

UNIVERSITY OF GHANA
COLLEGE OF HUMANITIES

DYNAMICS BETWEEN TECHNOLOGY ADOPTION AND TAX
REVENUE GENERATION IN GHANA: AN EMPIRICAL
INVESTIGATION

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DEPARTMENT OF OPERATIONS AND MANAGEMENT INFORMATION
SYSTEMS

JANUARY 2023

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REVENUE GENERATION IN GHANA: AN EMPIRICAL
INVESTIGATION

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A THESIS SUBMITTED TO THE DEPARTMENT OF OPERATIONS AND
MANAGEMENT INFORMATION SYSTEMS, UNIVERSITY OF GHANA
BUSINESS SCHOOL, UNIVERSITY OF GHANA, LEGON IN PARTIAL
FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF AN MPHIL
IN MANAGEMENT INFORMATION SYSTEMS DEGREE

JANUARY, 2023

DECLARATION

I do hereby declare that this work is the result of my own research and has not been presented by anyone for any academic award in this or any other university. All references used in this work have been fully acknowledged.

I, therefore, bear responsibility for any shortcomings.



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ABSTRACT

Economic growth increases a country's taxable capacity, allowing the government to tax a larger proportion of the private sector's resources to fund the provision of public goods and services. As a result, many governments rely on taxation to generate resources to meet their expenditure needs. Nonetheless, there have been few studies on the impact of electronic tax implementation in developing economies such as Ghana. The study explored the fitness of electronic tax adoption in Ghana and evaluate its economic factors, IT Infrastructure and organizational viability impact on tax revenue generation. This study's theoretical foundation is the Fit Viability theory.

The study employed a quantitative design. Data was collected through a survey. The study employed a purposive sampling technique to sample 138 staff of various businesses in Accra who file their tax to the Ghana Revenue Authority (GRA). The Partial Least Squares Structural Equation Modeling (PLS-SEM) was used to analyze the effects of task requirements, technology characteristics, economic, IT infrastructure, individual characteristics and organizational support on revenue generation.

The study found that fit and viability were significant in determining the adoption of electronic tax systems in Ghana. However, only task characteristics were shown as a significant predictor of Fit in the model. Also, Information Technology Infrastructure was the only factor seen in the study as significant on viability.

The findings of this research demonstrate that information infrastructure self-efficacy significantly influences the intention to adopt electronic tax technology. The study recommended the creation of electronic tax filing solutions that provide consumers with a robust, reliable level of security and privacy protection. According to the study, managers should keep in mind that making the electronic tax useful and user-friendly is not enough. Managers must work to increase the number of people who use electronic tax. Managers must also create electronic tax filing options that provide customers with a high level of security and privacy protection.



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DEDICATION

I dedicate this work to my lovely Husband Mr. Cheetam Bartels and our children Praise, Glory and Joy and all my siblings.



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ACKNOWLEDGMENT

I would extend my profound gratitude to my supervisors Dr. Acheampong Owusu and Professor Richard Boateng for their diverse contributions, encouragement, and supervision throughout this work. I would have not made it this far without you. May the good Lord continue to bless you with more wisdom.

My heartfelt gratitude also goes to my beloved family especially my husband for their continued support and encouragement in both hard and good times during the period of my studies.

My special thanks to Dr. Edwin Acheampong, Dr. Awuni, Mr. Julian Otoo-Provencal, and Mr. Prosper Mensah for their outstanding mentorship and encouragement. May the good Lord continue to bless all of you.

My last gratitude goes to all my friends and coursemates for their encouragement and support in one way or the other throughout my studies.



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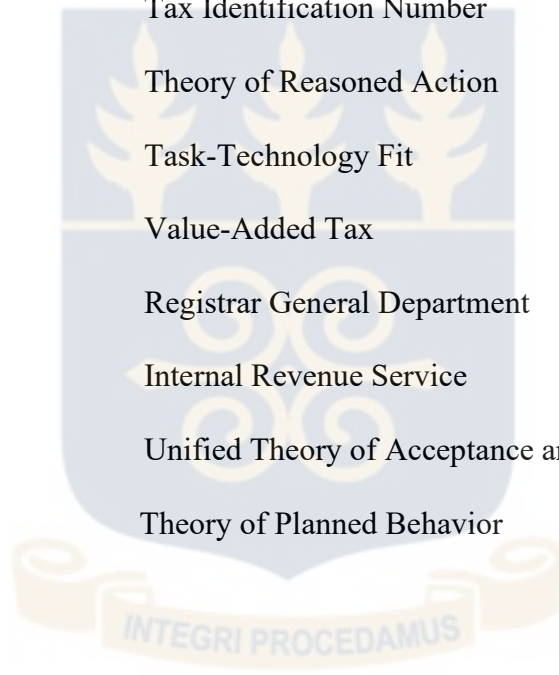


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LIST OF ABBREVIATIONS

IT:	Information Technology
KPI:	Key Performance Indicators
ICT:	Information Communication Technology
TTF:	Task-Technology Fit
TAM:	Technology cceptance Model
IS:	Information System
PLS-SEM:	Partial Least Squares-Structural Equation Modelling
TC:	Task Characteristics
PE:	Personalisation
MO:	Mobility
CO:	Collaboration
PF:	Performance
AVE:	Average Variance Extracted
HTMT:	Heterotrait-Monotrait ratio
SRMR:	Standardized Root Mean Squared Residual
TPC:	Task-To-Performance Chain
GOF:	Goodness of Fit
AVE:	Average Variance Extracted
CFA:	Confirmatory Factor Analysis
CPCs:	Centralised Processing Centres
e-Tax:	Electronic Tax
FVM:	Fit Viability Model

FVT:	Fit-Viability Theory
GDP:	Gross Domestic Product
GRA:	Ghana Revenue Authority
IS:	Information System
SEM:	Structural Equation Model
TAM:	Technology Acceptance Model
TIN:	Tax Identification Number
TRA:	Theory of Reasoned Action
TTF:	Task-Technology Fit
VAT:	Value-Added Tax
RGD:	Registrar General Department
IRS:	Internal Revenue Service
UTAUT:	Unified Theory of Acceptance and Use of Technology
TPB:	Theory of Planned Behavior



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CHAPTER ONE

INTRODUCTION

1.1 Background

Technological advancements have had an impact on our lives and are continuing to alter the way we go about our daily lives, from the simplest of jobs to the most complex and unusual ones (Rao et al., 2016). To think that we ever lived in a world without social media sites like Facebook, without search engines like Google, smartphones or tablets, and so on, is impossible to comprehend in today's society (Makridakis, 2017). Surprisingly, that was the world in which we lived until only around 20 years ago. It is possible to see and feel the impact of technology in every aspect of our lives. From commerce and entertainment to education and communications to healthcare and taxation. According to OECD statistics, the usage of digital channels (online, email, and digital assistance) increased from 2016 to 2017, and the use of conventional channels decreased (e.g., in-person contacts were down 15%). More than 40 governments claimed they were utilizing or intended to employ artificial intelligence in 2017 (PwC Paying Taxes Report, 2020).

When properly implemented and utilized by the majority of taxpayers, an electronic system for filing and paying taxes in Ghana will benefit both the tax authorities and the taxpayers. For tax administrations, electronic filing decreases effort and operational costs such as the costs of processing, storing, and handling tax returns by reducing paper-based filing (Bhuasiri et al., 2016). At the same time, it helps to improve tax compliance while also saving time. In the long run, taxpayers benefit from electronic filing since it reduces the number of calculation errors on their tax returns and makes it easier to prepare, file, and pay their taxes (Ann et al., 2021). Additionally, both the government and taxpayers gain from a decrease in the likelihood of corruption situations

occurring, which are more likely to occur when taxpayers have more frequent interaction with tax administration workers. According to a World Bank, (2020) report on improving revenue mobilization through enhanced tax compliance and administrative systems, Ghana's tax collection is low when compared to other lower-middle-income nations. In Ghana, non-compliance with tax obligations has become an urgent issue, as the government has been suffering from a widening fiscal imbalance as well as a growing debt burden (Oduro-Appiah et al., 2019). Following the lessons learned from other countries' experiences, the World Bank offers the following interventions:

The corporate tax, Ghana's corporate tax gap is significant. It was estimated to be at least 9.4 percent of GDP in 2014. The World Bank report proposes six interventions:

1. Improve the delivery of electronic databases of firms and electronic submission of tax returns and declarations,
2. Digital payment of transactions,
3. Withholding,
4. Third-party information reporting,
5. Deterrent messages, and
6. A minimum tax scheme.

GRA uses a variety of IT tools to aid in its revenue mobilization efforts, as it believes that data and fast analysis are critical for modern tax administrations. However, the GRA's present Information Technology (IT) systems for tax revenue collection are deemed to be varied, complicated, and insufficient, with flaws that prevent effective tax administration (Keene et al., 2019). The creation of a database of companies is the top priority. The database system will enable

the GRA to establish online and mobile tax payment systems, monitor and enforce compliance, conduct tax incidence analysis, and estimate tax gaps (Keene et al., 2019).

Tax avoidance and evasion are widespread in Ghana, with the informal sector accounting for more than 86 percent of the country's workforce (Jacolin & Joseph, 2019). The World Bank (2020) report supports the assertion that effective tax revenue mobilization is critical for long-term economic growth in Ghana, where the role of technology adoption in effective tax revenue mobilization is important. Because of the high incidence of tax evasion and avoidance in the informal sector of many developing nations, broadening the tax net to produce more revenue through the use of technology, rather than increasing tax rates, may be beneficial to economic development (Moore, 2022). This is because many developing countries, such as Ghana, suffer from significant finance shortages and limits, which prevent public sector investment in infrastructure, roads, electricity, and education, among other things.

According to Ghana's budget deficit, which is now at 18 percent of GDP, inadequate tax income is a contributing factor to the country's large deficit (Night & Bananuka, 2020). While the low level of domestic revenue mobilization is a key source of concern for the Ghanaian government and its development partners, there is a broader concern that the formal sector is being overtaxed while the informal sector is being undertaxed, according to the World Bank. In contrast, taxing the informal sector, which is defined as "informal," represents a significant challenge (Sakah et al., 2017). Owing to the enormous benefits of technology adoption in revenue generation, the Ghana revenue authority (GRA) on behalf of the Ghana government, has recently begun the implementation of an electronic-Tax (e-Tax2) system. The Governments' encouragement for

citizens to obtain tax identification numbers (TIN), and the national identification cards known simply as the Ghana card, is all in the bid to fully digitize the economy and widen the tax net to cover the over 86% of people in the informal sector with the ultimate goal of generating more revenue (Oduro-Appiah et al., 2019). Since the implementation of the technology is new to Ghana, it is imperative to assess its performance to revenue generation, the projects viability, its fit in providing solutions to the low revenue generation in Ghana and assess whether there is even the infrastructure in place to ensure the goals of the project are met. The author empirically investigates the aforementioned using the fit-viability approach.

1.2 Research Problem

Economic growth increases a nation's capacity to tax, which in turn enables a greater proportion of the resources from the private sector to be transferred to the government in the form of taxes to pay for the delivery of public goods and services (Sulemana, 2019). As a result, many governments rely heavily on taxation to generate the resources necessary to meet their expenditure requirements. When the revenue productivity of these countries falls below the expenditure productivity, they will almost certainly find themselves in a state of escalating fiscal imbalance (Wade, 2018). As a result, it is critical to have processes in place to ensure that taxes are effectively paid up across the economy.

For example, Ghana's emerging economy differs from mature economies, where taxes are mostly declared online, with approximately 98 percent of taxes being declared electronically. It takes three minutes when it comes to personal tax declarations in developed countries. There is no tax on retained and reinvested profits, and the tax rate on distributed profits ranges from 14 to 20 percent.

All these tax revenues and economic successes in developed countries are attributable to technology adoption in the form of digitization. In the case of Ghana, 86% of workers are in the informal economy (Titumir, 2021a). The availability of data remains a problem until recently when the government of Ghana began its digitization drive to ensure that the tax net is widened to include informal sector workers. This has led to the introduction of the electronic tax system which allows taxes to be filed with ease and convenience. Typical of an electronic system such as this will also permit the collection of data that which government can rely on for insights to ensure sustained economic growth and livelihood improvements through its policies.

Essentially, the main goal of Ghana's budding electronic tax system is for all, irrespective of the sector people find themselves in, to be captured under the tax net, which subsequently raises revenue generation (Oduro-Appiah et al., 2019). There is no gain in saying the fact that there have been several studies on the benefits of harnessing the power of new technology in bringing about optimization and improving performance in many fields (Aulck et al., 2019; Vassakis et al., 2018; Voorhees et al., 2016). However, the researcher, through the review of the literature saw limited studies on the impact of the implementation of the electronic tax in Ghana. Therefore, it is imperative to assess the performance of the electronic tax system given how young the project is, assess in the first place if there is an infrastructure to facilitate the smooth implementation of the project, and assess its viability and fit using the fit-viability theory.

1.3 Research Purpose

The study sought to explore the fitness of electronic tax adoption in Ghana and to evaluate its

economic factors, IT Infrastructure and organizational viability impact on tax revenue generation.

1.4 Research Objectives

In accordance with the research purpose, this study seeks to:

1. Explore the current state of electronic tax implementation in Ghana
2. Examine the task-technology fit (TTF) impact on electronic tax adoption in Ghana
3. Evaluate the viability impact on tax revenue generation in Ghana

1.5 Research Questions

1. What is the current state of electronic tax implementation in Ghana?
2. What is the task-technology fit (TTF) impact on electronic tax adoption in Ghana?
3. What is the viability impact on tax revenue generation in Ghana?

1.6 Significance of the Research

This study is anticipated to have an impact on three key areas: first, research; second, practice; and third, policy.

In the area of research, this study will impact knowledge on electronic tax and show the relationship between technology adoption by way of electronic tax and tax revenue generation.

The study will provide knowledge on how fit-viability theory (FVT) well underpins this study.

In practice, the recent digitization drive in Ghana and the implementation of the electronic tax system are expected to make available data, widen the tax net, and raise revenue generation. Given the rise of the electronic tax system in Ghana, the study's significance is in providing insights that will guide GRA to implement the policies of the government profitably.

Policy development has benefited from this study, in that, the study's findings will cause the coming into effect policy formulation and implementation designed to leverage the technology of the electronic tax system to ensure the continued growth and performance of Ghana's economy through effective tax revenue collection.

1.7 Chapter Outline

The research would be divided into seven (7) chapters. The first chapter of the research includes an introduction to the topic. It takes into consideration the study's context (background), among other things, the significance of the study, the problem statement, the research objectives, the research questions, and the significance.

The second chapter covers related literature and explains some principles related to e-Tax implementation and performance.

The theoretical framework and hypotheses for this investigation were developed in Chapter three of this study. The fundamental theory, which served as the foundation for the study's assumptions, is explained in detail in this chapter. The conceptual framework of the study was also discussed in detail in this chapter.

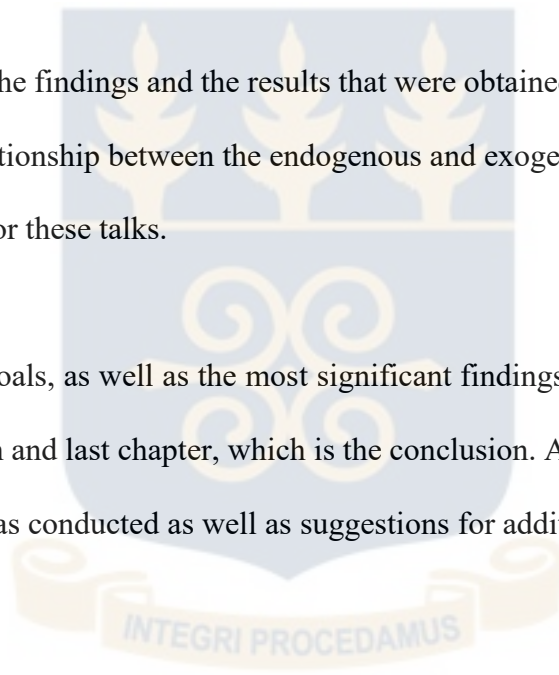
In Chapter four, the methodology and sample strategies used in the study are described. It also went through the model definition as well as the variables that would be used in the study.

In chapter five, we examine and present the study's results and findings, as well as its analysis.

In chapter five, the research's findings are presented along with an analysis. The demographic characteristics of the participants in this study are the subject of the opening section of this presentation. Additionally, the measurement model was assessed to ensure the correctness of the standard choice rules. The Multicollinearity Statistics, the Bootstrapping Direct Effect Results, and a fit assessment are also provided as part of a structural model evaluation.

The researcher discusses the findings and the results that were obtained after analyzing the data in the sixth chapter. The relationship between the endogenous and exogenous variables in the model serves as the foundation for these talks.

The research's aims and goals, as well as the most significant findings and recommendations, are summarised in the seventh and last chapter, which is the conclusion. Additionally, it transmits the results of the study that was conducted as well as suggestions for additional investigation.



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CHAPTER TWO

LITERATURE REVIEW

2.1 Chapter Overview

As an emerging and increasingly used technology, the electronic tax system has the potential to improve the performance of tax organizations. This chapter reviews related literature on technology adoption and tax revenue generation in Ghana. The researcher first of all defined some fundamental concepts of the study, did a theoretical review of literature, reviewed the empirical literature on the topic and concluded with a summary.

2.2 Electronic Tax system

For the government to deliver public benefits and distribute wealth, tax compliance is of the utmost significance (Jayawardane & Low, 2016). ICT has brought about a change in every area of life including revenue collection for governments. (Wasao, 2014) defines an electronic tax system as an online platform that enables the taxpayer to obtain tax services online. These include submitting returns, registering an application for a payment and compliance certificate, and registering for a tax identity number. electronic tax filing is one of the services on which governments are concentrating their efforts right now. This is because the economy of any country is entirely dependent on the tax money that governments collect from residents and businesses through a variety of mechanisms. electronic tax or Tax e-Filing is the term used to describe the provision of electronic services by governments to citizens and corporations to file tax returns and deposit tax revenues (Azmi & Kamarulzaman, 2010).

E-filing of tax returns has not only made it easier for taxpayers to file tax returns at any time and from any location, but it has also decreased the time it takes to get a refund if one is due and eliminated the need to hire someone to help transport files (Ampaabeng et al., 2022). Technology advances and a customer-centric approach that prioritizes providing high-quality services to taxpayers are making all the difference between automation and electronic tax. It is quite simple for the government to accommodate an ever-increasing number of taxpayers while also collecting additional money (Jacolin & Joseph, 2019). Additional factors such as the distinction between taxpayer waiting time and GRA processing time and enhancing performance all contribute to the importance of employing technology for internal efficiency and the benefit of taxpayers.

The Internal Revenue Service's originally offered tax return e-filing for tax refunds solely in the USA, where electronic tax systems were first implemented (Muturi, 2015). According to Maisiba and Atambo (2016), the electronic tax system promotes speedier accessibility to tax services without requiring a physical visit to the tax authority's offices, which they claim enhances tax compliance. According to Motwani et al. (2015), a system that is user-friendly, secure, dependable, easy to use, and offers a range of services would increase voluntary tax compliance.

There are many countries that have adopted computerized tax systems, including Australia, Canada, Italy, the UK, Chile, Ireland, Germany, France, The Netherlands, Finland, Sweden, Switzerland, Norway, Singapore, Brazil, Mexico, India, China, Thailand, Malaysia, and Turkey (Muturi, 2015). Uganda, Nigeria, Rwanda, and Kenya are among the African countries that have embraced the computerized tax system (Muturi, 2015).

An innovative way for tax authorities to interact with taxpayers in a world where the tax landscape is changing quickly is through an electronic tax system.

2.3 Tax Policy and Reforms in Ghana

The government's reform taxes are used to align long-term economics in the process of fostering an environment that is suitable and favorable for business success. To promote and safeguard the expansion of small taxpayers, governments have implemented a variety of tax measures. However, by probing into tax compliance, the following questions were posed: How can the government improve small taxpayers' level of compliance? How, therefore, might tax literacy spur technology use, particularly among small taxpayers? Despite these worries, tax compliance should provide a calm environment where small taxpayers may expand their operations and improve their tax literacy.

Ghana has put in place tax laws and measures to ensure tax compliance. For instance, to improve tax payments, increase the efficiency of the tax system, and reduce compliance costs, the Internal Revenue Service (IRS) and the Custom Exercise and Preventive Service (CEPS) merged to form the General Accounting Office (GRA). Additionally, the Ghanaian government started the e-government initiative in November 2011 to link the GRA and the Registrar General's Department (RGD) to monitor the payment of taxes from registered businesses through the payment of electricity bills. Act 734, which amended the VAT Act, 1998, Act 546, was passed by the Parliament in 2007 and established the flat-rate Value Added Tax (VAT) system. For instance, the Tax Stamp in Ghana placed a flat tax on certain businesses and organizations.

2.4 Nature of Taxes in Ghana

Taxation is defined as the collection of obligatory contributions from public entities by the taxing authority to cover their operating costs without providing the donor with any particular benefits (Rametta, 2022). It also describes any sum of money that a nation's government is required to collect from its residents without offering any kind of reward or compensatory goods in exchange for the money collected (Attobrah, 2020). Direct and indirect taxes are the two types of taxes in Ghana. Direct taxes are expected to be paid by the people or entities that they are directly levied to, with the same person or group having control over their occurrence. According to GRA, a direct tax is also referred to as Pay as You Earn and is a type of tax levied on an employee's salary. As a result of this tax's progressive nature, higher-income individuals pay a higher percentage of taxes than do lower-income individuals (Abuselidze, 2020). In contrast, corporation tax is an additional type of direct tax levied against the earnings of businesses.

The rise in the value of the chargeable assets between the times of acquisition and sale is taxed as capital gain (Osho et al., 2019). Another type of tax levied on the transfer of personal wealth from one person to another is the gift tax. The tax rate is applied on taxable gifts over fifty, however, there are various exemptions. Contrarily, indirect taxes are assessed on funds used to acquire goods and services and are only paid at the time the relevant items and services are purchased (Attobrah, 2020). These are taxes that the Customs, Excise and Preventive Services (CEPS) and Value-Added Service (VAS) divisions collect (VAT). The three primary indirect taxes are value-added tax, export duty, and import duty. VAT is a tax that is levied on the products and services that are purchased (B. Sharma et al., 2022). It is collected by a licensed organization on behalf of the GRA at every stage along the manufacturing and distribution chain.

