RESEARCH LICENSE

**This is to Certify that Ms.. PURITY MAKANDI MWIRIGI of Kenya School of Revenue Administration, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: MODERATING ROLE OF DIGITAL SYSTEMS ON THE SELECTED BEHAVIORAL ATTRIBUTES ON TAX COMPLIANCE AMONG SMALL AND MEDIUM ENTERPRISES IN EMBAKASI SUB-COUNTY, NAIROBI KENYA. for the period ending : 09/September/2025.**

License No: **NACOSTI/P/24/39741**

**707639**

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR
SCIENCE,TECHNOLOGY &
INNOVATION

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**See overleaf for conditions**

## Appendix IV: Plagiarism Report