2.5 Components of a successful technology-driven tax system

The electronic Tax system is not only a tool for self-service, but it also serves as a facilitator for an organization. It is impossible to overstate the importance of using technology to improve performance in institutions (Sifile et al., 2018). This is especially true for the government's revenue collection efforts, which aim to increase revenue generation while simultaneously improving performance using technology to treat taxpayers as customers have resulted in new organizational structures that take advantage of the efficiency of processing large volumes in a centralized location to increase efficiency even further. It is common to practice building up Centralised Processing Centres (CPCs) to streamline the processing of returns, allowing Assessment Units to devote more time to high-quality work (Soneka & Phiri, 2019). According to Soneka and Phiri (2019), a good technology-driven tax system should have the following characteristics: it should help raise taxes and enhance performance, as measured by an increase in revenue generation and tax compliance.

2.5.1 Smooth transition

An organized effort should be made to guarantee that taxpayers are made aware of and educated about the e-system so that they are completely informed about it. A variety of media, including social media, print media and electronic should be employed to achieve a larger audience reach. Users should be able to see short demonstration movies on the portal to help them navigate the site. Before a full deployment, the implementation should be done in steps, with thorough testing in between. It is also necessary that manual information from existing taxpayers be absorbed into the electronic system and validated by taxpayers as a starting point to achieve this (Masunga et al., 2020).

2.5.2 Inclusiveness and Simplicity

Even those with only a high school diploma or less ought to be able to use the system with ease. As a result, the system will become more inclusive. If data validation is not required, taxpayers should not be asked for the same information more than once. Additionally, taxpayers shouldn't be required to provide information twice or for no purpose. For instance, the tax calculator on the GRA website requests data on dividends from both publicly traded and privately held corporations (Ann et al., 2021). This is not important because all dividends that have been subjected to withholding tax are franked and hence tax-deductible. Furthermore, requiring a TIN for non-residents who do not have any reporting requirements, such as dividend receivers, is of little or no use to them.

2.5.3 Availability

It must always be possible to access the system. Minimum downtime is required; otherwise, taxpayers will view it as unreliable and choose the manual method (Kimathi & Zhang, 2019). This is especially critical during the time between filing and payment deadlines. Given the proclivity of most taxpayers to comply at the last minute, tax administrations must plan for and accommodate the high volume of traffic that will occur in and around key tax filing and payment deadlines, such as the 30 June deadline for corporations with a fiscal year-end date of 31 December that are taxable under the Companies Income Tax Act (Kimathi & Zhang, 2019; Night & Bananuka, 2020).

2.5.4 Accessibility

The system should collect, store, and retrieve taxpayer information in an efficient and user-friendly manner. The ability to see one's tax records online is required for every registered taxpayer (Akinadewo et al., 2019) These documents must detail all dealings carried out by the taxpayer and on his or her behalf, as well as any withholding taxes that third parties may have taken from the taxpayer's income. This should eliminate the need to submit a claim for credit for withholding tax already paid, and the lengthy verification procedure should vanish into thin air. To be accessible, the system must also be widely applicable and interoperable with other systems, requiring universal design.

2.5.5 Affordability

Specifically, it has to deal with the cost-benefit analysis, which must be performed for both the taxing authority and the taxpayers over the short, medium, and long term (Bhuasiri et al., 2016; Night & Bananuka, 2020). The initial cost of any new system will almost certainly be substantial, but the benefits should be long-lasting. If the system is properly maintained and updated regularly, rather than being abandoned after commissioning, as is the situation with many systems in Ghana that are purely symbolic rather than functional, this will be the case as well.

2.5.6 Engagement of Stakeholder

Regular polls regarding the tax system should be undertaken from time to time, including questions about the ease with which taxes can be paid and the professionalism of tax officers (Chumsombat, 2014). Additionally, taxpayers should be urged to contribute to the government's fiscal plans through the use of a computerized system.

2.5.7 Comprehensiveness and minimal human interaction

From start to finish, the system should automatically assist taxpayers with their tax compliance responsibilities. For example, filling out tax liability information online is meaningless, only to physically visit a bank to make a payment later on. Tax receipts should be generated electronically in the same way they are for taxes payments (Abbott & Bogenschneider, 2018). Every taxpayer should automatically receive a tax clearance certificate, which they can access through their online accounts and print out if they'd like if they've completed their self-assessment obligations and don't still owe any contested taxes. To avoid counterfeiting, this should have computer-readable codes (Cetin et al., 2017).

2.5.8 Support

Because there is no such thing as a perfect system everywhere, a hotline and other forms of real-time support should be available for taxpayers who may experience difficulties when navigating the system. Additionally, a comprehensive instruction booklet on how to file tax forms should be provided. Where appropriate, free tax return preparation software should be made accessible for download on the website (Devereux & Vella, 2018).

2.5.9 Compliance focus

Instead of assigning multiple numbers to one taxpayer, as is the case with the current tax identification system, which causes many taxpayers to have multiple numbers created for them at various times, the system should be able to identify each taxpayer individually (Faccia & Mosteanu, 2019). The system should be used to create profiles of taxpayers, offer a trustworthy online tax calculator, and establish connections with other government agencies like the Ghana

Customs Service, Corporate Ghana, and the Land Registry of Ghana. This will ensure that the system is connected correctly, and it should make it easier to use a risk-based audit strategy.

2.5.10 Security and a back-up plan

It is necessary to safeguard the system to protect taxpayer anonymity and reduce fraud, particularly when it comes to online payments. In the event of an assault, a comprehensive disaster recovery strategy should be in place (Awasthi & Engelschalk, 2018). The communication of online information between taxpayers and tax authorities should take place through a secure channel. For example, tax officers should refrain from utilizing Yahoo email accounts for formal work communications (Awasthi & Engelschalk, 2018).

2.5.11 Controls and Monitoring

It is necessary to acquire relevant information about consumers to analyze their usage and handle any issues they may be experiencing. In addition, as is the case with smart systems, a mechanism for data validation must be provided. For example, the amount of tax payable should not be negative or larger than the amount of turnover (Clausing et al., 2020).

2.5.12 Reporting flexibility and transparency

If the system is set up properly, it should be possible to transfer extra tax payments or refunds owed in one tax head to another tax head. If there is an excess withholding tax, it should be possible to use it to offset VAT or education tax liabilities, for instance; if not, refunds must be made as soon as possible and within 90 days of the due date, as required by law, unless otherwise stated (Sakah et al., 2017). This is critical to restoring taxpayer confidence if a taxpayer gets debited twice as a result of a computer system fault. It should also be possible for a taxpayer to file and

pay several taxes in a single payment, if necessary. It is necessary to offer detailed information and analysis on taxes collected, outstanding refunds, and credits and allowances that have not been used (Jacolin & Joseph, n.d.)

2.6 Electronic Tax Administration

Around the world, tax administrations, in collaboration with their respective governments, have worked tirelessly to develop electronic tax systems to make tax administration more efficient. This portion of the literature examines taxation and the implementation of electronic tax systems. The theories that have been utilized in previous investigations are also discussed. One the most important and contemporary e-government services is e-filing, which makes it simple for taxpayers to complete their tax returns and make payments online (Sifile et al., 2018). Electronic government, or "e-government," has long been hailed as a revolutionary improvement in the communication and exchange of goods and services between the people and the government. Its purpose is to assist the government in carrying out its everyday administrative functions and make it easier for the government to connect with external entities such as citizens and businesses through the use of information technology (Faccia & Mosteanu, 2019; Kimathi & Zhang, 2019; Night & Bananuka, 2020). On the other hand, E-Government refers to the use of technology and web-based applications to improve access to and the efficiency with which government information and services are delivered (Night & Bananuka, 2020). Its only objective is to give citizens with information and support, which includes links to renew a passport and download visa forms, among other things (Chumsombat, 2014).

Recent developments in e-Government services include the implementation of an electronic filing system for income tax returns, often known as electronic tax services, which has become a popular type of service. Taxpayers can electronically submit their tax returns to the appropriate government authorities by preparing, reporting, and paying their taxes online, which allows them to save time and money (Rao et al., 2016). Using modern technology, the electronic tax service has been designed to reduce the stress placed on taxpayers while simultaneously increasing compliance with tax-filing requirements (Bhuasiri et al., 2016). Administratively, electronic tax can provide a benefit to the government through the use of electronic government. This is regarded as a watershed moment in communication and transaction history between the government and the general public. Its purpose is to assist the government in carrying out its everyday administrative functions and make it easier for the government to connect with external entities such as citizens and businesses through the use of information technology (Oduro-Appiah et al., 2019).

The electronic tax has the potential to provide a significant administrative benefit to the government as well because the process of a tax return by citizens may now be managed more effectively thanks to the availability of technological tools to assist them. Consequently, the electronic tax service (electronic tax service) is a critical application that automates tax-related operations to increase efficiency in the assessment and collection of tax information and data. There is potential for it to improve the tax-filing experience while also lowering expenses for both taxpayers and tax-collection agencies (Night & Bananuka, 2020).

Many governments have been able to become more responsive to the requirements of their population as a result, which has resulted in less corruption, improved transparency, greater convenience, revenue growth, and/or expense reductions (Awasthi & Engelschalk, 2018). Even though the implementation of electronic tax filing has the potential to lead to the provision of better services to people at a cheaper cost, there is still a low degree of acceptability or adoption of such services in many developing nations (Ampaabeng et al., 2022). The adoption and use of e- tax services are tied to the benefits they provide (Rao et al., 2016).

2.7 Element of tax knowledge

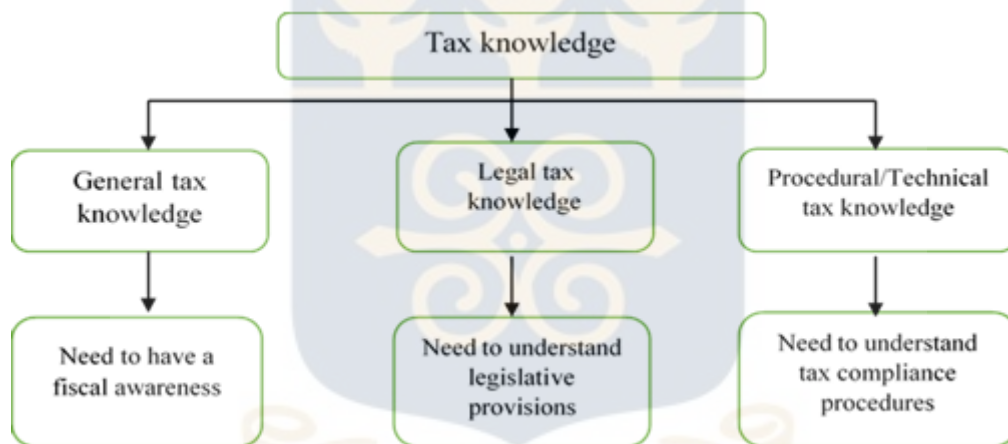


Figure 2. 1: Element of tax knowledge framework

Source: (Bornman, 2019)

According to Bornman (2019), even though tax knowledge is crucial for influencing tax compliance, there is no agreed-upon definition of the term and minimal mention of its many components. In their review of research on the impact of taxpayer knowledge on compliance levels, Bornman (2019) discovered that writers identify specific components of tax knowledge such as "knowing laws," "applying laws," "reporting tax information," and "submitting returns." They contend further that a taxpayer's capacity to comply must be improved by having a variety

of tax knowledge. According to them, tax knowledge may be divided into three categories: legal, procedural, and general. Figure 3 from their study illustrates a theoretical foundation for tax knowledge. Below, the components of tax knowledge are briefly covered.

2.7.1 Knowing the Basics of Taxes

The phrase "general tax knowledge" refers to tax awareness, which includes knowing one's financial situation and how taxes affect it, as well as the goals of government fiscal policies (the "why" of paying taxes and the morality aspect of taxes) (the "who" and "how" to pay taxes).

2.7.2 Legal and Tax Expertise

Legal expertise offers a thorough understanding of how someone is charged and has two main components: first, a comprehension of the legal concepts and legislation of the tax system (knowing that something is taxable), and second, the ability to apply legal expertise to specific situations to determine the tax effect (knowing how). According to Bornman (2019) having a "wide awareness of legal jargon" and "the aptitude to apply clear laws and regulations to properly assess one's tax liability" are both parts of having legal tax knowledge.

2.7.3 Technical/Procedural Tax Knowledge

The collection of skills and resources known as procedural knowledge are necessary for interacting with tax authorities and keeping accurate tax records. According to Bornman (2019), taxpayers need to be aware of their legal obligations and knowledgeable about tax laws.

They made it clear that procedural awareness is related to the need to comprehend the steps involved in tax enforcement, which calls for familiarity with tax forms, structures, and interactions with tax authorities, as well as the need to comprehend how to keep records that are tax-compliant.

2.8 Implementation Challenges of electronic tax Systems

The Internet phenomenon has had a profoundly transformative impact on society. Individuals and corporations now have access to a new medium of communication, creating a potential for communication and information gathering in wholly new ways. Although private sector interests were primarily responsible for the increased Internet usage, governments all over the world have now joined this revolution. Governments from all over the world have been working hard to make their services and information available online (Burlacu et al., 2021).

2.8.1 The challenge of Trust

Technology, social, institutional, philosophical, behavioral, psychological, organizational, economic, e-commerce, and management are just a few of the fields of study that have looked at trust (Qin et al., 2022). It is shown that, when there is danger or uncertainty in a relationship, trust is a crucial component. The traditional notion of trust in a specific organization or government, as well as faith in the dependability of the enabling technology, are both components of confidence in e-tax (Qin et al., 2022). Notwithstanding the governments' increasing investments in electronic services, inhabitants continue to prefer traditional ways of communication with the government over the Internet, such as phone calls or in-person visits (Cham, 2022). Therefore, an important contribution to encouraging cooperative behavior is the study of trust in e-government. The increasing degree of citizen participation in public online services is a result of the more reliable

e-government applications and services (Miao et al., 2021). Because sensitive and private information about residents is shared during online transactions, trust is the most important component of relationships in the e-taxation system (Chen et al., 2021).

A study of the US e-taxation system found considerable barriers to providing online tax services (Hung et al., 2006). The survey revealed that the percentage of governments expressing security concerns may indicate their interest in the development of online transaction systems in the USA. Citizens worry that sensitive personal and financial information is contained in national tax data has been demonstrated by an investigation of the electronic tax filing system in Japan. Any security lapse will negatively affect the public's right to privacy in their personal information as well as the credibility of the tax administration (Chatfield & Reddick, 2017).

With the expectation to disclose a lot of personal information while submitting their tax forms, taxpayers are quite sensitive. They will feel at ease using this internet service if they think the tax authorities are not opportunistic (Chatfield & Reddick, 2017). A sign of the lack of "perceived credibility" is people's concern that the computerized tax-filing system will disclose their personal tax return information to third parties without their knowledge or consent (Zhou et al., 2010). Therefore, overcoming users' perceived anxieties about disclosing personal information and their emotions of insecurity presents particular difficulties in increasing their perception of the legitimacy of electronic tax filing systems. The reliability of government information, the accessibility of the service, and other factors are related to citizens' perceptions of the service, which are strongly correlated with trust in e-government products (Colesca & Dobrica, 2008).

2.8.2 The challenges and the tax system's complexity

According to Sawyer (2016), tax complexity arises when tax law and regulation get more sophisticated. It limits the capacity of the tax authorities to distinguish between intentional evasion, sincere misunderstanding of the tax rules, and lawful tax evasion. Gambo (2014) also contended that the difficulty in comprehending various tax rules causes many taxpayers to ignore tax-related matters, which lowers electronic tax adoption. Lack of necessary ability and understanding are some of the factors that support the idea that technology is difficult (Cresswell & Sheikh, 2013). Even while businesses want to keep one step ahead of their rivals, it has been found that the biggest obstacle to implementing electronic tax systems is a lack of expertise in using tax systems and information analysis. Information technology adoption is still a key factor in IS research. Understanding these systems, their adoption, and post-adoption behavior is necessary given the increasing number of sophisticated systems being introduced within enterprises.

2.8.3 The challenge of Technological Readiness

Many developing nations are not yet ready to implement ICT systems, even though they are increasingly recognized as the foundation of any contemporary tax administration. Technological Readiness is concerned with an economy's capacity to fully integrate information and communication technologies (ICTs) into routine tasks and manufacturing procedures to increase productivity and foster innovation for competitiveness (Wu & Chen, 2014). The technological readiness pillar assesses an economy's capacity to quickly adopt new technologies to boost the productivity of its industries. The potential of the technology to increase production is unaffected by whether or not it was created within national boundaries. The potential of the technology to increase production is unaffected by whether or not it was created within national boundaries

(Pinna & Lodi, 2021).

The main idea is that the businesses running in the nation want access to cutting-edge items and blueprints as well as the capacity to understand and use them (Hussain, 2021). Technological preparedness is weaker in developing nations than in industrialized nations when we compare this measure to per capita GDP (Okafor et al., 2022). Interesting correlations exist between increasing degrees of technological readiness and exponentially larger levels of per capita GDP (Jiao & Sun, 2021). To enforce tax compliance and improve taxpayer service, tax administrations must increasingly operate on ICT platforms and take advantage of technology. Modern ICT systems allow tax authorities to routinely and automatically obtain information from banks and other entities about taxpayers' financial activities (Tsindeliani et al., 2021). ICT systems may use this data to automatically assess taxpayer risk profiles, which will help with risk management. Other technology tools, such as computerized invoicing systems, are also used by tax administrations to make sure that sales and earnings are neither overstated nor understated (Werekoh, 2022).



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2.8.4 The challenge of electronic tax adaptation

Table 2. 1: Electronic tax adaptation

Items	Challenge	Source
Adaptive challenges	<ul style="list-style-type: none"> enhancing the ability and culture of the business community to keep accurate records and accounts for tax purposes Improving computer literacy, business community use of tax accounting software, and e-filing Providing incentives for electronic payments instead of cash Attracting and maintaining parliamentary and ministerial endorsement for electronic government and electronic tax administration 	Awasthi and Engelschalk (2018)

Source: Authour's construction (2022)

2.8.5 The challenge of Institutional capacity and capability to adopt e-taxation

Table 2. 2: Institutional capacity and capability to adopt Electronic-taxation

Items	Challenge	Source
Institutional capacity and capability	<ul style="list-style-type: none"> lack of business analysts to assist with ITMS requirements formulation or business designing Lack of awareness of the tax administration's role in the growth of ICT company owners Inability to oversee a significant and difficult ITMS procurement project Unable to reap the benefits of the data resources 	Awasthi and Engelschalk (2018)

	<p>created by the adoption of ITMS and other e-tax projects in the form of increased revenues from enforcement and compliance risk profiling tools.</p> <ul style="list-style-type: none"> • Unable to recruit and maintain ICT analyst and programmer professionals. 	
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Source: Author's construction (2022)

2.8.6 The challenge of large e-tax ICT project management

Table 2. 3: Large Electronic tax ICT project management

Items	Challenge	Source
Large ICT project management challenges	<ul style="list-style-type: none"> • Long lead times (three to five years) for ITMS deployment increase project risk elements. • Scope creep • Juggling the adoption of tax administration best practices that come with a COTS ITMS system with significant BPR on crucial business activities • Handling problems with change that result in opposition to or rejection of the new ITMS • The ability to manage the ITMS investment over the long run and long-term sustainability of the ITMS 	Awasthi and Engelschalk (2018)

	system once the implementation contract is completed.	
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Source: Author's construction (2022)

2.8.7 Other challenges of adopting E-tax systems

In his study on the drawbacks of electronic filing, (GOSAYE, 2021) notes that the incapacity of electronic tax filing to offer automated online help to a taxpayer with a complicated income structure is another problem. Thus, for such taxpayers, attempting to receive assistance on a complex tax matter through a digital help desk may not be nearly as helpful as receiving assistance from a tax specialist in person. Sub-Saharan economies confront particularly challenging obstacles when developing electronic systems for filing and paying taxes (World Bank Group, 2014). These economies are also described as being in a region of the world where residents struggle with poor internet connectivity, power outages, sluggish network speeds, and system malfunctions.

According to Layton's study on information security, some additional difficulties faced by tax authorities include design, implementation, measurement, and compliance (TESFAYE, 2018). In addition to a dearth of leaders and management support; staff members are resistant to change because they are accustomed to using the manual system; and the retention of qualified IT personnel (Camngca et al., 2022). Opportunities and challenges place more emphasis on the importance of hiring and maintaining qualified IT personnel (Barykin et al., 2021). Zhao et al. (2022) indicated that usually, academic and professional institutions in developed nations teach information system development approaches that emphasize firms with relatively rich resources and other advantageous circumstances.

The electronic tax filing system is not entirely independent of human intervention, according to (Yakubu et al., 2022) study on "Perceived effects of an electronic filing system on tax compliance in a district municipality, South Africa," because taxpayers cannot perform certain functions online. They still have to travel to tax offices and stand in line for help because of this. One such example is tax registration. The taxpayer can register for taxes online, but they must thereafter visit the office to submit payments or provide supporting documentation.

2.9 Benefits of Adopting an Electronic Filing and Electronic Payment System

Electronic filing systems have several benefits that have been emphasized. Users can complete transactions with a few mouse clicks, according to a study (Azmi & Kamarulzaman, 2010) on the adoption of electronic tax filing in Malaysia. This ease of use may be a major factor in the popularity of electronic tax filing. Electronic tax filing offers taxpayers several 'conveniences' that are not available through conventional methods, including the ability to file at a time and location of their choosing, without confusion, with information searching, and online transactions. Access is permitted every day of the year. The taxpayers can also benefit from time flexibility and a decrease in calculation errors when completing their taxes electronically. The tax authorities, who are service providers, are also given advantages by electronic tax filing (Goolsbee, 2002). Because tax returns are submitted in a paperless setting, electronic tax filing reduces the burden and operating costs for the service provider. Tax return processing, storage, and handling expenses are also decreased.

Additionally, a study by Korir (2022) revealed that for taxation and tax modernization, special teams should be assigned to sensitive negotiations. Contacts between taxpayers and tax collectors should also be minimized, and tax officers' discretionary powers should be reduced. Supervisory systems should also have at least three hierarchical levels to prevent collusion, and incentive structures should be created to balance the interests of the public and the private sector.

Sani et al. (2022) researched the implementation of electronic tax filing and payment in Malaysia, the use of an Electronic tax filing system improves the quality and quantity of information that tax officers have access to, allowing them to carry out transactions more quickly and accurately. Because there are far fewer errors in electronically filed returns than in paper returns, there is less need for penalties and other punitive measures to promote compliance. Thanks to the more efficient processing that electronic returns enable, tax officers can issue assessments and reimbursements more quickly, and taxpayers are informed right away if their returns have been accepted by the tax authorities.

Electronic tax filing lowers the cost of processing returns, freeing up administrative resources for other tasks like auditing, offering customer support, and keeping track of non-compliance. The paper goes on to state that the advantages of electronic tax filings include the improvement and safety of data storage, which can be utilized to construct a risk management system for audits and enforcement. A solid file tracking system is necessary for efficient auditing, and automation speeds up and improves the quality of the information delivered to auditors. Taxpayers have several opportunities before the final submission to amend their errors or make modifications that they can save, which reduces the workload of the tax authorities checkers. Finally, by minimizing face-

to-face encounters, well-designed electronic systems can reduce corruption.

Better information availability, increased staff productivity, and enhanced service delivery are further advantages of e-filing taxes. Although strategic advantages are typically hard to assess financially, their importance cannot be disputed. One instance is business analytics, where a data warehouse may be searched to get specialized information on constituent segments for their decision-making process (Kavanagh et al., 2017).

2.10 Motives for adopting E-taxation systems by Governments

Governments believe they can benefit from online data collection in a number of ways, including reduced data input costs, improved error checking, reduced communication costs with citizens, improved application treatment consistency, increased data reuse, and reduced publication and distribution costs for government publications (Ihnatiinová, 2021).

2.11 Evolving Role of Tax Administration

Over the past ten years, the role and responsibilities of tax administration have rapidly changed across the globe. They have gone from serving as the implementer of government tax policy to serving as both the first point of contact between the public and the government and the entry point for massive financial data sets (Ihnatišinová, 2021). Due to increased reliance on tax administrations by governments to increase revenue generation and serve as the conduit between the government and the taxpayer during the implementation of support and stimulus measures, this process appears to be accelerating in response to the COVID-19 pandemic and its economic

repercussions (Ihnatišínová, 2021). The growth of tax administration is presently being driven by digital transformation, which is why tax administrations have been implementing new technologies that manage every part of the taxpayer lifecycle, including decision-making and predictive (risk) activities. The drivers and enablers supporting a future state tax administration are examined in this section.

The long-term aims of "Tax Administration 1.0" are expanded upon in "Tax Administration 3.0," which also takes into account the expanding scope. Regardless of how far along they are, the following goals guide the majority of tax administration transformation journeys as shown in Figure 2.2:

- Seamless, highly effective revenue collection through automated (streaming) tax system administration that is optimized to capture a larger tax base, which includes the use of data-based strategies that reduce tax gaps without requiring raising tax rates or introducing new instruments;
- Increased trust, data security, and transparency through the use of digital platforms to manage the primary tax functions, including tax registration, filing, payment, and dispute resolution; this will help taxpayers understand the procedures and ensure that all payments can be tracked, which will cut down on corruption;
- Reduced the time required for compliance by using digital, simplified, direct submission, processing, and evaluation;
- increased effectiveness of tax administration by rethinking the relationship with business, particularly in terms of providing compliance data, and by utilizing technology to carry out, hasten, and simplify decision-making processes, such as in assessment and audit

through the use of AI and machine learning technologies;

- promoting economic growth and other policy goals (outside of but connected to tax administration), such as serving as the link between taxpayers and government initiatives (such as when implementing economic stimulus packages) and serving as the government's data bank;
- Doing analytics utilizing improved taxpayer data (e.g., to track payment).

The development of compliance management and the establishment of a smooth data flow between the taxpayer and the tax administration are examples of internal drives. Any tax administration's core, fundamental duties still revolve around revenue collection and compliance monitoring. The transparency revolution, the accessibility of financial data, and the flow of information have all contributed to a significant transformation in the approach to compliance management during the past ten years. In essence, tax administrations get a better understanding of taxpayer activities without having to ask for information thanks to higher volumes and frequency of information flows. With more data and technology-driven analytics, tax administrations may now process taxpayer data more quickly and have a less direct touch with taxpayers.

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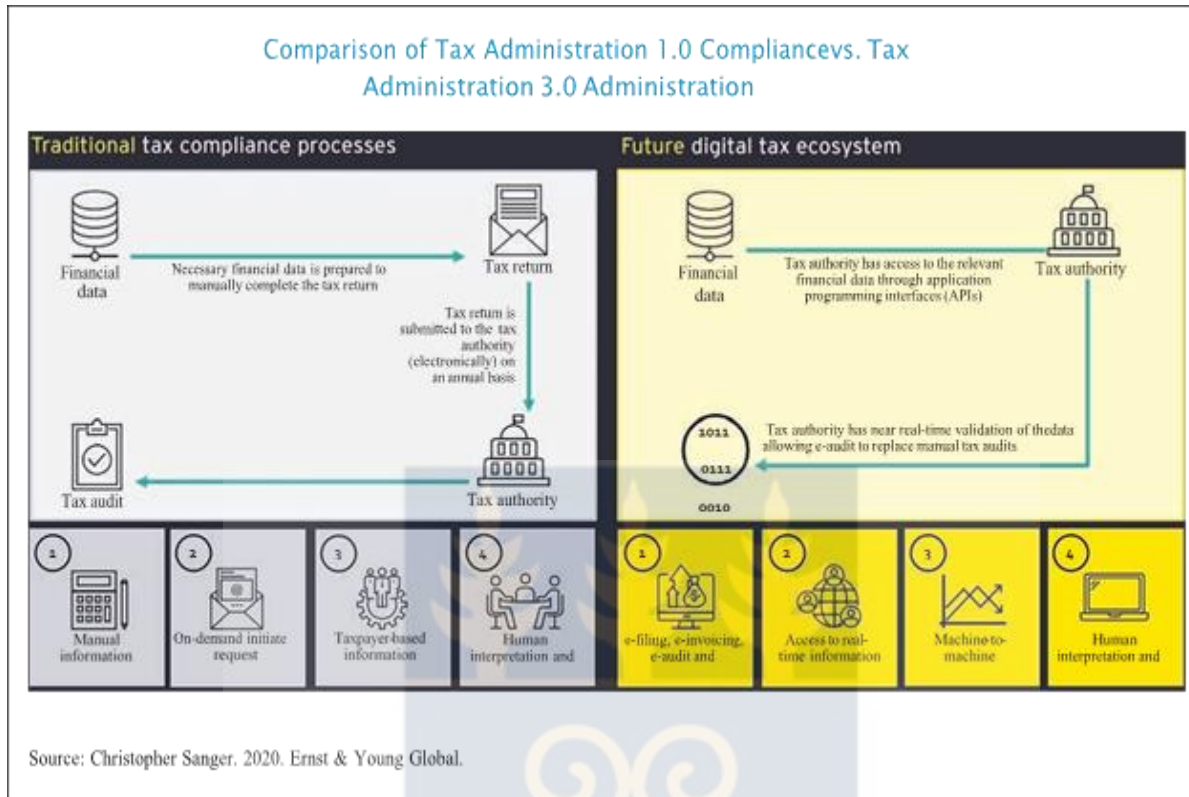


Figure 2. 2: Tax administration 1.0 and 3.0

2.12. Tax System Design

The economic climate in which governments try to raise tax revenue has changed as a result of technological advancements. Some people or transactions are simpler to tax attributable to these advancements (Truby, 2018). The usage of different electronic payment systems helps make more transactions transition from the informal to the formal sector, especially in developing nations (Kumari & Khanna, 2017). Technology provides tax authorities with additional resources to follow the movements of people and products. To enhance tax compliance for people with investments and activities outside the country, it should also expand options and lower costs for collaboration with tax administrators in other nations.

However, technology has made it more difficult to tax some people or transactions. For instance, tracking things in digital form is now considerably more difficult for tax authorities than tracking goods that are physically transferred across or between nations. Lawyers, accountants, and management consultants from other countries can offer their services with little to no physical presence there. Thanks to developments in the financial services sector, domestic investors now have easy online access to overseas institutions and securities. It is becoming more difficult for any one country to tax revenue from mobile capital due to the globalization of financial markets.

Technology may also affect how government personnel is motivated to create and manage tax systems. A model developed by Hettich and Winer (1999) suggests that variations in administrative expenses might have an impact on both the size of the public sector and the choice of the tax structure. Costs may alter as a result of administrative technology advancements because the structure of the economy has changed as a result of technology. In order to raise money to fund government activities, tax regimes use a variety of various tax instruments. In their study, (Bird & Zolt, 2008) look at how emerging nations rely less on income tax and much more on trade taxes, excise taxes, and general consumption taxes. Numerous variables, such as the features of the economy, the capacity of taxpayers to comprehend, adhere to, or dodge tax rules, and the capacity of taxing authorities to administer the tax laws, all have an impact on the relative usage of various tax tools. Additionally, it is partially explained by the disparities in the prices of various tax technologies between rich and developing nations.

Technology may alter the way that the tax system is calculated. First, it has made it possible for tax authorities to carry out their duties more skillfully, which would shift the balance of policies

in favor of taxes that can now be managed more skilfully. Second, the structure of a tax system is influenced by the features of an economy. The traditional developing country profile includes, as was previously mentioned, a sizable subsistence agricultural sector, a sizeable small service sector characterized by cash transactions, small retail businesses, and a relative lack of large employers (aside from the government and a few local and foreign companies). Technology may alter the composition and size of this tax base.

For instance, technological advancements may lower the bar for effective taxes, regardless of the size of a transaction or a corporation. Because taxpayers keep better books and records and tax officials are better able to witness and monitor transactions, developed countries are more successful at taxing consumption and income than developing ones. In theory, the size of the transaction or business that authorities may witness has been substantially decreased with the advent of electronic currency and smart cash registers. The ability of tax administrations to monitor transactions will increase as these technologies proliferate to service the growing middle class in many emerging nations.

Technology affects the relative income that may be collected by various taxes by altering the relative costs of compliance and enforcement as well as compliance rates. The technology could also make it possible for lawmakers to expand the reach of some taxes by changing thresholds. Additionally, it may enable changes to some tax instruments' regressivity or progressivity, which might make them more substantial revenue generators. More than that, new technology may make it more feasible to collect income taxes or value-added taxes at subnational levels of government by reducing the costs of economies of scale in tax administration. One strategy to improve the

efficiency of government expenditure may be to decentralize significant revenue sources. Technology may also make it easier to achieve this goal if better benefit taxation opportunities were made possible by better quantification of the benefits supplied to certain people or groups by government spending. The construction of social capital in developing nations may benefit greatly from the tax system's ability to link income and expenditures in such obvious and significant ways (Bräutigam et al., 2008).

2.13 Principles of tax policy

Taxes are primarily used to raise money to support public goods like law and order and public infrastructure at a time when many governments are struggling with declining tax revenue, rising spending, and resulting budgetary constraints. Several broad tax policy concerns have typically driven the development of tax systems, presuming a specific amount of income is required, which is determined by the nation's larger economic and fiscal policies. They include fairness and effectiveness as well as neutrality, effectiveness, certainty, and simplicity (Faccia & Mosteanu, 2019).

2.13.1 Neutrality

The goal of taxation should be equity and impartiality across all business activity types. A neutral tax would increase efficiency by ensuring that the best possible allocation of the means of production is made. There will be a distortion and a corresponding deadweight loss when price changes result in supply and demand changes that are different from those that would occur in the absence of tax. To maximize revenue while minimizing bias in favor of or against any particular economic decision, taxation must be neutral in this sense (Cockfield, 2013). This suggests that the

same taxation principles should be applied to all types of companies, despite taking into account some factors that might otherwise compromise an equal and impartial application of those principles.

2.13.2 Efficiency

Administrative costs incurred by the government should be kept to a minimum, as should business compliance costs (OECD, 2014).

2.13.3 Assurance and Brevity

Tax laws ought to be clear and simple to understand to guarantee that taxpayers are aware of their status. A simple tax system makes it easier for both individuals and businesses to understand their obligations and rights. Therefore, businesses are more likely to make wise decisions and put planned policy decisions into action (Cockfield, 2013). Complexity also encourages aggressive tax planning, which could lead to financial deadweight losses.

2.13.4 Efficiency and equity

Taxes should be collected at the right time and in the right amount to reduce double taxation and unintentional non-taxation. It's also critical to lessen the likelihood of escape and avoidance. Discussions in the Technical Advisory Groups (TAGs) in the past noted that if there is a class of taxpayers who are nominally liable to a tax but are never required to pay the tax due to inability to enforce it, the general public of taxpaying citizens may perceive the tax as unjust and ineffective (Cockfield, 2013). As a result, policymakers think carefully about how to enforce tax laws. Since it has an impact on how taxes are administered and collected, enforceability is also crucial to

preserving the efficiency of the tax system.

2.13.5 Flexibility

To keep up with changes in business and industry, tax systems must be flexible and dynamic. A tax system must be flexible and dynamic enough to meet both the present needs and future demands from governments for revenue. The structural components of the system should be resilient in a changing policy context while also being dynamic and flexible enough to allow governments to respond as necessary to keep up with technological and commercial advancements because future developments will frequently be unpredictable (OECD, 2013).

2.14 Conceptual Approaches to Electronic tax systems adoption and use

Previous research has not considered the performance of technologies such as the e- Tax system, and various theories have gone unexplored. To study the connection between attitudes and actions, Fishbein & Ajzen (1975) created the theory of reasoned action (TRA). It was demonstrated by the TRA model that a people's actual behavior may be strongly predicted by his or her intention to conduct a particular behavior. In numerous fields like marketing, sociology, and information technology, this method has been used to predict distinct types of behavior in the future (Agarwal & Karahanna, 2000). Subjective norms and attitudes toward behavior were two constructs included in this approach (Ajzen, 2012). Even though this theory has been used to describe the acceptance of technology in numerous research, it is less useful when the individual does not make his or her own decision (Ajzen, 2012). Davis (1989) also developed the technology acceptance model (TAM). The technology acceptance model is a theory that explains how consumers come to accept and use new technology when it comes to information systems. Even though many studies have

used the Technology Adoption Model to study technology acceptance (Davis, 1989; Venkatesh et al., 2003; Wang et al., 2015). The TAM model has extended the TRA model to another context: the information system environment. In its original form, the TAM model was intended to characterize influencing variables on computer acceptability; however, it has since been modified to account for behavior across a wider variety of technologies and different types of users. In contrast to the TRA model, which included two dimensions as determinants of intentions, the TAM model did not include subjective norms as a factor in the determination of intentions. A further distinction was that the TAM model was developed specifically for computer use, as opposed to the TRA model, which was considered general and designed to describe almost all human behavior (Ajzen & Fishbein, 1975), whereas the TRA model was developed to describe almost all human behavior (Ajzen & Fishbein, 1975). The TAM model explained individual behavior toward technology use, which relied on perceived usefulness and ease of use to explain individual behavior. This idea asserted that perceived ease of use influenced perceived usefulness and that real behavior was controlled by the intention to utilize a product or service. Other research has also used the fit-viability theory (FVT) or the fit-viability model (FVM). The FVT's responsibility is to understand the concepts that influence the effectiveness of technology adoption in an organization (Chen et al., 2021).

2.13.6 Research: Issues and Evidence

Table 2. 4: Research: Issues and Evidence

Author(s)	Study focus	Underpinning theory and framework	Research method/ setting	Findings	Relevant gaps for future research

Liang and Lu (2013)	The purpose of this paper is to investigate the factors that influence the willingness of the public to adopt online tax filing services	Innovation diffusion theory, social cognitive theory and contingency theory	Quantitative study. An online survey was conducted to which 400 valid questionnaires were responded. Taiwan	The results demonstrate that the perceived attributes of trialability and observability significantly influence the adoption intention of late adopters	A study that details a more convenient and user-friendly design for online tax-filing processes
Soneka and Phiri (2019)	Determine the factors that influence the extent of e-tax system adoption in Zambia	Technology Acceptance Model	Quantitative study. A total of 100 semi-structured survey questionnaires were delivered Zambia	revealed that Zambia's e-tax system is beneficial, simple to use, and secure	Studies on how to create more awareness and taxpayer education
Ann et al. (2021)	Characteristics that influence the acceptance and use of electronic taxation services among medium-sized taxpayers	1. Theory of Reasoned Action (TRA) 2. Theory of Planned Behavior (TPB) 3. Technology Acceptance Model (TAM) 4. Unified Theory of Acceptance and Use of Technology (UTAUT)	Quantitative methodology. Phnom Penh, Cambodia	Anxiety, performance expectancy, and effort expectancy are the factors that most influence a person's behavioral intention	Future research should incorporate constructs such as perceived risk, attitude or personal innovativeness.
Titumir (2021b)	Study citizens' intentions to utilize the e-Tax filing system	Technology Acceptance Model (TAM)	Quantitative methodology cross-sectional	Perceived usefulness and reported simplicity of use of the e-Tax system were	Study on other factors that stop citizens from using e-tax system

			research design Pakistan	found to have a statistically significant beneficial impact on the intention to utilize the e-Tax system	
Kimea (2019)	Analysis of Taxpayers' Intention to Use Tax E-Filing System in Tanzania: Controlling for Self-Selection Based Endogeneity	Technology Acceptance Model (TAM)	Quantitative methodology Tanzania	Risk, social influence and Performance expectancy has significant effects on the intention to use e-filing	More constructs that make e-tax easier to use
Hassan et al. (2021)	Voluntary tax compliance behavior of individual taxpayers in Pakistan	Theory of attribution, equity theory, expected utility theory, and social exchange theory	Quantitative methodology Pakistan	tax compliance simplicity has a larger impact on tax filing than perception about Government Spending and tax morale	Future research should consider conducting in-depth interviews to complement surveys, to provide a deeper understanding and explanation of the relationship between the variables
Carter et al. (2011)	Electronic Tax Filing: The Impact of Reputation and Security on Adoption	Unified theory of acceptance and use of technology (UTAUT)	Quantitative methodology N/A	Reputation, credit and perceived security control have a significant impact on risk perception.	More studies on e-file systems, and their effects on adoption

Azmi and Bee (2010)	The Acceptance of the e-Filing System by Malaysian Taxpayers: A Simplified Model	Technology Acceptance Model (TAM)	Quantitative methodology Malaysian	Reducing the taxpayers' perception of risk leads them to adopt the system.	A further study exploring further the antecedents of perceived risk
Masunga et al. (2020)	An investigation into the quality of the e-tax system in Tanzania and its impact on the tax compliance behavior	Information System Success Model	Quantitative methodology Tanzania	Quality of service and information had an impact on establishing excitement to adopt and use the e-tax system	Further study of the quality of the system on tax compliance behavior
Sifile et al. (2018)	Effect of e-tax filing on tax compliance: A case of clients in Harare, Zimbabwe. African	Ability to Pay' theory Benefit theory The Stakeholder theory	A descriptive research design is adopted in this study Zimbabwe	Customers had a favorable attitude toward electronic filing,	study recommended more research on the impact of e-filing on payment and e-filing on tax evasion and avoidance.
(Chen (2010)	Impact of quality antecedents on taxpayer satisfaction with online tax-filing systems—An empirical study	N/A	Quantitative methodology Taiwan	Taxpayers satisfaction quality records affect the online filling strongly.	Further studies will be needed on the infrastructure of the tax
Lymer et al. (2012)	Developments in tax e-filing: practical views from the coalface	Technology Adoption Life Cycle	Mixed methodology UK	The results confirm that small/medium-sized tax agent firms are more	Further studies on ICT integrity and control of

				likely to be technology enthusiasts/early adopters of e-filing for their clients.	complex tax cases
Adegbe et al. (2022)	An Empirical Investigation into the Relationship between Electronic Tax Management System and Tax Revenue Collection Efficiency in Selected States in South West, Nigeria	Technology Acceptance Model (TAM) Theory of Planned Behaviour (TPB)	Quantitative methodology States in South West, Nigeria	The ease of filing tax returns has a substantial beneficial impact thanks to the computerized tax administration system.	Studies must be focused on enhancing strategies to provide technical support always
Kimathi and Zhang (2019)	E-tax Filing and payment system using variables such as system quality and perceive security	Technology Acceptance Model Theory of Planned Behaviour	Quantitative methodology Tanzania	Perceived usefulness and perceived ease of use Significantly influence the users' attitude towards accepting ETFPS	
Sritharan and Salawati, 2019)	Relationship between individual factors and income Tax compliance	N/A	Quantitative methodology Malaysia	Individual financial circumstances, social networks, political influence, religious convictions, and cultural influences all favor tax	Studies on tax knowledge And compliance

				compliance behavior.	
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Source: Authour’s construction (2022)

From Table 2.4 various empirical studies are reviewed. An investigation by Soneka and Phiri (2019) to determine the factors that influence the extent of electronic tax system adoption in Zambia focused on the usage of an electronic tax system by the Zambian domestic taxes division to collect tax revenue. It was done in rural Zambia, using the Technology Acceptance Model to guide his research (TAM). The sample size was determined by selecting a random sample of taxpayers who were submitting their tax returns through the Zambia Revenue Authority’s Solwezi internet office. A total of 100 semi-structured survey questionnaires were delivered, and all of them received a perfect answer. Using descriptive statistics, the data collected was analyzed, and the findings revealed that Zambia’s electronic tax system is beneficial, simple to use, and secure. According to the statistics, the vast majority of taxpayers are completing their forms and making their tax payments online. However, some taxpayers do not believe that electronic tax is useful, simple to use, and secure. As a result, more awareness and taxpayer education must continue to be promoted to bring everyone on board (Soneka & Phiri, 2019).

In a different study, the researchers looked for traits among medium-sized taxpayers in Phnom Penh, Cambodia, that might affect their acceptance and use of electronic taxation services. A multi-stage sampling procedure was used in the study, in accordance with quantitative methodology, to select a sample size over the course of two or more stages (Ann et al., 2021). This study was supported by the Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB),

Theory of Reasoned Action (TRA), and Unified Theory of Acceptance and Use of Technology (UTAUT). The stratified random sampling method was used for the first stage of sampling, and the purposive sampling method was used for the second stage. The stratified random sample method was utilized initially, followed by the purposive sampling method in this investigation. The information was gathered from 450 medium taxpayers who had used electronic tax services at three tax offices in Phnom Penh and were asked to complete a survey. The confirmatory factor analysis (CFA) and the structural equation model (SEM) were used in this work to assess the accuracy, reliability, and influence of various factors on the model's accuracy and reliability. The main finding of the study was that behavioral intention has a statistically significant effect on how often medium taxpayers in Phnom Penh, Cambodia, use electronic tax services. The results also showed that a person's behavioral intention is significantly influenced by performance expectancy, effort expectancy, social influence, and anxiety. The elements that have the greatest impact on a person's behavioral intention are anxiety, performance expectations, and effort expectations. Contrarily, favorable circumstances, faith in the government, and belief in the internet have little impact on a person's behavioral intention (Ann et al., 2021).

A study by Titumir (2021a) in Pakistan looked at the probable antecedents from the standpoint of service customers employing the Technology Acceptance Model (TAM). To empirically validate our presented hypotheses, we conducted a cross-sectional research design and collected 257 responses, which were then analyzed using the structural equation model (SEM). A statistically significant positive association was discovered between citizens' self-support factors and reported ease of use of the electronic tax system, but no such relationship was observed between perceived usefulness and self-support elements. Additionally, perceived usefulness and reported simplicity

of use of the electronic tax system were found to have a statistically significant beneficial impact on the intention to utilize the electronic tax system. Previous research has focused a great deal on the significance of organizational elements in the adoption of electronic tax. There is no literature to be found on the topic of categorizing these components into the organizational and service customers' associated factors. Because the self-support elements have been empirically validated, the study offers insight into the importance of service users' associated factors in adopting an electronic tax system. Several findings of the study suggest that active participation on the part of both the government and citizens is equally crucial to the effectiveness of the electronic tax filing system (Titumir, 2021a).

An analysis of the effectiveness of Tanzania's electronic tax system and how it affects the tax-compliance behavior of significant taxpayers was carried out (Masunga et al., 2020). 313 significant taxpayers from three different regions of Tanzania—Dares Salaam, Mwanza, and Arusha—provided the data that was used to compile this report. In the study, the constructs of service quality, system quality, information quality, user satisfaction, behavioral intention, and tax compliance behavior were utilized from the Information System Success Model (IS model) (Kimea, 2019). User satisfaction, system quality, information quality, and service quality were all assessed using the IS model (actual behavior). The software's Partial Least Square Structural Equation Modeling (PLS-SEM) with Smart PLS was used to evaluate the latent variables and their indicators. The results showed that the most significant behavioral influence on a person's tax compliance behavior was the desire to use the electronic tax system. Because of this, the quality of the information and service had a significant impact on creating enthusiasm for adopting and using the electronic tax system, which increased taxpayer compliance with the law. However, the

quality of the system has not been found to have a substantial impact on tax compliance behavior (Kimathi & Zhang, 2019).

Despite the existence of electronic tax administration systems in Zimbabwe, Sifile et al(2018) .'s study sought to ascertain whether the underutilization of electronic tax filing systems in tax agencies affected taxpayer compliance with tax obligations. Ability to Pay' theory, Benefit theory and the Stakeholder theory underpinned their study. The majority of the information was gathered using a questionnaire. The data were analyzed using SPSS Version 20 as well as Microsoft Excel. According to the findings of the study, the electronic filing system has a real impact on tax compliance. Customers had a favorable attitude towards electronic filing, according to the findings of the survey. The simplicity of doing business has also been considerably improved as a result of electronic filing. The results of the correlation research demonstrated a positive association (0.533) between appropriately calculating tax obligations and the ease with which businesses can operate. The study suggests further research on the impact of e-filing on payment as well as the impact of e-filing on tax evasion and avoidance because the study was primarily targeted at large clients and concentrated on a single component of compliance, filing, with little attention paid to other components of compliance (Sifile et al., 2018).

2.14 Research Gaps and Future Research Directions

There are a few gaps that need to be filled, according to the literature review for this study. First off, despite Ghana being a recent adopter of the technology, the majority of the research that has been done on e-taxation has focused on other countries and ignored it. As a result, there is a scarcity of research on technology adoption and tax revenue generation in Ghana. Furthermore, past

research has generally focused on the manual taxation system. As a consequence, future research may focus on the characteristics that create the underpinnings of e-taxation implementation in Ghana. Furthermore, a study of the literature on technology adoption and tax revenue generation indicated that little research has been undertaken in developing countries, particularly in Sub-Saharan Africa. This includes the studies of (Adegbe et al., 2022; Kimathi & Zhang, 2019; Kimea, 2019; Sifile et al., 2018) all of which have advocated for greater research to be done in other areas in Africa.

Finally, the literature analysis found that much e-taxation research has not relied on fit-viability theories, implying that future studies should explore depending on additional theories that adequately explain determinants for adoption, such as the one employed in this study (Fit-Viability theory).

2.5 Chapter Summary

In the literature review section, the researcher began by reviewing some essential concepts particular to the topic under consideration, including the electronic tax system, and elements of a good technology-driven tax system. Next, a theoretical review is done followed by the empirical literature. Finally, a chapter summary is provided. In the next chapter, the theoretical basis and hypothesis of the research are discussed in detail.

CHAPTER THREE

THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

3.1 Chapter Overview

In this chapter, the theoretical basis and hypothesis development are discussed. The research hypotheses are then outlined. The chapter is in four sections. The chapter is introduced in section one. The second section discusses the theory used in the research. Section three captures the conceptual framework and the fourth section discussed the outlined hypotheses for the study. Lastly, a summary of the theories and hypotheses is contained in the fifth section.

3.2 Theoretical Basis

In investigating the nexus between fit-viability, and tax revenue generation of the Ghanaian electronic tax system in an era where technology is increasingly being used for optimization purposes, the research hypothesis needs to be well grounded in theory (Algarni, 2016). This section elaborates on the relevant theoretical foundations. Specifically, the fit-viability theory is the premise on which the investigations in the study are based.

3.2.1 The Fit-Viability Theory

A study on online portfolio management led to the development of the fit-viability theory. One of the main objectives of the project was to enable investors to manage a portfolio of internet businesses that satisfied the fit and viability business criteria. Tjan (2001) suggested using two factors when evaluating internet projects to ascertain whether technology is being used effectively or not. Fit and viability are the first two criteria. The degree to which new network applications match an organization's core competencies, organizational structure, values, and culture is referred

to as fit (Tjan, 2001). Viability measures, among other things, the need for human resources and capital expenditures, as well as the potential for value creation by new network applications. Fit and viability are the two axes of a square matrix that results from the combination of these two dimensions. For use with mobile commerce applications, Tjan's (2001) strategic matrix was modified, and (Liang et al., 2007) created a fit-viability framework that combines the theory of task/technology fit with the overarching idea of the organizational influence of information technology.

Their framework defines viability as the degree to which the organizational environment is prepared for the application, taking into account, among other things, the user readiness to use mobile technology, the maturity of the organizational infrastructure to support it, and the economic costs and benefits. The fit is a measurement of how well a task's abilities correspond to its requirements for tasks that are sensitive to geography or require rapid response times, such as those for a particular service, given that the primary characteristics of mobile technology are mobility and reachability. In addition, the Task-Technology Fit (TTF) model developed by Goodhue and Thompson (1995) was modified by Tjan (2001) and Liang et al. (2007) to include a suited dimension to assess why a particular technology was appropriate for a task. For assessing the effectiveness, acceptability, and deployment of new technology, the Fit-Viability Theory is superior to the other TAM versions, claim Tripathi and Jigeesh (2015). Mohammed et al. (2017) added that the Fit-Viability Theory is appropriate for assessing the level of technological fit as well as the value of the technology in terms of its application and performance while maintaining environmental elements. In addition, Tripathi and Jigeesh (2015) noted that research studies that attempt to examine the technical as well as organizational elements that impact the adoption and

difficulties of a technology might adopt the Fit-Viability Theory. Following the earlier literature regarding the fit-viability theory and its applications in research, the current study applies the theory with respect to electronic tax in Ghana and its benefits in improving revenue generation.

3.2.2 Task-Technology Fit Dimension of the Fit-Viability Theory

When it comes to the fit dimension, there is a theoretical foundation in the TTF approach, which asserts that a greater match between technical characteristics, task needs, and individual skills would result in improved performance (Abelsen et al., 2021). Instead of relying on subjective judgments of fit as in the TTF model, the FVM model relies on an objective assessment of the match between task and technology that takes no account of the participant's ability. In other words, the fit is determined only by the nature of the technology and the requirements of the task at hand. Individual aspects are taken into consideration when determining the viability of an organization. When a modern tech is being employed, the Fit, which is the extent to which the technology adopted equals the task characteristics of the job that has to be done, produces an advantageous effect in accomplishing the task of the individual (Goodhue & Thompson, 1995).

How well the task requirements and the technology are matched is evaluated by the task-technology fit dimension (Larosiliere & Carter, 2016). Task-technology fit, according to Goodhue and Thompson (1995), is the interaction between technological functionality, individual skill requirements, and task requirements. The authors also suggested that the construct (task-technology fit) should be known as "task-individual-technology fit" since, in their opinion, it best captures the construct's real character (Goodhue & Thompson, 1995). According to Mohammed et al. (2017) study on the effects of task features on work design, task characteristics increase job

satisfaction, and intrinsic motivation at work, and turnover is decreased. The five key characteristics of a job or task, according to Hackman and Oldham (1975), are skill diversity, task identity, task importance, autonomy, and feedback. These fundamental characteristics have been shown by Wu and Chen (2014) to be significant task characteristics. According to Putra et al. (2017), research on intrinsic motivation has indirectly addressed task features in previous works. Malone and Lepper, (2021) also noted that the work presents a variety of problems and unclear consequences that need to be researched.

3.2.3 Technology Dimension of the Fit-Viability Theory

The ICT necessary to carry out a certain task is referred to as the technology dimension of fit. The task and technological features must be matched to meet the Fit objective (Mohammed et al., 2017; Khan et al., 2018; Sinha et al., 2019). Technology Characteristics evaluate technological aspects that affect the adoption of tax technology. These technological characteristic factors, according to studies, include relative advantage, compatibility, complexity, trialability, and security (Poncin et al., 2017; Rahi et al., 2021; Vanduhe et al., 2020). Although taxation is attractive to many governments, it is impractical without the proper technical framework in the system for tax purposes.

3.2.4 Viability Dimension

Viability looks at the factors that affect an organization's adoption of information technology (Azad & Amin, 2017; Chen et al., 2021; Wu & Chen, 2014; Yoo & Kim, 2019). Economic reasons, IT infrastructure accessibility, and organizational issues all play a role in the FVT. The usefulness of economics, IT infrastructure, and organizational aspects in evaluating the feasibility of a new

Information Technology is confirmed as very relevant (Yoo & Kim, 2019). In a similar vein, Egala and Afful-Dadzi (2022) found that in their study on the adoption of social networking software for group decision-making, that, the viability constructs of the FVT are effective in evaluating how viable an IT system having such factors (economic, IT infrastructure, and organization) affect viability. As a result, Viability is defined by (Yoo & Kim, 2019) as the extent to which the chosen system affects the organizational political, social, economic, environmental, and technological infrastructure.

The reliability of economic, IT infrastructure and organizational factors have increased and improved as a result of empirical studies on the adoption of IT in various sectors (Larosiliere & Carter, 2016). These factors are appropriate factors that affect the viability of IT systems. Economic reasons evaluate the economic situations of institutions or individuals since this might impact the type and extent of investment made in IT advances (Chandra & Kumar, 2018). Furthermore, Chandra and Kumar (2018) stated that, an organization's financial strength impacts its information technology adoption, and that an institution's strong financial well-being allows them to invest in IT system improvements. The first factor to consider when determining the readiness of an IT application is its economic feasibility, which can be broken down into two categories. Firstly, it is necessary to evaluate the cost-benefit of a specific IT project to determine whether the investment will generate sufficient financial or intangible returns; secondly, it is necessary to determine whether IT will reduce transaction costs and, as a result, provide the organization with competitive advantages. When it comes to investing, the cost-benefit analysis is straightforward; several methodologies, such as calculating the net present value of a project, have been offered in various studies (Chandra & Kumar, 2018). Lowering transaction costs can boost a

customer's willingness to employ a specific technological solution from the perspective of transaction costs. As a result of the other research, it can be determined that economic well-being affects the IT system they adopt and employ for their organization's operations, as well as the amount of investment they are prepared to make for present and future applications (Chandra & Kumar, 2018).

The organizational factors evaluate an institution's IT readiness and advanced characteristics (Larosiliere & Carter, 2016). As a result, a complete evaluation of the needs that the IT system addresses inside the institution must be done and confirmed. Furthermore, a review of the implementing organization's structures is necessary to allocate duties for employees in management positions and assure the initiative's sustainability (Chatfield & Reddick, 2017).

The technological aspect is the final component of the viability dimension (the IT infrastructure). This metric assesses the implementing organization's ICT infrastructure. Many empirical studies have shown that the level of ICT progress in a business has a beneficial impact on the IT tools and services they utilize (Krishnan et al., 2017; Larosiliere & Carter, 2016). The constructs of the FVT are detailed in Figure 3.1.

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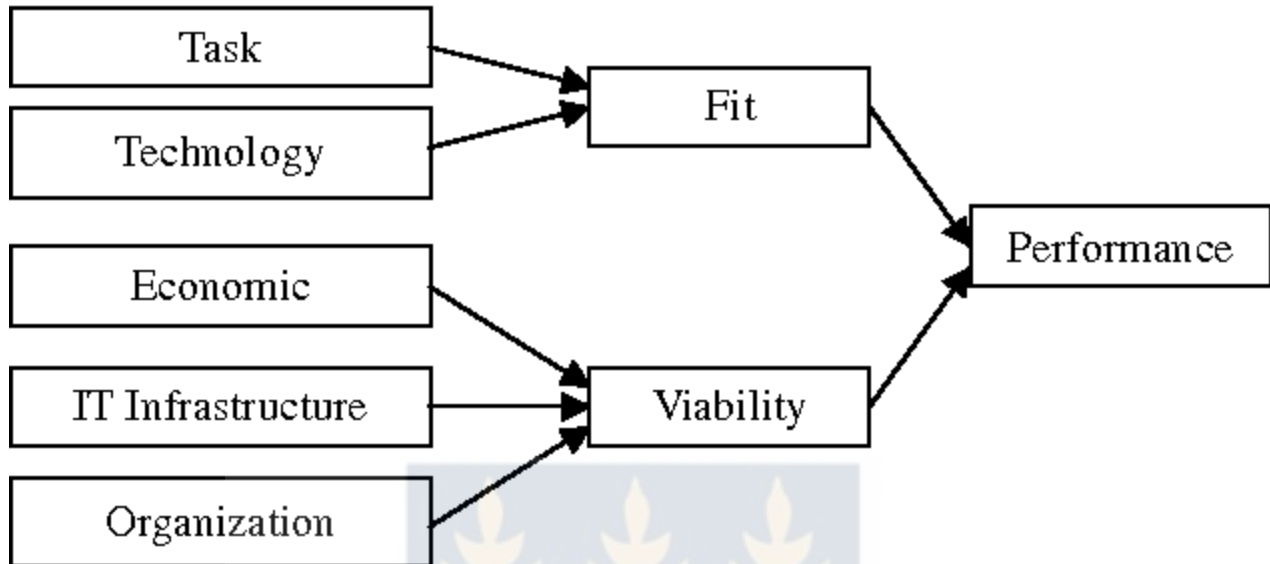


Figure 3. 1: Fit-Viability Model

Source: Liang, et al., (2007)

3.3 Justification for the choice of the theory for this Study

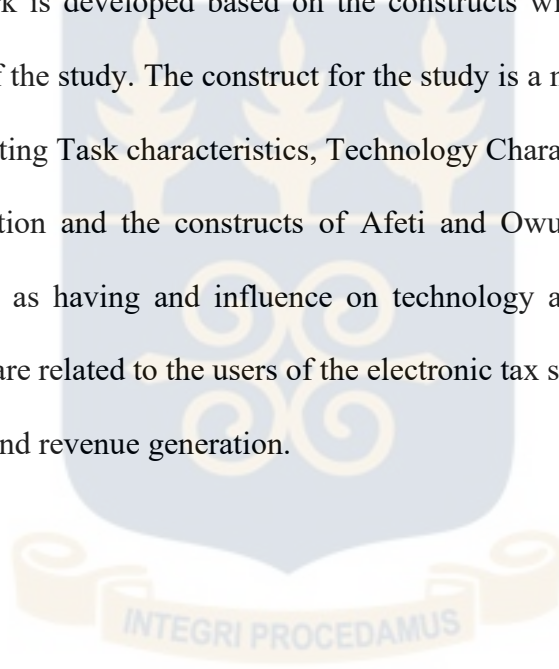
This study has adopted the Fit-viability theory because its construct offers a reliable and proven to measure guide or tools to help in determining the factors that influence technology adoption and tax revenue generation in Ghana. The theory's "task and technology fit" component helps in determining whether or not technology adoption is suitable for the task of revenue generation from tax in Ghana.

The fit-viability hypothesis makes assumptions about how tasks and digital technology are related to one another. FVT is a variance theory that describes how five factors Task, Technology, Economic, IT infrastructure and organization interact at a particular time to ensure results in a project being undertaken (Liang & Wei, 2004). The task-technology fit of various information technology applications has been empirically established using the FVT theory in several scientific

research (Larosiliere & Carter, 2016; Werekoh, 2022). The idea has also helped to prove the link between the adoption of new information technology at the corporate and systemic levels (Gonzalez et al., 2020). This study has modified the theory to match the objectives of the study, in contrast to other studies that have utilized the theory to determine and prove performance.

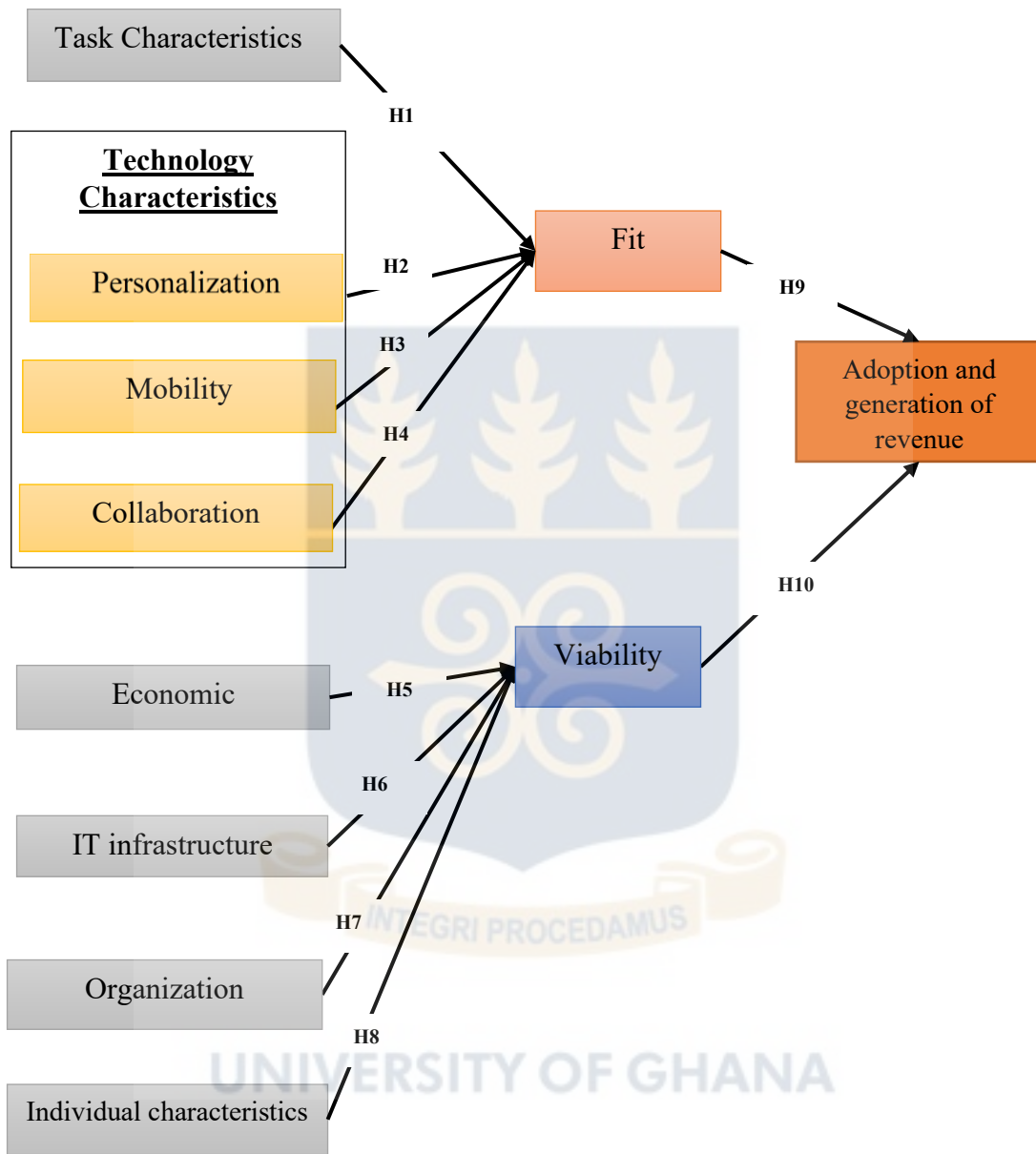
3.4 Conceptual Framework and Hypotheses Development

The conceptual framework is developed based on the constructs within the FVT to ensure an adequate understanding of the study. The construct for the study is a merge of conceptualizations of (Liang et al. (2007) stating Task characteristics, Technology Characteristics, IT Infrastructure, Economics and Organisation and the constructs of Afeti and Owusu (2022) who introduced Individual Characteristics as having an influence on technology adoption. In this study, the individual characteristics are related to the users of the electronic tax systems and how their usage contributes to utilization and revenue generation.



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Figure 3. 2: Conceptual framework



Source: Authors' construction (2022)

3.4.1 Task-fit and electronic tax adoption

Task characteristics in relation to electronic tax implementation in an economy comprise of all activities of the tax institutions in the accessibility, simplicity and inclusiveness, and completeness and limited human interface in every stage of operation to improve performance (Bag et al., 2020). For instance, the task characteristics in the case of e- Tax in the first place assess if and how the accessibility to the online platforms in the tax institutions influences electronic tax implementation in the institution and revenue generation. According to Bramantyo (2020), the taxation system should include various tasks such as e-registration, e-filing, e-SPT, e-Billing, and e-Facture. These tasks inform the operations of the system and enhance usage. The task characteristic approach to task design evaluation focuses on the aspects of jobs that make a job interesting and, consequently, more motivating. Automation, resource sharing, multitenancy, internal expertise, and remote implementation are task characteristics associated with cloud computing adoption and usage (Tripathi & Jigeesh, 2015).

H1: Task Characteristics significantly influence the adoption of E-taxation technology

3.4.2 Technology fit and electronic tax adoption (Personalisation)

Technology characteristics involve the use of information communication technology (ICT) to make the filing of tax returns and other related activities as simplistic and inclusive as possible, targeted at improving performance in relation to electronic tax technology and revenue generation. The literature supports the claim that greater usage of the technology and improved performance result from the task and technology characteristics fitting together (Isaac et al., 2019). Goodhue & Thompson (1995) did not operationalize the technological quality element. Instead, they

emphasized how participants in their study had to choose up to five of the 20 systems that they used. As a result, their study's "technology variable" was fixed (Isaac et al., 2019). Baas (2010) exploited three technology characteristics that help adoption which is adopted in this study. They include personalization, mobility and collaboration.

The practice of changing a system's functionality, user interface, informational content, or uniqueness to increase personal relevance is referred to as personalization (Blom, 2000). The idea has also been referred to as configurability or tailor ability (Cuevas & Scheer, 2010). The user often initiates customization by modifying technology to suit his or her own needs. Three reasons for modifying ICT tools are listed by Blom (2000), including the capacity to (quickly) gather information (e.g., bookmarks). Second, customized tools take into consideration individual differences, such as the fact that people prefer to do the same tasks in a variety of ways (e.g., one or two mouse clicks for opening a document). Third, by automating routine tasks, personalization supports work objectives (e.g., through macros).

H2. Electronic tax Technology with higher perceived levels of personalization characteristics will result in increased levels of task-technology fit and usage

3.4.3 Mobility

Mobility is the degree to which ICT technologies allow people to work from anywhere and at any time. People were able to function outside of the wired information system architecture thanks to portable devices like mobile phones, PDAs, and laptop computers (Gebauer, 2008). The fast expansion of teleworkers and their usage of information and communication technology (ICT)

tools was made possible by mobile devices (Gareis, 2002; Haddon & Brynin, 2005). An individual who works mostly from home or an office (a "fixed site worker"), primarily in the field (a "mobile worker"), or both in the office and the field ("flexiworker") is referred to as a "teleworker" (Garrett & Danziger, 2007). The usage of mobile devices and ICT solutions that allow workers to be mobile (for example, externally accessible data repositories) promotes worker flexibility, autonomy, and independence.

H3. Electronic tax Technology with higher perceived levels of mobility characteristics will result in increased levels of task-technology fit

3.4.4 Collaboration

Collaboration is defined as ICT systems' ability to enable collaboration among co-workers, clients, or other stakeholders. This includes the ability to communicate via text or speech as well as collaborate online utilizing ICT technology (e.g., on documents). Technology advancements have made it simpler to cooperate using ICT technologies, and more and more tools are becoming interoperable. Three qualities of a certain technology (i.e., group support systems) that must be present for successful decision-making have been established: communication support, information processing support, and process structuring support (Zigurs & Buckland, 1998). Communication assistance refers to a technology's ability to aid, improve, or define how group members interact. Information processing assistance refers to a technology's ability to aid, improve, or define the process by which group members collect, exchange, aggregate, structure, or analyze information. Process structuring support is concerned with how organizations organize group interaction processes, such as agendas.

H4. Electronic tax Technology with higher perceived levels of collaboration characteristics will result in increased levels of task-technology fit

3.4.5 Economic Viability of Electronic tax adoption

According to Jalil et al. (2021), determining how much an accepted technology's economic benefits outweigh its costs will determine whether a given technology or application is cost-effective. Economic stability and prosperity have a significant impact on the adoption and use of information and communication technologies, according to Tripathi and Jigeesh's (2015) research (ICTs). Tripathi and Jigeesh (2015)'s assertion is consistent with what Larosiliere and Carter (2016) found.

According to Larosiliere and Carter (2016), economic viability is statistically important in influencing whether an organization will successfully embrace and use new technology. In this study, it is assumed that the financial state of the government affects how it adopts and employs IT operations. The viability dimension focuses on the available resources of an institution that have an impact on its performance. The economic, organizational, and technological preparedness of an institution can have an impact on its success. In the first instance, economic variables evaluate the budgetary or financial allocation to state institutions for the adoption of new technologies, such as electronic tax, which has the potential to influence performance (Bag et al., 2020). In accordance with prior research, adequate budgetary allocation or funding can positively impact performance in state-run institutions like the GRA on both a direct and indirect basis. Increased resources for the GRA will be available when enough financing is provided (Chen et al., 2021; Ghasemaghaei & Calic, 2020; Singh & El-Kassar, 2019).

These resources will be used to invest in new technologies as well as upgrades to the current infrastructure that supports electronic tax tools and services (Bag et al., 2020). For instance, a nation with a stable economy and sufficient or surplus resources can invest in modern digitalization equipment or information technology. Therefore, this study assumes that a nation's economic health can have an impact on whether or not the Electronic tax system is adopted and used to generate income.

H5. Economic well-being significantly influences the adoption and usage of Tax Technology

3.4.6 Organisational Viability on electronic tax adoption

According to Sánchez et al. (2017), organizational viability is the capacity of the organization's resources to support the adoption of new information technology. According to Mohammed et al., (2017), several structural elements might affect an organization's capacity to deploy a new system or embrace new technology. This is known as organizational viability. This context may be characterized in terms of the business's resources and features, including the relationships between workers, internal communication channels, firm size, and the number of loose resources (Mohammed et al., 2017). According to Heyden et al. (2018), senior management's backing and employees' level of IT expertise are two elements that affect an organization's adoption of IT.

According to Jalil et al. (2021), the cost-effectiveness of a particular technology or application depends on how much the economic benefits of an accepted technology outweigh its costs. According to Tripathi and Jigeesh's (2015) research, economic stability and prosperity have a

significant impact on the adoption and use of information and communication technologies (ICTs). The findings of Larosiliere and Carter (2016) are in agreement with the assertion made by Tripathi and Jigeesh (2015).

The viability of an organization can help in establishing if information technology is practical in achieving the needed purpose. Therefore, this study assumes that the government, via the leadership and skills of all of its members, plays a significant role in assuring the success of the implemented technology. According to this study, both the government and its citizens play a role in how effectively the accepted technology works.

***H6:** Organizational Viability significantly influences the adoption and usage of electronic tax technology*

3.4.7 Technology infrastructure on electronic tax adoption

IT infrastructure consists of the IT platforms and information services needed to support the applications of the firm (Liang et al., 2007). The researchers concluded that IT architecture serves as the basis for technical operations and helps to advance organizational development (Mohammed et al., 2017), for example, evaluated the suitability of the IT architecture to study the impact of IT infrastructure viability on technology adoption decisions. The findings showed that a firm's IT architecture may be used as a reliable indicator of how new technology is used. Information technology is now a vital and extensive tool that people, businesses, and nations employ to further their development and prosperity. The method of organizational learning and implementation has changed as a result of technology (Isaac et al., 2019). The adoption of information technology in

enterprises increases task performance (Albastaki et al., 2019; Rahi et al., 2021).

Studies have revealed that technology infrastructure has a considerable impact on task performance (Oliveira et al., 2014; Tam & Oliveira, 2016; Zhou et al., 2010). The task technology model aids individuals in understanding information systems and performance (Goodhue & Thompson, 1995). Thus, it is hypothesized in this research whenever basic IT infrastructure exists, governments are influenced to upgrade the current IT infrastructure over a period.

H7. IT infrastructure Viability significantly influences the adoption and usage of electronic tax technology

3.4.8 Individual Characteristics of electronic tax adoption

The attributes of a user of IT systems also affect the adoption and further impact performance. The specific characteristics of mobile payment users are said to affect the system's use, according to Afeti and Owusu's study on the impact of mobile payments on micro-business activities from 2022. According to the study, a person's ability to adopt an IT system is influenced by factors such as perceived fit, personal experience using computers, mobile devices, and related software, expertise, and training in information skills. This translates to the idea that electronic tax systems can increase revenue generation if users see them as advantageous and have the necessary knowledge and training to use them effectively to complete their tasks.

H8. Individual characteristics significantly influence the adoption and usage of electronic tax technology

3.4.9 Task and technology fit

The task-technology fit theory has been tested empirically in places like a transportation and insurance company, where user evaluations of task-technology fit did have higher levels of performance impacts than just the explanatory power of utilization on performance impact alone (Goodhue & Thompson, 1995). Task-technology fit was also demonstrated to be a substantial predictor of performance impact (Staples & Seddon, 2005). When researchers looked into learning management systems, they discovered that task-technology fit had a beneficial impact on student grades and that the link between fit and perceived learning impact was much greater (McGill & Klobas, 2009). To create an integrated task-to-performance chain, the task-technology fit model and utilization-focused models operate together (TPC). According to this paradigm, for technology to have a positive impact on performance, it must be used and integrated into the activities for which it was designed (Goodhue & Thompson, 1995). A good assessment of task-technology fit not only predicts usage but also has a favorable impact on perceived performance (an individual's ability to complete a portfolio of activities) (Goodhue & Thompson, 1995).

H9. Higher levels of fit will result in increased levels of tax systems Adoption and revenue generation

Viability and Performance

The organizational resources that can influence the growth and development of electronic taxation are referred to as the viability dimension (Larosiliere & Carter, 2016). Viability measures how much the available infrastructure improves the technology adopted (Liang et al., 2007). The economic, organizational, and technological readiness of the organization adopting the electronic

tax technology can have an impact on the electronic tax implementation and upgrades. The economic factor, assesses the organization's output value, economic strength, and the success of technology (e-tax) users. The organization's ability to afford financial support for adopting the electronic tax is determined by the organization's productivity and growth, which constitute its economic strength. A strong economy will benefit organizations with enough resources to invest in the creation and advancement of electronic tax (Larosiliere & Carter, 2016).

H10. Higher levels of Viability will result in increased levels of tax systems Adoption and revenue generation

3.5 Chapter Summary

The theoretical foundation for the creation of the hypotheses is examined in this chapter. The created hypotheses are consistent with the examined theory and the stated goals of the study. The chapter also developed the study's hypotheses and built its conceptual framework. Hypotheses were developed to address the research questions and satisfy the study's objectives based on the study's goals and research questions. The next chapter describes the research strategy and procedures that were utilized to test the study's hypotheses once they were developed.

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CHAPTER FOUR

RESEARCH METHODOLOGY

4.1 Chapter Overview

The hypothesis that drives this research was presented in chapter three of this study, along with the multiple constructs that support it. Additionally, as a result of the study's use of a quantitative methodology, hypotheses were developed to aid in the pursuit of answers to the study's research questions. But the focus of this chapter is on the methodology for gathering data for the investigation. Additionally, it covers the methods and instruments for gathering data for quality standards. Along with research approaches, the chapter also covers sampling, data analysis, and data collection techniques, as well as paradigms that are typically applied to information systems studies.

4.2 Research Paradigm

A study's paradigm is the author's worldview, which informs and guides the study, as well as how they understand the world around them and how they interact with it (Bostley, 2019). As a consequence, paradigms act as fundamental philosophical frameworks that guide researchers in identifying various perspectives on knowledge, reality, beliefs, and methodology of a study (Das & Dey, 2021). From a philosophical perspective, there are three basic categories of paradigms, namely Ontology, Epistemology, and Methodology (Kivunja & Kuyini, 2017).

The concept of what is understood about the cosmos is central to ontology. Whether there is a single common reality or several context-specific realities, whether social reality exists independently of human conceptions and interpretations, and whether social behavior is governed

by a set of laws that can be viewed as generalizable are all significant ontological questions that arise in social research (Park et al., 2020). The researcher is described by epistemology as being independent of the issue under investigation (Wahyuni, 2012). How can we know what is true? What is the foundation of our understanding? These are key issues in epistemology, which deals with learning about the social world (Maity et al., 2019). Furthermore, a methodology is concerned with the processes used to learn about the reality of a phenomenon; these procedures may include mixed methodologies, qualitative research, and quantitative analysis (McCrudden & Marchand, 2020). These three paradigm-related philosophies (epistemology, ontology, and methodology) assist the researcher in identifying the assumptions and events under investigation, as well as how to investigate, delve into, and grasp the research problem and methodologies used to answer the research questions (Briggs & Coleman, 2019). The interpretive positivist and critical paradigms are the most prominent and extensively used paradigms in information systems, reflecting the main theoretical trends (Kankam, 2019; Fletcher, 2017). Because of the nature of the research, the positivist paradigm was used.

4.3 Adoption of Positivism for this study

The positivist paradigm was used in this study which will help meet the overall goals. The positivist paradigm holds that reality is continuous, external, and subject to norms (Rahi et al., 2021). There is only one reality, one that must be discovered and is unchanged according to how others perceive things (Erlandson et al., 1993). Every study, according to Erlandson et al. (1993) would have to be objective and value-free. According to Park et al. (2020), the positivist paradigm helps a researcher in establishing consistency and other sorts of linkages between conceptions through the change of reality.

Partial Least Squares-Structural Equation Modelling (PLS-SEM) will be used in the study to examine how technology enhances tax revenue collection in Ghana. Consequently, the positivist paradigm will fulfill a higher demand in ensuring goals are realized because it is more associated with quantitative research in information systems (Heeks et al., 2019). Similarly, more IS researchers favor positivist paradigms than others (Lam et al., 2020; Siponen & Klaavuniemi, 2021; Ababneh et al., 2017). The positivist paradigm is used to understand tests and arrive at results appropriately. Positivism allows for the study's objective collection of scientific facts that the researcher deems relevant for this examination (Lan, 2018).

4.4 Research Methods

According to Fraenkel & Wallen (2000), study design can be defined as “the entire plan for gathering data to answer the research objectives.” In this thesis, the researcher will adopt the quantitative approach through a survey method. The justification for using a quantitative approach is that, in contrast to qualitative and mixed methods, a quantitative methodology fits the study in context and helps to extract incontrovertible evidence rather than just providing information (Bae & Lai, 2020).

The positivist worldview is mostly associated with the quantitative approach, which is used to reply to inquiries regarding quantifiable variables (McCrudden & Marchand, 2020). This approach enables statistical analysis to foresee and explain a phenomenon (Khaldi, 2017). Because the survey methodology may be utilized as a cross-sectional research method and employs questionnaires to collect data to project from a sample to the complete population, it was chosen for this study. In contrast to qualitative procedures, which are related to the interpretive paradigm,

quantitative techniques are associated with the positivist paradigm which will better serve the goal of this study (Mingers, 2004).

4.5 Population of the Study

The population of the study consists of Ghanaian businesses in the capital and the officials of the GRA. The choice of the population is for the simple reason that Accra is the central business district of the country, with lots of enterprises, and generates the most revenue (Agyapong & Ojo, 2018). In addition, the national revenue generation body of the country has its central office in the capital. It is from some key persons in the GRA that some responses could be obtained from respondents to make possible the study. As of the close of the year, 2021, 22,536 enterprises are in operation in Accra and this forms the population of the study (GRA, 2021). However, the target population is firms that apply the electronic tax system.

4.6 Sample size and Technique

In a research study, the term "sample" refers to a subset of the entire population that the researcher utilizes to represent the entire population in the particular inquiry (Mweshi & Sakyi, 2020). A representative sample of a population allows for the collection and analysis of data that can result in conclusions that are compatible with those that would have been drawn had data on the entire population been collected (Fricker, 2012). The PLS-SEM principles were adhered to. The "10-times rule" method is the most widely used method for estimating the minimal sample size in PLS-SEM (Hair et al., 2011; Liang & Lu, 2013). According to the "10-times rule," a study's sample size must be greater than "10 times" the greatest number of inner or outer model connections that connect any two model components (Goodhue, Lewis, & Thompson, 2012). The research model

for this study, which is presented in chapter three, has the most indicators for IT Infrastructure (5 indications). Therefore, $5 \times 10 = 50$ is the minimum sample size needed for this study in accordance with the "10-times rule." As a result, the study will require at least 50 participants.

However, the minimum sample size required by the "10 times" criterion is expected to be exceeded in this study because surveys will be administered to 300 respondents. The individual sample for firms in this study is then subjected to the purposive sampling approach. This kind of non-probability sampling, which depends on the researcher's judgment when choosing respondents to participate in surveys, might be vital (Pace, 2021). On the condition that researchers first comprehend the study's goal, this sampling strategy is effective in choosing eligible respondents for surveys. As all survey participants will be chosen based on a profile, purposeful sampling is used to contact a certain subset of people. The main criteria that will be used for the selection are the fact that the respondent has used and have knowledge of e-taxation in Ghana. As a sample from the study population, the researcher selected people who fit the desired profile on purpose. The findings of a deliberately chosen sample are qualitatively generalizable even though they are not necessarily statistically representative of the wider population.

4.7 Questionnaire Development

A quantitative survey approach was utilized in this study. Responders will be given questionnaires to collect important data from them. To ensure the validity and reliability of the data collection instrument, Churchill (1979) and Straub (1989) criteria were followed during the questionnaire's creation. The study's questionnaire will be created with the aid of literature on e-taxation and topics that are connected to it. The hypothesis, which is the basis of the study, will be used to formulate

questions for each item. After the questionnaire is successfully created, a preliminary evaluation of the instrument will be done (Churchill, 1979; Straub, 1989). Before a preliminary test of the questionnaire was carried out, experts in the quantitative research technique were consulted for their opinions and suggestions. The questionnaire's robustness was enhanced by constructive feedback from the preliminary test. To ensure the survey instrument's content was correct, this was done (Maher et al., 2018).

The uniqueness of each questionnaire item as well as its ability to explain the many notions for which answers are sought indicates content validity (Maher et al., 2018). Carefully examining the rationale, language, consistency of the questionnaire, and overall ambiance and look of the survey will help achieve validity. The suggestion to be made by experts and supervisors will help improve the questionnaire.

4.8 Survey Design

The questionnaire, which was used to collect data for the study's research questions, was designed using the conceptual framework for the study and the hypotheses. Two questionnaires were made out of two components. The initial part was devoted to obtaining data on the respondents' gender, age, education, and employment. Using a five-point Likert-type scale, with 1 denoting "strongly disagree," 2 denoting "disagree," 3 denoting "neutral," 4 denoting "agree," and 5 denoting "strongly agree," respondents were asked a series of questions based on the theory's construct. The Likert-type scale's results have proven to be trustworthy and consistent with multivariate analysis (Maher et al., 2018).

Table 4. 1: Constructs and the number of questions used in this study (operationalization)

Constructs and definition	No. of Items	Adapted From	Measure
Fit (FT) defines the qualitative measures of the e-tax process and its alignment with the user firm's capabilities, the ease of implementing the technology, and other initiatives.	5	Yoo and Kim (2019)	5 likert scale
Task Characteristics (TC) define the features of tasks performed using e-tax systems	5	Bramantyo (2020); Tripathi and Nasina (2017)	5 likert scale
Personalization (PE) defines how the e-tax system can easily be adapted to the specific needs of the user.	5	Blom (2000); Tripathi and Nasina (2017)	5 likert scale
Mobility (MO) assesses issues relating to location for use of the systems.	5	Hoang et al. (2008); Kobsa (2001)	5 likert scale
Collaboration (CO) on the use of information from the E-tax system for decision making	5	Baas (2010); Campion et al. (1993)	5 likert scale
Viability (VI) defines the quantitative impact of the other dimensions on the adoption of e-tax system	5	Yoo and Kim (2019)	5 likert scale
IT infrastructure (IT) defines the IT capability existing for e-tax system adoption	5	Yoo and Kim (2019); Tripathi and Nasina (2017)	5 likert scale
Economic (EC) is the financial capacity of the implementing body and the system using firm	5	Bag et al. (2020)	5 Likert scale
Organization (OR) defines the characteristics of the firm that enhance adoption of e-tax	5	Heyden et al. (2018); Tripathi and Nasina (2017)	5 likert scale
Individual (IN) refers to the personal characteristics that impact the adoption of e-tax systems	5	Afeti and Owusu (2022)	5 likert scale
Adoption (AR) defines the state of accepting and use of electronic tax system	5	McGill and Klobas (2009); Staples and Seddon (2005)	5 Likert scale

Source: Authors construction (2022)

4.9 Participating Settings

Respondents will be selected from the sampled organizations and should have knowledge on electronic tax system in Ghana. The study's goal is to examine technology use in taxation and revenue generation which will better be analyzed from the perspective of users.

4.10 Data Collection Process

Data collection is key to any research study. This is because results and information are gathered at this level of research and are used in the study and its analysis. According to Barrot et al. (2021), there are many different ways to acquire data in research, all of which may be divided into two categories: primary and secondary data. Primary data is described as information gained for the first time by the researcher, whereas secondary data is information gained previously by others (Barrot et al., 2021). For this study, Primary Data was gathered using a standardized close-ended questionnaire. This method of gathering information was chosen because it allows respondents to work on their schedules and also because it allows respondents to feel comfortable answering questions that are personal and that would have been difficult to obtain through traditional face-to-face interviews (Boateng, 2016).

The closed-ended questionnaire (Appendix B) assists in reducing the influence of the researcher as well as directing the conversation in a specific direction (Saunders et al., 2009). Specifically, the closed-ended surveys inquired about the impact of fit viability on the performance of the revenue generation and the electronic tax system in Ghana, following the recent adoption of the new technology. If respondents are motivated and willing to engage, closed-ended questions might assist alleviate the difficulties some respondents have in composing an answer that accurately

portrays their feelings and thoughts (Lin et al., 2022). Before data was collected, a concern was obtained from the respondents.

4.11 Method of Data Analysis

According to Afshar and Hafez (2021), data analysis is the process through which a researcher condenses data into a narration and interprets it to make sense of it. The author goes on to say that data analysis entails three steps: organizing the data, compressing the data through summary and classification, and identifying and connecting patterns and themes in the data. A questionnaire was used to collect primary quantitative data, which was coded and placed into a spreadsheet format using Microsoft Excel 2016. The spreadsheet format was imported into the smart PLS software. Analyzing the data, descriptive statistics were used to process and analyze it. The data were presented in tables, bar charts, and graphs and statistical tests such as Structural Equation Modelling were used to analyze the data. To provide information in a way that the reader can easily interpret, descriptive statistics will be used in the majority of cases. The PLS-SEM will be used to examine the effects of task requirements, technology characteristics, economic, IT infrastructure, individual characteristics and organizational support on revenue generation.

The interaction effects of task requirements and viability, technology characteristics and viability, economic and FVT, individual characteristics and FVT, IT infrastructure and FVT, and organizational support and FVT on revenue generation will also be investigated.

4.12 Ethical Considerations

A researcher adheres to ethical principles when conducting a study. Fisher (2010) explains ethics as principles that a researcher must follow while conducting their studies. These restrictions shield study respondents from any damage that might result from their involvement (Creswell, 2009). To confirm the department's support for the study before the start of data collection, an introductory letter (Appendix A) was obtained by the researcher from the University of Ghana's Department of Operations and Management Information Systems. Additionally, the data collection tool makes it clear that respondents are not required to answer any questions they find uncomfortable and that the data is only being collected for academic purposes.

4.13 Chapter Summary

The research paradigm and methods used in this study were covered in this chapter. The positivist paradigm and a quantitative methodology were used in this study. This chapter also presents the approaches used for data collection methods and tools as well as data analysis. The ethical issues raised and the various measures taken to ensure the safety of the responders were also discussed in this chapter. The results of the study will be discussed in the following chapter.

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CHAPTER FIVE

RESULTS AND ANALYSIS

5.1 Chapter Overview

In this chapter of the study, the researcher discusses how the PLS-SEM analysis was used to analyze and test the suggested research model. This chapter is broken up into four sections. The first section presents information on respondents' demographics. The second part of the study covers the analysis of other issues the study aims at achieving as indicated in the main objectives as well as the descriptive statistics of the variables. The evaluation of the measurement model is covered in the third section of this study. This covered the reliability of indicators, internal consistency for the reliability of indicators, convergent validity, and discriminant validity where established decision rules are followed. The last section emphasized the evaluation of the structural model for concerns of multicollinearity, as well as path significance and degree of goodness of fit coefficient, effect size, and predictive relevance all presented.

5.2 Demographic characteristics of respondents

The survey included a total of 138 respondents, and this section gives a detailed breakdown of their gender, age, level of education, roles, work experience and industry they work within. The information regarding the respondents' demographics is shown in Table 5.1, 60.9% were males while 39.1% were females. Table 5.1 also provides information on the respondents' ages who took part in the survey. The findings show that, of the total 138 replies, the age range 25 to 40 years accounted for the majority of respondents (63%), followed by those between the ages of 41-60, who accounted for 21%, and the range from 18-24 years accounted for 15.2% the least representation was above 60 years which made up 0.8% of the respondents. This means that the

majority of the respondents were in the age bracket that can understand the use of technology and how it impacts businesses.

Table 5. 1: Demographic characteristics of respondents

Category	Variables	Frequency (N=138)	Percentage (%)
Gender	Male	84	60.9
	Female	54	39.1
Age	18-24	21	15.2
	25-40	87	63.0
	41-60	29	21.0
	Above 60	1	0.80
Level of Education	SHS	13	9.42
	Diploma	15	10.87
	HND	14	10.14
	Bachelor	54	39.13
	Masters	41	29.71
	Doctorate	1	0.73
Role	Accounts personnel	27	19.58
	Business Manager	11	7.97
	Business owner	24	17.39
	Customer Service	9	6.52
	Finance Manager	14	10.14
	Head of IT Department	3	2.17
	HR Manager	6	4.35
	IT professional	3	2.17
	Marketing / Sales	17	12.32
	Operations	24	17.39
Years of work Experience	1-5	66	47.4
	6-10	36	26.3
	11-15	21	15.3
	16-20	10	7.30
	21-25	3	2.20
	26-30	2	1.50
	Academia	1	0.72
	Accounting practice	3	2.17
	Agro-industries	5	3.62
	Automobile	8	5.80

Business Industry	Banking	18	13.04
	Education	23	16.67
	Electricals	1	0.72
	Financial services	2	1.45
	Food processing	3	2.17
	Health	14	10.14
	Hospitality	2	1.45
	I.T office	2	1.45
	Insurance	7	5.07
	Legal services	6	4.35
	Manufacturing	5	3.62
	Maritime	1	0.72
	Mining	2	1.45
	Music and Movie industry	3	2.17
	Oil and Gas	6	4.35
	Property Construction	1	0.72
	Retail	13	9.42
	Services	3	2.17
	Small glass-making industry	1	0.72
	Social Work	2	1.45
Textiles	3	2.17	
Transportation	1	0.72	
Wholesale	2	1.45	

Source: Author's Construction (2022)

According to the study's responses, the majority had bachelor's degrees (39.13% of the total replies), followed by respondents with master's degrees (29.71%). The least level of education represented was doctorate which makes up 0.73%. The majority of respondents were accounting personnel making up 19.58% of total respondents, the least group of participants were heads of IT departments and IT professionals, making 2.17% respectively. Finally, 47.4% of respondents had 1-5 years of work experience with only 1.5% working for 26-30 years. Also, respondents work in various industries as presented in Table 5.1. Some of the industries included legal services, automobile, education, oil and gas, transportation, banking, health, food processing, mining, hospitality, property construction, manufacturing, financial services, music and movie industry and Agro-industries. From the analysis, the education sector was the highest 16.67% while

Electricals, Maritime, Property Construction, Small glass-making industry and Transportation were 0.72% each respectively making the least represented in this study.

5.3 Electronic tax adoption and implementation

This section of the study assessed the details of some of the factors that have a direct impact on Electronic tax adoption and implementation in organizations. For this purpose, as shown in Table 5.2, respondents were asked if their organizations had the needed IT infrastructure capable, as much as 84.1 % said yes while 15.9% said no. This is indicative of the fact that the majority of firms have what is required to adopt the system. A follow-up question intended to ascertain what some of the items the organization had revealed, desktop computers, laptops, internet, printers, scanners, data center, remote connectivity, routers and apps, smartphones, software applications, switches, third-party software and anti-virus were the items common to most of the organization. Also as shown in Table 5.2, the state of IT infrastructure in the organizations is analyzed. From the results, 71% of the respondents indicated that their IT infrastructure was in good shape while 25.4% said it needed an upgrade with only 3.6% indicating that the systems must be changed.

Table 5. 2: Electronic tax Implementation

Category	Variables	Frequency (N=138)	Percentage (%)
IT infrastructure capable	Yes	116	84.1
	No	22	15.9
State of the IT infrastructure	In good shape	98	71.0
	Needs upgrade	35	25.4
	Must be Changed	5	3.60
IT infrastructure that needs the most upgrade	Hardware	23	16.7
	Software	55	39.9
	Telecommunications	58	42.0
	None	2	1.40

Policies, standards and guidelines in place regarding e-Tax systems usage	Yes	86	62.3
	No	52	37.7
Institutional capacity and capabilities to implement e-Tax system	Yes	102	73.9
	No	36	26.1

Source: Author's Construction (2022)

IT infrastructure that needs the most upgrade as revealed by respondents showed Telecommunications (42%), Software (39.9%) and hardware (16.7%). From Table 5.2, Policies, standards and guidelines regarding electronic tax systems usage are said to be placed in a majority (62.3%) of the firms. However, 37.7% of firms still lack policies, standards and guidelines regarding electronic tax systems usage. The final question under this category was to find out the institutional capacity and capabilities to implement electronic tax system, here 73.9% of firms were shown to have the capacity to implement the electronic tax system.

5.4 Descriptive Statistics of Constructs

At this point in the analytical process, the researcher evaluates the descriptive statistics for each construct to establish the mean, standard deviation, excess kurtosis, and skewness values. The researcher analyzed the descriptive statistics of the constructs with SPSS version 22. In their research, Paliy and Shankar (2016) showed that the mean may be used to estimate either the location of the data or its overall look. Additionally, the indicates the degree to which the data deviate from the mean value. The most common indicator of central tendency is the mean, which is the average value of a group of numerical values. By adding up all the information and dividing

it by the total number of values, the average or mean is determined. It is calculated using the formula $\sum X/N$ (Paliy & Shankar, 2016). A standard deviation that is little indicates that the data tend to cluster around the mean, whereas a big standard deviation indicates that the data tend to be more spread out. If the standard deviation is large or low, this means that the data points are, respectively, higher than or lower than the mean (Hair et al., 2017, p. 61). On the other hand, if the standard deviation is close to zero, this shows that the data points are not very distant from the mean. Skewness is a measurement that indicates the degree of asymmetry or distortion in a distribution that is otherwise symmetric (Hair et al., 2017, p. 61). It determines how much the distribution of a certain random variable differs from a symmetric distribution, such as the normal distribution, by doing the calculation. Skewness is not present in a normal distribution since the distribution is symmetrical on both sides. As a consequence of this, we refer to a curve as being skewed if it leans to the right or the left (Hair et al., 2017). If both the skewness and the kurtosis of the responses stay at zero, then the pattern of the replies is said to be normal. A distribution is said to have a high degree of skewness if the number is more than +1 or lower than -1. This is an example of a general rule of thumb that may be applied to skewness. According to the rule for kurtosis, the distribution is considered to have an abnormally high peak if the number is more than +1. Distributions that transcend these thresholds for skewness and/or kurtosis are taken into account. A distribution is considered to be too flat when its kurtosis is less than -1 (Hair et al., 2017). Table 5.3 displays the descriptive statistics for the variables that were used in the study of the variables that affect the dynamics between the variables of technology fit-viability and adoption of electronic tax in Ghana. From the results, tests conducted on the collected data for this study revealed that the data are not normally distributed considering the spread as indicated in Table 5.3. Fit had a mean of 18.139, SD of 5.271, Excess Kurtosis of 0.151 and Skewness of -

3.140. This means that there is a high degree of skewness in the data collected for Fit and the data also shows a leptokurtic distribution (Hair et al., 2017 p. 61). Considering Task Characteristics, the mean was 18.862, SD of 5.074, Excess Kurtosis of 3.360 and Skewness of -4.371. The data for Task Characteristics shows a data spread that was nonnormal (Hair et al., 2017, p. 61). The distribution was not normally distributed around the mean. Same is said of the constructs Mobility, Collaboration, Economic, Information Technology Infrastructure, Organisation, individual Characteristics, and Adoption as shown in Table 5.3. However, Personalization and Viability are considered to be too flat because their excess kurtosis is less than -1 (Hair et al., 2017).

Table 5. 3: Descriptive Statistics of Constructs

Constructs	Mean	Standard Deviation	Excess Kurtosis	Skewness
FT	18.139	5.271	0.151	-3.140
TC	18.862	5.074	3.360	-4.371
PE	17.296	5.258	-0.145	-2.538
MO	18.457	4.891	3.802	-3.984
CO	18.413	4.841	4.165	-4.190
VI	17.695	5.215	-1.188	-2.296
IT	18.233	5.155	2.115	-3.971
EC	14.262	3.994	1.590	-2.787
OR	18.268	4.874	1.868	-3.636
IN	18.587	4.677	4.211	-4.160
AR	18.992	4.819	5.126	-4.699

Source: Author's Construction (2022)

Where TC- *Task Characteristics*, PE - *Personalization*, MO - *Mobility*, CO - *Collaboration*, EC- *Economic*, IT - *Information Technology Infrastructure*, OR- *Organisation*, IN- *individual Characteristics*, FT- *Fit*, VI-*Validity*, AR- *Adoption*

5.5 Model Assessment

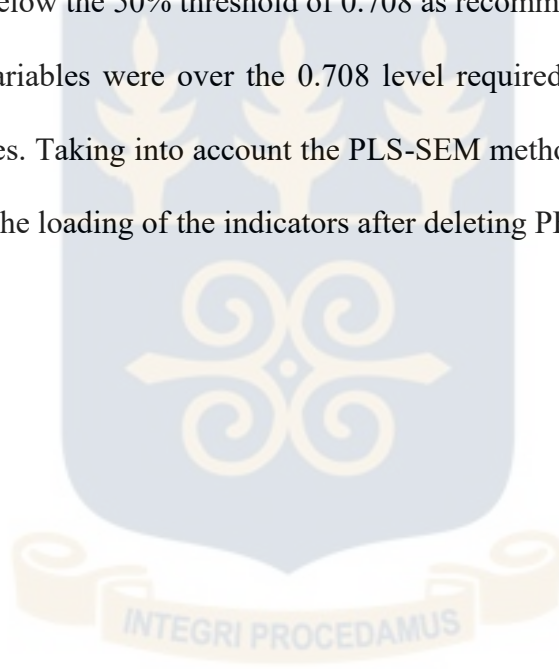
5.5.1 Measurement Model Assessment

The research used SmartPLS 3.2.8 for the Structural Equation Modelling. The selection of PLS-SEM for the model assessment was supported by the fact that it has been extensively used in numerous studies of this nature in the behavioral social sciences and has proven to enhance outcomes and results (Abdurrahaman et al., 2021; Bakare et al., 2017; Owusu, 2017; Owusu et al., 2022). To begin evaluating findings using the model in Structural Equation Modeling (SEM) data analysis, Hair et al. (2021) recommended that the measurement model must be evaluated before the structural model assessment. This same procedure was followed by Abdurrahaman et al. (2021) and has proven to be reliable. The measurement model is useful for determining the reliability of the model for further research and analysis. Measurement model validity in SEM is evaluated by convergent validity, discriminant validity, and indicator reliability (Hair et al., 2020). Model assessment, as stated by Hair et al. (2021), offers empirical measures of connections between structural models and measurement models (indicators and constructs) (constructs). The researcher established a connection between the theory and the empirical evidence. When comparing formative and summative models, evaluation criteria vary (Hair et al., 2019; Urbach, 2010, p.18). Because all of the components in this research were reflective, the measuring model's validity and reliability must be established before the structural model can be evaluated.

5.5.2 Indicators Reliability

An indicator's reliability may be described as "the extent to which a variable or group of variables is consistent with what it seeks to measure" (Urbach, 2010, p.18). Reflective indicators' loadings are checked to ensure their reliability. Loadings indicators over 0.708 are suggested for adoption

as providing satisfactory dependability of the constructs (Hair et al., 2019)). Again, the indicator variance is dominated by variables with variances of 0.708 or higher. All indicators that were not substantially loaded with their respective factors were eliminated as per Gefen and Straub (2005) recommendations. After the first SmartPLS version 3.2.8 analysis, any indications with a significance level below the minimum threshold of 0.708 were subsequently removed. Particularly, PE4 (0.566), PE5 (0.521), VI1 (0.665), VI2 (0.698), FT5 (0.695) were omitted due to its indicator value being below the 50% threshold of 0.708 as recommended by Hair et al. (2019). Indicators for all other variables were over the 0.708 level required to be considered accurate measures of those variables. Taking into account the PLS-SEM method, the results are presented in Figure 5.1 and display the loading of the indicators after deleting PE4, PE5, VI1, VI2 and FT5.



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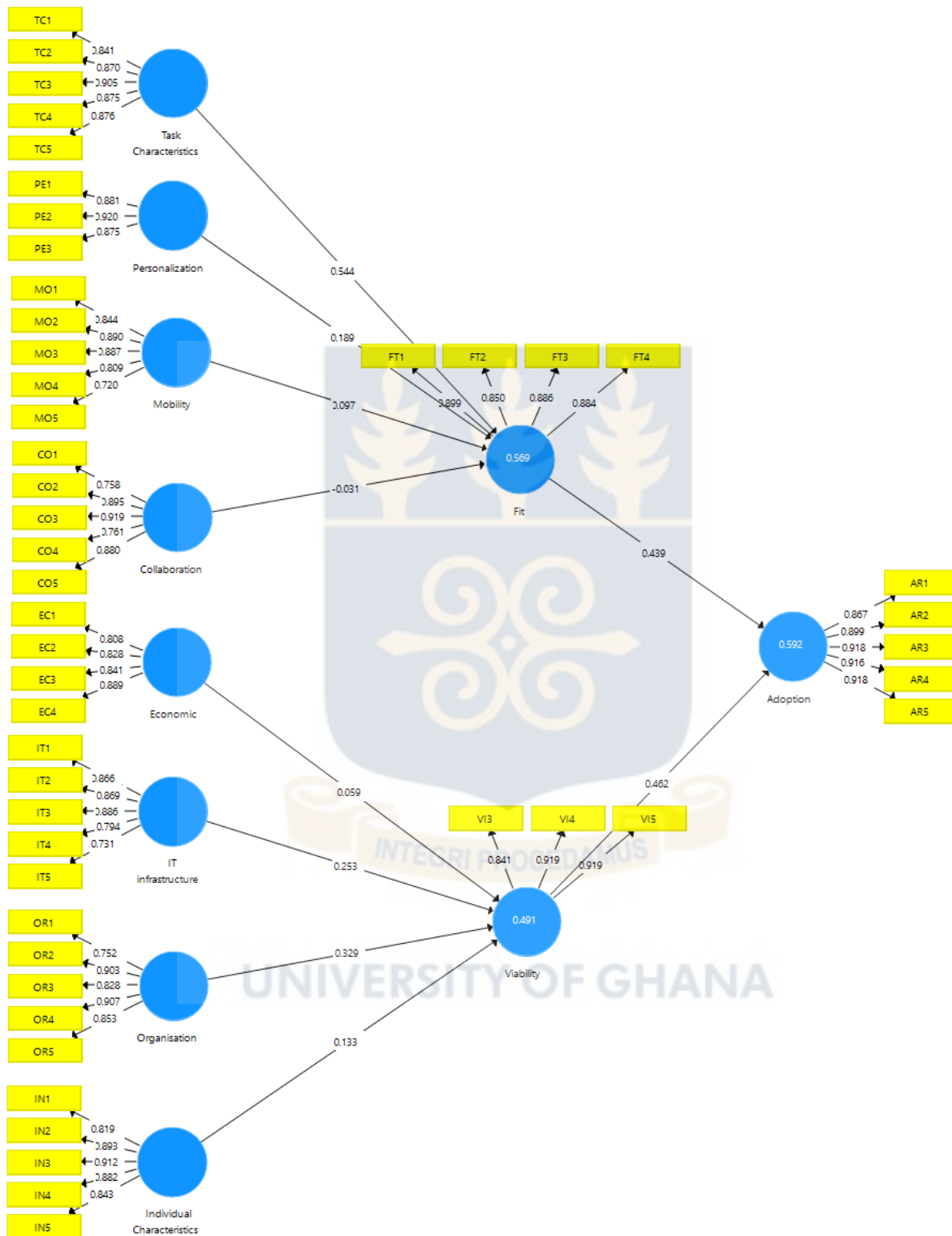


Figure 5. 1: Measurement model (PLS Analysis)

Source: Author's Construction (2022)

5.5.3 Internal Consistency Reliability

After validating the indicator's reliability, the next step is to examine the indicator's internal consistency using Cronbach's alpha. Cronbach's alpha values above 0.70 suggest that all indications of a latent variable have equivalent range and significance to one another (Cronbach, 1951). Cronbach's alpha must be at least 0.70 to be considered reliable (Nunnally, 1978). Table 5.4 shows that Cronbach's Alpha for all latent variables and constructs was more than 0.70. Because the elements are not weighted, scholars have criticized Cronbach's alpha for producing lower values and being a less reliable indicator of dependability (Hair et al., 2019; Urbach, 2010). Therefore, it was proposed to use a different metric to assess the reliability of indicators (Jöreskog, 1971). To remedy Cronbach's alpha's flaws, composite reliability was developed (Urbach, 2010). While Cronbach's alpha implies uniform loading across indicators, composite reliability provides a more nuanced picture of indicator reliability by accounting for the fact that distinct indications may carry varying amounts of weight (Henseler et al., 2009). Because of their high reliability, values between 0.60 and 0.70 are considered "suitable for exploratory study." Values of 0.95 and above are regarded as problematic because they show that the items are more than what is necessary, which causes a decrease in construct reliability. Values between 0.70 and 0.90 indicate "satisfactory to good" (Diamantopoulos et al., 2012). Table 5.4 shows that the findings' composite reliability values fall in the "satisfactory" to "good" range. Rho_A is a consistency reliability parameter that is often examined with composite reliability (Dijkstra & Henseler, 2015). Maintaining a Rho_A around 0.70 is advised. As can be shown in Table 5.4, all latent variables have Rho_A values higher than 0.70.

Table 5. 4: Construct Reliability

Constructs	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Adoption	0.944	0.945	0.957	0.817
Collaboration	0.900	0.922	0.926	0.715
Economic	0.865	0.899	0.907	0.709
Fit	0.903	0.904	0.932	0.774
IT infrastructure	0.888	0.902	0.917	0.691
Individual Characteristics	0.920	0.930	0.940	0.758
Mobility	0.888	0.901	0.918	0.693
Organisation	0.903	0.917	0.929	0.724
Personalization	0.872	0.880	0.921	0.796
Task Characteristics	0.922	0.924	0.942	0.763
Viability	0.874	0.886	0.922	0.798

Source: Author's Construction (2022)

5.5.4. Convergent Validity

The "degree to which separate items representing a concept converge in comparison to items measuring other constructs" is known as convergent validity (Urbach, 2010, p.19). The degree to which a measure is positively correlated with other measures of the same construct is assessed using convergent validity (Abdurrahman et al., 2021). To assess the convergent validity, the outer loadings and the average variance extracted (AVE) are employed (Alhassan et al., 2020; Abdurrahman et al., 2021). In other words, any constructions with strong outer loadings exhibit the correlation between the correlated indicators. All loadings should have statistically significant outer loadings, commonly known as indicator dependability. A basic thumb rule that states that all outer loading values should not fall below 0.708 was suggested since past research suggested that substantial indicator reliability may still be poor (Fornell & Larcker, 1981). This rule's reasoning is to clarify the relationship between the outer loading square of a standardized indicator and the

commonality of the indicators across all constructions. The number of variables that are ascribed to each construct is shown by the square of the outer loadings of the standardized indicator (Sarstedt et al., 2019).

The rule of thumb establishes a minimum threshold of 0.50 (50%) to account for the majority of each latent variable indicator's variation. This suggests that outer loadings should not be less than 0.708 since 0.708 squared is equivalent to 0.50. Indicators below 0.70 should be removed from the build (Bagozzi et al., 1991; Sarstedt et al., 2019). Prior study indicates that researchers should evaluate the impact the deletions will have on the composite reliability and construct validity content when removing the indicators with a p-value of less than 0.70 (Bagozzi et al., 1991; Sarstedt et al., 2019). For instance, only when the removal would result in an improvement in the composite reliability or the average variance extracted (AVE) to reach the minimum threshold value of 0.708 will outer loadings with indications between 0.40 and 0.70 be eliminated. The AVE values in Table 5.4 are all more than the minimal criterion of 0.50, demonstrating that the guidelines for convergent validity have been met.

5.5.5 Discriminant Validity

The fourth phase in evaluating measurement model processes is the discriminant. According to empirical standards, discriminant validity is the extent to which a concept differs from other constructs (Sarstedt et al., 2019). This implies that the researcher must guarantee that the components included in the phenomenon were labeled uniquely from one another to avoid replication of other constructs in the model, as stated in Table 5.5, to evaluate the discriminant

validity. Prior scholars have often suggested cross-loadings and the Fornell-Larcker criteria as the two primary methods for assessing discriminant validity in a model (Abdurrahaman et al., 2021; Bakare et al., 2017; Owusu, 2017; Owusu et al., 2022).

Utilizing the standards set forth by Fornell and Larcker (1981), the study established discriminant validity. According to Fornell and Larcker, a latent variable must share more variance with the indicators that it is assigned to than with any other latent variable to have discriminant validity (1981). Simply put, the maximum square correlation between a latent variable and other latent variables should be exceeded by the AVE of each latent variable. According to Table 5.5, the various latent variables exhibit greater variation with their assigned indicators than with other latent variables. In the Table, this is indicated by bolding the numbers. The bold numerals, which display the greatest values in both rows and columns, may also be seen. The research concludes that discriminant validity has been satisfied in this instance. In support of this finding, (Owusu et al., 2022) also aver that, when following the Fornel Lacker (1981) criteria, discriminant validity is attained since all of the bolded values (AVE's square root) are higher than their correlation with other constructs.

Table 5. 5: Discriminant Validity (Fornell-Larcker Criterion)

	AR	CO	EC	FT	IT	IN	MO	OR	PE	TC	VI
AR	0.904										
CO	0.709	0.846									
EC	0.681	0.686	0.842								
FT	0.651	0.571	0.574	0.88							
IT	0.625	0.675	0.751	0.649	0.831						
IN	0.784	0.754	0.748	0.64	0.742	0.87					
MO	0.749	0.773	0.682	0.635	0.737	0.8	0.832				
OR	0.705	0.695	0.767	0.555	0.678	0.809	0.677	0.851			
PE	0.672	0.674	0.698	0.647	0.75	0.756	0.736	0.699	0.892		

TC	0.734	0.734	0.633	0.739	0.696	0.774	0.775	0.664	0.748	0.874	
VI	0.663	0.674	0.601	0.459	0.619	0.631	0.72	0.653	0.585	0.649	0.894

Source: Author's Construction (2022)

Where TC- Task Characteristics, PE - Personalization, MO - Mobility, CO - Collaboration, EC- Economic, IT - Information Technology Infrastructure, OR- Organisation, IN- individual Characteristics, FT- Fit, VI-Validity, AR- Adoption

For testing discriminant validity, Fornell and Larcker's (1981) approach has been criticized by researchers as unsuitable. Henseler et al. (2015), for instance, suggest that the Fornell and Larcker (1981) test performs poorly when indicator loadings on a latent variable vary somewhat (for example, where indicator loads range from 0.65 to 0.85). Henseler et al. (2015) recommend using the Heterotrait-Monotrait Ratio (HTMT) of the correlations to assess discriminant validity as an alternative (Voorhees et al., 2016). Using a Monte Carlo simulation analysis, Henseler et al. (2015) demonstrated the superior performance of HTMT. The results demonstrated that HTMT can achieve higher sensitivity and specificity rates (97-99%) than cross-loadings and Fornell and Larcker (0.00% and 20.82%, respectively). When compared to the (geometric) mean of the average item correlations for the same construct, HTMT is defined as "the mean value of the item correlations across constructs" (Hair et al., 2019, p.9).

Table 5. 6: Discriminant Validity: Heterotrait-Monotrait Ratio (HTMT)

	AR	CO	EC	FT	IT	IN	MO	OR	PE	TC	VI
AR											
CO	0.763										
EC	0.745	0.763									
FT	0.700	0.620	0.651								
IT	0.670	0.750	0.854	0.707							
IN	0.836	0.826	0.840	0.697	0.818						
MO	0.812	0.857	0.761	0.699	0.819	0.879					
OR	0.756	0.770	0.862	0.608	0.757	0.882	0.752				
PE	0.744	0.762	0.806	0.726	0.849	0.846	0.836	0.787			

TC	0.786	0.799	0.703	0.805	0.765	0.842	0.850	0.717	0.837		
VI	0.725	0.760	0.666	0.514	0.692	0.694	0.815	0.725	0.671	0.719	

Source: Author's Construction (2022)

Where TC- Task Characteristics, PE - Personalization, MO - Mobility, CO - Collaboration, EC- Economic, IT - Information Technology Infrastructure, OR- Organisation, IN- individual Characteristics, FT- Fit, VI-Validity, AR- Adoption

If the path model contains constructs that are fundamentally very similar, Henseler et al. (2015) suggest a threshold value of 0.90; that is, an HTMT value above 0.90 denotes a lack of discriminant validity. However, when the route model's components are conceptually more distinct, researchers should consider 0.85 as the HTMT threshold (Henseler et al., 2015). From Table 5.7, Discriminant validity has been established based on Heterotrait-Monotrait Ratio (HTMT) approach. For a concept to show that discriminant validity has been demonstrated, the HTMT value must be less than 0.9. As seen in Table 5.7, all constructs fell below this cut-off of 0.9 confirming that discriminant validity was attained (Abdurrahaman et al., 2019).

5.6 Structural Model Assessment

Studies reveal that many researchers inadvertently utilize the reflecting measurement model to assess the structural measurement quality in PLS-SEM data analysis (Hair et al., 2012). According to Urbach, (2010, p. 15) "the statistical evaluation criterion for reflective measurement scales cannot be directly transferred to structural measurement models, where indicators are likely to represent the independent causes of the construct and thus do not necessarily correlate strongly." Prior research indicates that structural indicators, unlike reflecting measurement, are error-free, and as a result, the internal consistency reliability notion is incorrect (Diamantopoulos & Siguaaw, 2006; Edwards & Bagozzi, 2000). To assess the structural measurement model, Sarstedt et al.

(2019) suggested five crucial stages for structural model assessment which are described in this section.

5.6.1 Assessing Multicollinearity Statistics

In a multiple regression analysis, multicollinearity occurs anytime there is a mixture of predictors (Shrestha, 2020). The multicollinearity of each independent concept is evaluated via an analysis of the variance inflation factor (VIF). Collinearity between a group of predictors is shown by VIF values less than 5.088 (Sarstedt et al., 2019). When the VIF values from the PLS-SEM technique are less than 5.0, which is the accepted criterion, it means that the variables that make up the construct being observed have been seamlessly combined linearly. For all values, a VIF of less than 5.0 is shown in Table 5.8. This means that multicollinearity is not a problem in this study.

Table 5. 7: Multicollinearity Statistics (Inner VIF)

	AR	CO	EC	FT	IT	IN	MO	OR	PE	TC	VI
AR											
CO				2.841							
EC											3.27
FT	1.267										
IT											2.761
IN											3.706
MO				3.516							
OR											3.49
PE				2.679							
TC				3.253							
VI	1.267										

Source: Author's Construction (2022)

Where TC- *Task Characteristics*, PE - *Personalization*, MO - *Mobility*, CO - *Collaboration*, EC- *Economic*, IT - *Information Technology Infrastructure*, OR- *Organisation*, IN- *individual Characteristics*, FT- *Fit*, VI-*Validity*, AR- *Adoption*

5.6.2 Assessing Structural Model Path Coefficient

It is crucial to assess the relevance of the path coefficient between the model's latent variables after looking at collinearity (Urbach, 2010). Hair et al. (2014) assert that for a two-tailed test in PLS-SEM, the common critical t values are 1.65 ($\alpha = 0.10$), 1.96 ($\alpha = 0.05$), or 2.57 ($\alpha = 0.01$). Therefore the researcher achieved this by using a huge number of 5000 subsamples and a 0.1(10%) two-tailed distribution to conduct a bootstrapping procedure in SmartPLS. Bootstrapping is a "non-parametric resampling process that examines the variability of the sample data rather than utilising parametric assumptions to determine the accuracy of the estimates to measure the variability of a statistic" (Streukens & Leroi-Werelds, 2016, p.2). PLS-SEM cannot demonstrate that data is normally distributed, hence a non-parametric test using SmartPLS must be conducted (Hair et al., 2016). T-statistics are generated using the bootstrapping technique for the examination of the direct and indirect effects (Sarstedt et al., 2019; Hair et al., 2016). In PLS-SEM, the "popular critical t values for a two-tailed test are 1.65 ($\alpha = 0.10$), 1.96 ($\alpha = 0.05$), or 2.57 ($\alpha = 0.01$)" (Hair et al., 2014, p. 134).

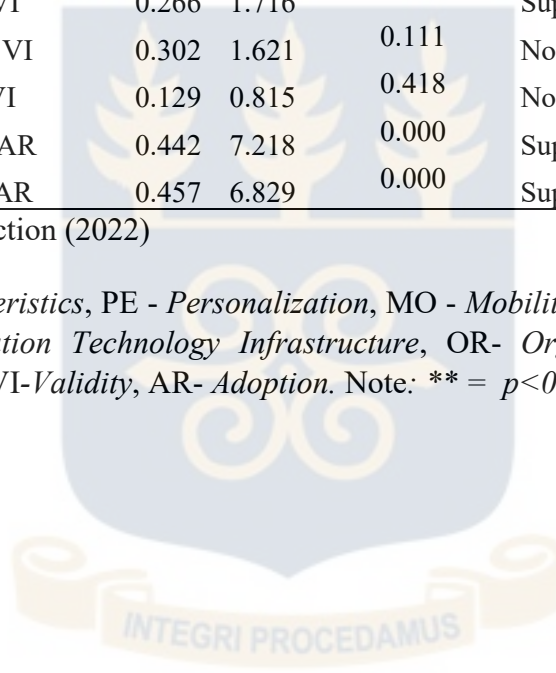
This study conducted a two-tailed test and therefore assessed the significance level at 1.65. A minimal critical value of 1.65 is recommended for a significance level of 10% (two-tailed) since a 95% confidence interval is considered (Hair et al., 2011). Table 5.9 shows that four of the ten hypotheses are supported, meaning that their crucial t-values are 1.65 or higher (**t-value** \geq **1.65**) (Hair et al., 2011). Figure 5.2 displays the same outcomes as Table 5.9.

Table 5. 8: PLS-SEM Path Coefficients and hypotheses

Hypothesis	Relationship	Std Beta	T Value	P-Values	Decision
H1	TC -> FT	0.545	4.611	0.000	Supported
H2	PE -> FT	0.18	1.295	0.147	Not Supported
H3	MO -> FT	0.106	0.693	0.395	Not Supported
H4	CO -> FT	-0.025	0.253	0.910	Not Supported
H5	EC -> VI	0.079	0.420	0.679	Not Supported
H6	IT -> VI	0.266	1.716	0.094**	Supported
H7	OR -> VI	0.302	1.621	0.111	Not Supported
H8	IN-> VI	0.129	0.815	0.418	Not Supported
H9	FT -> AR	0.442	7.218	0.000	Supported
H10	VI -> AR	0.457	6.829	0.000	Supported

Source: Author's Construction (2022)

Where TC- *Task Characteristics*, PE - *Personalization*, MO - *Mobility*, CO - *Collaboration*, EC- *Economic*, IT - *Information Technology Infrastructure*, OR- *Organisation*, IN- *individual Characteristics*, FT- *Fit*, VI-*Validity*, AR- *Adoption*. Note: ** = $p < 0.1$



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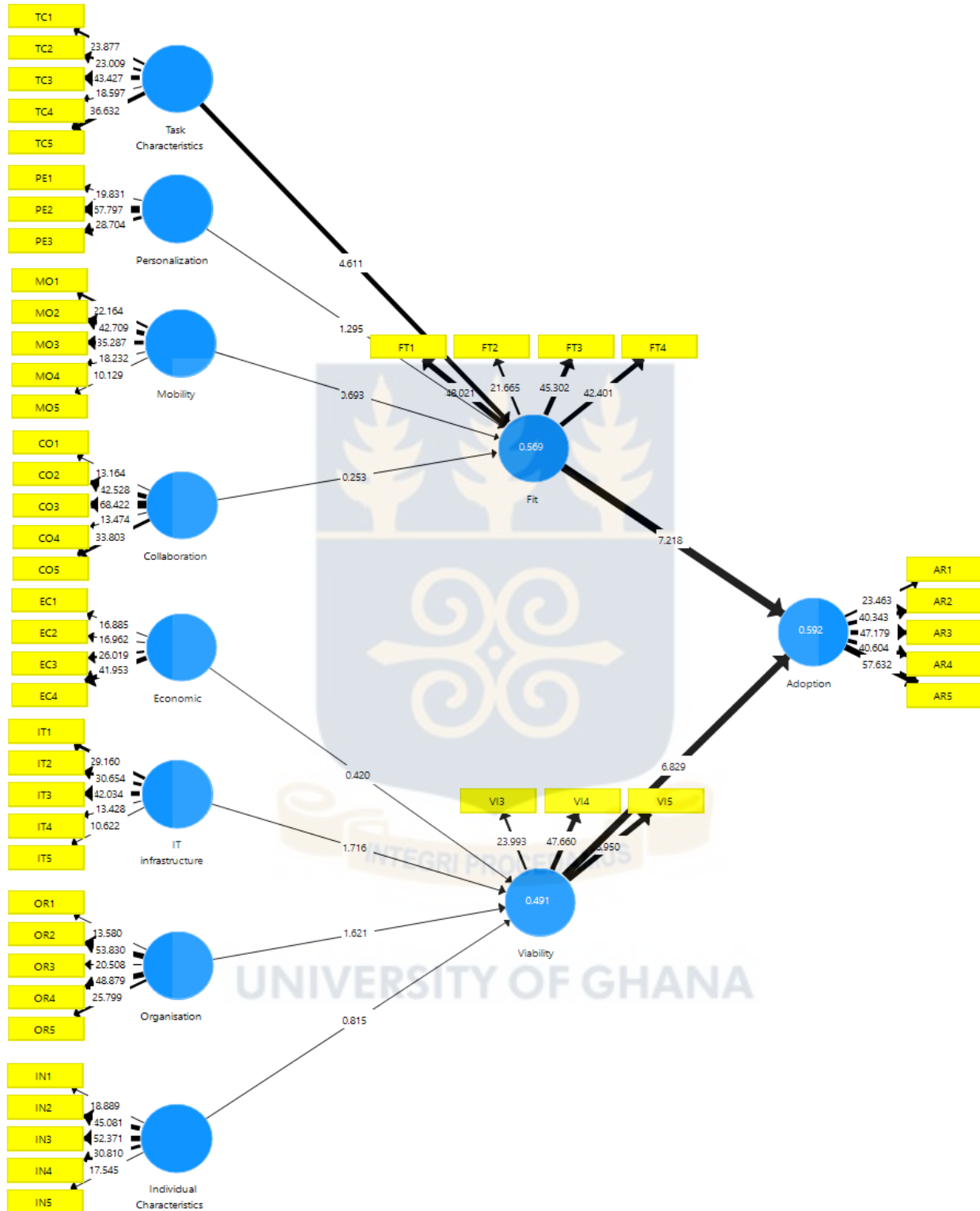


Figure 5. 2: Hypothesis for Direct Effect (Bootstrapping)

Source: Author's Construction (2022)

5.6.3 Assessing the Goodness of Fit

The goodness of fit assessment of the model shows how well-fitted the model of the study is to assess the variables (Henseler et al., 2015; Leguina, 2015). The Standardized Root Mean Squared Residual (SRMR), the Unweighted Least Squares discrepancy (D_ ULS), the Geodesic Discrepancy (D_ G), the Normed Fit Index (NFI), and the Chi-Square are the metrics used by Ocloo et al. (2020) to assess the Goodness of Fit (GOF) in PLS-SEM. The SRMR is considered to be the most suitable metric for assessing a model's goodness of fit among all of these criteria, particularly in PLS-SEM (Bailey & Burch, 2017; Jones et al., 2017; Lee & Ma, 2012). Once again, SRMR is used as a measuring criterion in assessing the goodness of fit of a model since it prevents model misspecification. Therefore, the SRMR criteria were used in this research to assess the model's Goodness of Fit. According to the SRMR rule of thumb, the model fits the data better the lower the value and vice versa (Ocloo et al., 2020). Fassott et al. (2016) state that SRMR values of 0.08 and below are considered to be the greatest fit for a model, while the opposite shows a lack of fitness.

According to the general explanation of R^2 values, 0.75 represents large, 0.50 represents moderate, and 0.25 represents poor explanatory power (Hair et al., 2019; Henseler et al., 2015). Abdurrahman et al. (2021) claim that the context of the research dictates what is acceptable R^2 values are. For instance, an R^2 value of 0.10 is considered adequate in several areas (Abdurrahman et al., 2021). Several studies favor R^2 levels above 0.65 (Abdurrahman et al., 2021). Applications of the American Customer Satisfaction Index model are one example of such investigations (Fornell et al. 1996). R^2 values of 0.190 and below were categorised by IS researcher Chin (1998) as weak levels. Values between 0.333 and 0.660 are regarded as typical,

while values above 0.670 are considered significant (Chin, 1998).

Furthermore, R^2 is exactly proportional to the predictor construct (Sharma et al., 2021). Therefore, the R^2 value increases as the predictor construct are used more often. The authors additionally said that the R^2 should be discussed in relation to the research's context and that references to and comparisons with earlier studies that are analogous to the present investigation should be provided. R^2 values in certain research may record exceptionally high values in instances of overfit model, (Sharma et al., 2021). According to researchers, a partial regression model is considered to overfit when it is complex and has many aspects; as a result, the model tends to fit the sample's inherent noise rather than the population as a whole (Sharma et al., 2018; Sarstedt et al., 2021). The coefficient of determination (R^2) measures variance in a dependent variable explained by the independent variables in a study (Vinzi et al., 2010; Hair et al., 2019; Urbach & Ahlemann, 2010).

There are three dependent variables in the study with the main dependent variable being Electronic tax system adoption. The other two dependent Variables are Fit and viability. Adoption had 59.2% of its variance explained by fit and viability indicating a lack of fit (Ocloo et al., 2020; Fassott et al., 2016), Fit had 56.9% variance explained by task and technology characteristics as well as personalization and mobility indicating a lack of fit (Ocloo et al., 2020; Fassott et al., 2016). Viability had 49.1% variance explained by the independent variables Economic, IT infrastructure, Individual characteristics and organization in the study indicating a lack of fit (Ocloo et al., 2020; Fassott et al., 2016). Table 5.9 shows the current study's R^2 bases on acceptable recommendations (Chin, 1998; Hair et al., 2019, Owusu et al., 2022).

Table 5. 9: Coefficient of Determination (R^2 Value)

	R Square	Adjusted R Square
Adoption	0.592	0.586
Fit	0.569	0.556
Viability	0.491	0.476

Source: Author's Construction (2022)

5.6.4 Determining the Effect Size (f^2 value)

When a particular construct of exogenous variables in the model is ignored, the f^2 effect size is utilized to assess or measure the influence of the change in R^2 . According to Cohen's (1988) theory, the model is most affected by f^2 values between 0.020 and 0.150, 0.150 and 0.350, and values over 0.350. The research also noted that f^2 values below 0.020 had little impact on the model's modifications. This suggests that fit as a dependent variable is believed to be minimally or weakly influenced by the independent variables, such as Collaboration (0.110), Mobility (0.006), and Personalization (0.031). Also from Table 5.12, Task Characteristics (0.211) has a marginal influence on fit. This indicates that task characteristics is having a stronger influence on Fit. Viability also as a dependent variable was affected minimally by Economic (0.002), IT infrastructure (0.046), Individual Characteristics (0.009) and Organisation (0.061). This indicates that Organisation is having a significant influence on Viability. Fit and Viability are shown in Table 5.12 to have a very significant effect size on adoption. Fit had an effect size on adoption at 0.372 while Viability had an effect size of 0.413 on adoption. This description is justified by scholars in various IS studies (Abdurrahman et al., 2021; Bakare et al., 2017; Owusu, 2017; Owusu et al., 2022)

Table 5. 10: Assessing effect size using f square values

	AR	CO	EC	FT	IT	IN	MO	OR	PE	TC	VI
AR											
CO				0.001							
EC										0.002	
FT	0.372										
IT										0.046	
IN										0.009	
MO				0.006							
OR										0.061	
PE				0.031							
TC				0.211							
VI	0.413										

Source: Author’s Construction (2022)

Where TC- *Task Characteristics*, PE - *Personalization*, MO - *Mobility*, CO - *Collaboration*, EC- *Economic*, IT - *Information Technology Infrastructure*, OR- *Organisation*, IN- *individual Characteristics*, FT- *Fit*, VI-*Validity*, AR- *Adoption*.

5.6.5 Assessing the Predictive Relevance

It is vital to investigate the structural model's ability to accurately predict outcomes Q^2 in addition to determining the magnitude of the influence that each independent construct has on the dependent construct. This is because determining the magnitude of the influence that each independent construct has on the dependent construct. An essential criterion for the predictive importance of each endogenous latent variable is that the model must have the capacity to reliably anticipate the indicators that are linked with each endogenous latent construct (Rahi et al., 2021; Stone, 1974). In order to determine the value of Q^2 , a Stone-Geisser test that is not parametric is performed (Geisser, 1975; Stone, 1974). In SmartPLS 3, a blindfolding method was used to generate estimates of the residual variances by constantly supposing that a certain number of instances were missing from the sample (Owusu et al., 2022). This was done so that the estimates

might be more accurate. It was necessary to make this assumption in order to come up with the blindfolding estimations. That is to say, the predictive significance that was found was not documented until after the blindfolding procedure had already been performed the very first time.

After this was completed, each independent construct was removed one at a time, and a blindfolding operation was begun to determine whether or not the (Q^2) exclusion was valid. When setting up the blindfolding window, it is recommended that an omission distance of between 5 and 10 be employed (Joseph F. Hair et al., 2019). Using the formula $Q^2 = (Q^2_{included} - Q^2_{excluded}) / (1 - Q^2_{included})$, the researcher was able to determine the degree to which the predictive power of each independent construct differed based on its relationship to the dependent construct (Henseler et al., 2009). The results are broken down and summarised in Table 5.14. Q^2 values that are greater than 0 and 0.25 and 0.50 correspondingly point to low, medium, and high Q^2 values for the path model (Hair et al., 2019; Owusu et al., 2022).

Table 5. 11: Q square (Q^2)

Constructs	Q^2 included	Q^2 excluded	Q^2
TC	0.425	0.357	0.11826087
PE	0.425	0.415	0.017391304
MO	0.425	0.424	0.00173913
CO	0.425	0.427	-0.003478261
EC	0.364	0.368	-0.006289308
IT	0.364	0.352	0.018867925
OR	0.364	0.337	0.04245283
IN	0.364	0.365	-0.001572327

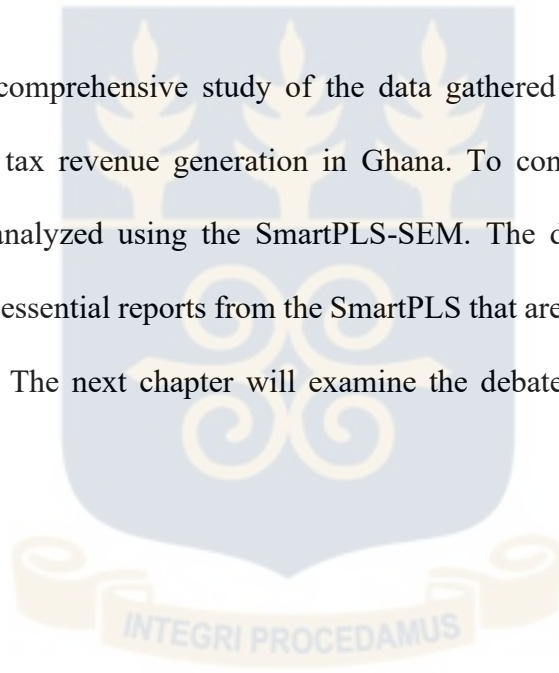
Source: Author's Construction (2022)

Where TC- *Task Characteristics*, PE - *Personalization*, MO - *Mobility*, CO - *Collaboration*, EC- *Economic*, IT - *Information Technology Infrastructure*, OR- *Organisation*, IN- *individual Characteristics*, FT- *Fit*, VI-*Validity*, AR- *Adoption*.

Task Characteristics had a Q^2 of 0.11, Personalization had a Q^2 of 0.01, Mobility had a Q^2 of 0.00 Information Technology Infrastructure had a Q^2 of 0.01 and Organisation had a Q^2 of 0.04 which represents a low effect. Also, collaboration had a Q^2 of -0.00, Economic had a Q^2 of -0.00 and, individual Characteristics also had a Q^2 of -0.00 which means that they did not have effects on the predictive model.

5.7 Chapter Summary

This chapter provides a comprehensive study of the data gathered on the dynamics between technology adoption and tax revenue generation in Ghana. To contribute to the goals of the research, the data were analyzed using the SmartPLS-SEM. The demographic factors of the respondents as well as the essential reports from the SmartPLS that are relevant to the research are presented in this chapter. The next chapter will examine the debates on the analysis that was offered.



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CHAPTER SIX

DISCUSSION OF RESULTS

6.1 Chapter Overview

The empirical results of the research objectives were reported in the fifth chapter before this chapter. This chapter provides more explanation of the findings of the study presented in the previous chapter to respond to the research questions and objectives that were presented in the earlier chapters of the study. This chapter focuses on and discusses the elements that affect the dependent construct of adoption and use of e-taxation. These components include Fit (Task Characteristics, Personalization, Mobility and Collaboration) and viability factors (Economic, Information Technology Infrastructure, Organisation and individual Characteristics). In addition, the impact of fit and viability on adoption is discussed in this chapter.

6.2 General Discussion

After presenting the findings that have been analyzed and are consistent with the literature, this subsection seeks to address the research questions. The purpose of the study is to explore the fitness of electronic tax adoption in Ghana and to evaluate its economic factors, IT Infrastructure and organizational viability impact on tax revenue generation. This subsection is divided into subsections to reflect the study's objectives and questions.

6.3 Task Characteristics, Personalization, Mobility and Collaboration fit impact on Electronic Tax implementation

This subsection discusses the fit requirements, as well as task characteristics, personalization, mobility, and collaboration fit, which have an impact on e-Tax implementation. Providing the

answers to the first and second questions supporting the study was another goal of this subsection; thus *Exploring the current state of electronic tax implementation in Ghana; and Examining the task-technology fit (TTF) impact on electronic tax adoption in Ghana.*

6.3.1 The current state of electronic tax implementation in Ghana

To determine the current condition of electronic tax implementation in Ghana, this research conducted an in-depth analysis of some of the elements that have a direct influence on the adoption and implementation of electronic tax by organizations in the country. It turned out that the majority of organizations already had the necessary information technology infrastructure that can run the system. This is symptomatic of the fact that the majority of companies already possess the necessary components to implement the system. According to the findings of the study, some of the things that the organizations required and utilized included desktop computers, laptops, the internet, printers, scanners, a data center, remote connectivity, routers and apps, smartphones, software applications, switches, third-party software, and anti-virus software. Additionally, the findings suggested that the majority of respondents have a solid IT infrastructure, while some required upgrades to successfully operate the electronic tax system. The area of the IT infrastructure most in need of an overhaul is the telecommunications system. Regarding the implementation of computerized tax systems, several businesses still do not have rules, standards, or guidelines in place. It was found that 73.9% of businesses could apply the electronic tax system.

The present investigation used the FV model, which was modeled from the essential research conducted by Liang and Wei (2004), Liang et al. (2007) and Owusu et al. (2022) to study the dynamics that exist between the adoption of new technologies and the generation of tax income in

Ghana. The present study expands on earlier investigations in the field of electronic taxation implementation but focuses on Ghana in particular. To determine whether or not the variables in question are appropriate for usage in a developing nation like Ghana, the Fit-Viability model was used. It became clear from the results of the research (refer to Table 5.9) that the bulk of the hypotheses (H2, H3, H4, H5, H7 and H8) were not supported by the model, except H1, H6, H9, and H10, which were supported. According to the data, the adoption of electronic taxes technology was decisively affected or impacted by the task characteristics as well as the information technology infrastructure.

6.3.2 Task Characteristics

When using the 't-value' threshold as the basis for the discussion, it is feasible to conclude that the hypothesis is supported by observing that this is the case. As a result, the characteristics of the task play a significant part in the acceptance and use of the technologies pertaining to Electronic tax technology adoption by businesses. It was discovered that there was a positive link between the task characteristics and the adoption and use of Electronic tax technology, and the corresponding t-value for this relationship was 4.611. This leads one to believe that work schedules and dependency on Electronic tax technologies is a crucial driver for success in taxation. This finding is consistent with the findings of Owusu et al. (2022) who found that cloud computing implementation has a high fit when the nature of cloud computing fits the task requirements in firms. In consistency, it is seen from this current study also that, the ability to use the electronic tax platform is related to the task characteristics or requirement. Also, the research conducted by Arewa and Davenport (2022) has shown that the characteristics of the task affect Fit, which in turn affects the adoption of cloud computing such as the Electronic tax system in Ghana. Extant

research that has used the FVT, such as Larosiliere and Carter (2016) has been corroborated by the results of this study, which pertain to the characteristics of the tasks being performed.

Zhang and Min (2021) studied the effects of task features on work design, it was revealed that task characteristics increase job satisfaction and intrinsic motivation at work. Task characteristics to this extent are collaborated in this study as significant in Electronic tax technology adoption. Task characteristics in relation to the implementation of electronic tax in an economy include all activities of the tax institutions in terms of accessibility, simplicity, inclusiveness, and inclusiveness, as well as completeness and limited human interface in every stage of operation to improve performance (Bag et al., 2020). A study by Bramantyo (2020) indicated that the taxation system should encompass a variety of duties such as electronic registration, electronic filing, electronic simplified product tax, electronic billing, and electronic fabrication. As collaborated by this study, these tasks improve both the functionality of the system as a whole as well as individual user experiences. The task characteristic approach to the assessment of task design focuses on the features of employment that make a job interesting and, as a result, more motivating for workers to complete. The adoption and use of cloud computing are both connected with task features such as automation, resource sharing, multitenancy, internal knowledge, and remote implementation (Tripathi & Jigeesh 2015).

6.3.3 Personalization

On the construct of personalization, the results showed a different relation other than the one projected by the hypothesis. Personalization was seen as not a significant construct on fit and subsequently adoption in relation to Electronic tax technology. The t-value for the correlation of

personalization and fit was $t = 0.146$ which indicated a less significant relationship between the constructs. This finding is not consistent with the findings of (Baas, 2010) who indicated that personalization was among 3 (three) technology characteristics that help the adoption of technology. The findings present the fact that the E-taxation system of Ghana is not highly robust for personalization. To have a personalization function the system should have the ability to (quickly) obtain information is one of the three factors that Blom (2000) cites as justification for altering ICT tools (e.g., bookmarks). Second, individualized tools take into account individual characteristics, such as the fact that different persons have different preferences about how they do the same kinds of jobs (e.g., one or two mouse clicks for opening a document). Thirdly, by automating otherwise mundane procedures, personalization helps promote work goals. (e.g., through macros).

6.3.4 Mobility

The hypothesis that there is a link between mobility of fit and the implementation and use of Electronic tax technology was also refuted. The t -value for the link was 0.693, which shows that the hypothesis is not supported by the data. In this context, mobility refers to the technology behind electronic tax, and the hypothesis concludes that this factor does not greatly impact the acceptance and use of electronic tax as a system of taxing. The capacity of information and communications technology (ICT) systems to facilitate cooperation among co-workers, clients, or other stakeholders is the definition of mobility (Gareis, 2002; Haddon & Brynin, 2005). This includes the capability to communicate verbally or in writing, as well as to work together on projects using the internet and other forms of information and communications technology (e.g., on documents). The growth of technology has made it easier to collaborate utilizing ICT technologies, and an

increasing number of tools are becoming compatible with one another. However, the findings of this study indicate that mobility as a technology factor does not impact electronic tax adoption. This finding corresponds with the assertions of Rifat, Nisha and Iqbal (2019) who asserted that electronic tax adoption is not impacted by mobility.

6.3.5 Collaboration

Collaboration is described here as the capacity of ICT technologies to facilitate collaboration among associates, clients, and other stakeholders (Kapogiannis & Sherratt, 2018). This includes the capacity to interact through text or speech and cooperate online using ICT technologies (e.g., on documents) (Bruce & Hogan, 2019). The study again did not support collaboration as a technology characteristic that significantly affects electronic tax technology implementation. The t-value for the link was 0.253, which shows that the hypothesis is not supported by the data. This finding goes against the fact that the rise of technology has facilitated collaboration through ICT tools, and an increasing number of tools are interoperable (Baas, 2010). Three elements, namely communication support, information processing support, and process structuring support were recognized as necessary for successful decision-making for a given technology (i.e., group support systems) (Zigurs & Buckland, 1998). Technology's ability to facilitate, enhance, or specify how members of a group may communicate is known as a communication support. Technology's ability to support, enhance, or define the process by which group members gather, distribute, aggregate, organize, or analyze data is known as information processing support (Srinivasan & Swink, 2018; Kroh, Luetjen, Globocnik & Schultz, 2018).

6.3.6 Examine the impact of the fit on electronic tax adoption

To validate the hypotheses of the proposed conceptual framework from FVT for this second objective of the research on the impact of the fit on electronic tax adoption in Ghana, the use of partial least square-structural equation modeling, more specifically the SmartPLS-SEM, was required. This was because the factors that influence electronic tax fit in task-oriented activities in Ghana necessitated its utilization.

Task characteristics to this extent are collaborated in this study as significant in Electronic tax technology adoption. Task characteristics in relation to the implementation of electronic tax in an economy include all activities of the tax institutions in terms of accessibility, simplicity, inclusiveness, and inclusiveness, as well as completeness and limited human interface in every stage of operation to improve performance. Also, under technology characteristics the following factors were assessed for their fit on the model, Personalization, Mobility, Collaboration and all did have significant results to be considered fit for electronic tax adoption in Ghana.

6.4 Economic, IT Infrastructure, Organisational Viability and Individual Characteristics on Electronic Tax Adoption

This subsection discusses the viability of electronic tax adoption and its economic impact, the impact of IT infrastructure, organizational impact and individual characteristics. Providing the answer to the third question supporting the study was another goal of this subsection; thus *Evaluating the viability impact on tax revenue generation in Ghana.*

6.4.1 Economic

The third hypothesis is economic viability, which analyses the extent to which economic factors affect the adoption and use of Electronic tax technology (Mu, Fentaw & Zhang, 2022). The related t-value was 0.420, indicating that economic circumstances do not encourage the use and acceptance of Electronic tax technology. This indicates that the adoption and use of Electronic tax technology by taxpayers are not influenced by its current economic situation. This manifests that every available hardware (smartphones, tablets, etc.) can help to access the technology, as well as the cost of internet data to download the application for usage on the hardware infrastructure is not relatively higher than will be for any other application, as well as application maintenance, to be done by government and not the firms. However, existing studies have had different results. According to Tripathi and Jigeesh (2015) research, economic well-being strongly determines the use and uptake of information and communication technologies (ICT). This is the same as with the research results of Larosiliere and Carter 2016), who said that economic prosperity influences the overall preparedness, implementation, and use of IT across all sectors and endeavors. Owusu et al. (2022) also agreed that regarding the operational and economic viability of the cloud computing system, a company should provide a sufficient budget for its creation and ongoing maintenance. Therefore, the findings of the study are inconsistent with the literature (Owusu et al., 2022).

6.4.2 Information Technology Infrastructure

IT infrastructure viability is defined by Agrawal and Jain (2019) as IT resources that impact the acceptance, utilization, and performance of a new technology or system inside an organization. The present study's findings agree with the idea. The t-value corresponding to the hypothesis was

1.716, which is above the cut-off value of 1.65; hence, the hypothesis was supported. Regarding electronic tax technology, the organization should focus on the right IT infrastructure for the organization to be able to use the system.

Chavoshi and Hamidi (2019) note that IT infrastructure alone is insufficient to influence an organization's adoption of new technology. Nonetheless, the results from research by Larosiliere and Carter (2016) demonstrated that IT infrastructure has a substantial effect on the performance of information technology. In their investigation of the electronic government maturity and its drivers in the United States of America, Larosiliere and Carter (2016) found that IT infrastructure contributes the most among the available resources. The study's results indicated that IT infrastructure is crucial to the adoption and performance of information technology systems in business enterprises. Even though the aforementioned research was conducted in a developed nation, the same is shown here to apply to developing nations and Ghana for that matter. These findings support Chege, Wang, and Suntu's (2020) recommendation that businesses and governments work to improve IT infrastructure. This is because IT infrastructure is critical to business performance.

6.4.3 Organisation Factors

In addition, the seventh hypothesis of this research hypothesized that Organizational Viability is highly related to the adoption and application of electronic tax technology. Organizational viability, according to Nair et al. (2019), is the preparedness and availability of the required organizational resources for the adoption of new information technology. Similarly, taxpayers are to utilize electronic tax technology on devices such as smartphones, tablets and PCs. The t-value

corresponding to the hypothesis was 1.621, which is below the cut-off value of 1.65; hence, the hypothesis was not supported. This conclusion is not consistent with previous research (Amanullah & Ali, 2014; Larosiliere & Carter, 2016; T. P. Liang et al., 2007) on the effect of organizational viability on the adoption and usage of new information technologies or systems. For example, Larosiliere and Carter (2016) found that the viability aspect of an organization has a substantial correlation with e-government success. With proper organizational support and encouragement, the usage and acceptance of new information technology may flourish, according to the research. The same claim is supported by Owusu et al. (2022), who found that a firm's viability was low on the organizational construct and that organizational restructuring was necessary to adopt and use cloud computing. This finding pointed to the fact that a firm's low viability was caused by the absence of top management support.

6.4.4 Individual Characteristics

Also, the eight hypotheses of this research hypothesized that Individual Characteristics are highly related to the adoption and application of electronic tax technology. The t-value corresponding to the hypothesis was 0.815, which is below the cut-off value of 1.65; hence, the hypothesis was not supported. This finding does against an already known assertion by research that the characteristics of a user of IT systems can influence adoption and performance. According to Afeti and Owusu's (2022) research on the effect of mobile payments on micro-business activities, the unique characteristics of mobile payment users influence the use of mobile payment systems. The research found that perceived compatibility, personal experience with computers, mobile devices, and associated software, competence, and training in information skills influence an organization's capacity to adopt an IT system. This relates to the fact that electronic tax systems may increase

revenue production if users regard them as advantageous and have the necessary knowledge and training to utilize the system effectively to satisfy their task-related requirements (Kim & Mongi, 2019; Handoyo, 2019). This goes to drive home the fact that, everyone with basic IT ability should be able to use the electronic tax system and not require any specific skills and training. This finding supports the argument of Kimathi, Zhang, and Hu (2019), who argued in their study that basic IT skills are required to use information systems such as the electronic tax system.

6.4.5 The impact of the viability of the electronic tax infrastructure on adoption

Economic, organization and individual characteristics were not supported as constructs that impact viability in the implementation of electronic taxation in Ghana. Only IT infrastructure was significantly established as a factor for Viability of adopting electronic taxation in Ghana. This goes to say that some of the things that the organizations require in their infrastructure to be able to adopt electronic tax systems include; desktop computers, laptops, the internet, printers, scanners, a data center, remote connectivity, routers and apps, smartphones, software applications, switches, third-party software, and anti-virus software.

6.5 Fit and Validity

The study found that fit and viability were significant in determining the adoption of electronic tax systems in Ghana at t-values of 7.218 and 6.829 respectively. Task-technology compatibility was also shown to be a significant predictor of performance effect (Staples & Seddon, 2005). The task-technology fit had a positive impact on student grades, and the relationship between fit and perceived learning impact was much stronger, according to researchers who looked at learning management systems (McGill & Klobas, 2009). The task-technology fit model and usage-focused

models work in tandem to provide an integrated task-to-performance chain (TPC). According to this paradigm, for technology to have a beneficial effect on performance, it must be used and incorporated into the tasks for which it was intended (Goodhue & Thompson, 1995). A good assessment of task-technology fit not only predicts usage but also has a positive effect on perceived performance (Aldholay, Abdullah & Ramayah, 2019; Jeyaraj, 2022). Thus, the ability of an individual to complete a portfolio of activities. These findings battress the assertion of Isaac, Aldholay, Abdullah and Ramayah (2019) who asserted that a good task-technology fit assessment boosts perceived performance.

6.6 Chapter Summary

In this chapter, the researcher analyzed the data collected on the dynamics between technology adoption and tax revenue generation in Ghana. The examination of the collected data aided the achievement of this study's research aims. This study aimed to explore the current state of electronic tax implementation in Ghana. Examine the impact of the task-technology fit (TTF) of the project on adoption. Examine the impact of the viability of the electronic tax infrastructure.

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CHAPTER SEVEN

SUMMARY, CONCLUSION AND RECOMMENDATIONS

7.1 Chapter Overview

In chapter six, the primary focus was placed on explaining how the analysis of the study was carried out. This was accomplished by comparing and contrasting the findings of the analysis with the hypotheses that guided the study as well as with findings from earlier studies. This chapter presents a summary of the study in addition to the answers to the issues that were produced by the research. This chapter discusses the limitations which were established in the conduct of the study, as well as some recommendations for potential areas of research that may be pursued in the future.

7.2 Summary

The study sought to explore the fitness of electronic tax adoption in Ghana and to evaluate its economic factors, IT Infrastructure and organizational viability impact on tax revenue generation.. As was discussed in Chapter 1, in its most basic form, the primary objective of developing an electronic Tax system in Ghana is to ensure that everyone, regardless of the industry in which they operate, is subject to taxation. This will ultimately lead to an increase in the amount of tax that is brought in by the government. The researcher, on the other hand, discovered via the evaluation of the relevant literature that there were few studies on the effects of the introduction of electronic tax in Ghana. As a result, it is essential to evaluate the efficiency of the electronic Tax system in light of the fact that the project is still in its infancy. In addition, it is essential to evaluate, in the first place, whether there is infrastructure to facilitate the smooth implementation of the project, as well as evaluate the project's viability and fit in light of the theory of fit and viability.

The existing literature on electronic tax was reviewed in Chapter 2. In the literature review section, the researcher began by reviewing some essential concepts particular to the topic under consideration, including the e-tax system, and elements of a good technology-driven tax system. A theoretical review was done followed by the empirical literature to position the study. The review of previous research conducted in preparation for this study revealed a few gaps that have to be filled up. First, even though Ghana is a relatively new user of the technology, the majority of the previously conducted study on electronic taxes has been conducted with a focus on other countries. There is a dearth of study on the subject of the use of technology and the creation of tax income in Ghana. In addition, the majority of prior study on has concentrated their attention on the manual taxing system. As a direct result of this, a prospective study can center on the qualities that provide the foundations for the adoption of e-taxation in Ghana. The research that has been done in developing nations, notably in sub-Saharan Africa, is scarce, according to the findings of a review of the relevant academic literature on the subject of the adoption of new technologies and the development of new tax revenues. These gaps directed the researcher to focus on this study on the dynamics that exist between the adoption of new technologies and the generation of tax income in Ghana.

In addition, the Fit-Viability theory was investigated to determine how it influences the research conducted on electronic taxation in Chapter 3. This theory was chosen so that we could investigate the dynamics that are currently present in Ghana in relation to the adoption of new technologies and the generation of tax income. The FVT was chosen because its structures can evaluate whether or not Ghana should adopt electronic tax filing. This was a primary factor in the decision. In a similar vein, the concept was developed further to assist in the identification of the factors that

influence the adoption of electronic tax filing in Ghana.

The techniques and procedures that are utilized in the research were dissected in the fourth chapter of the book. The chapter provided an in-depth analysis of the three most prevalent paradigms in the field of information systems research. In addition, ontology, epistemology, and methodology were analyzed in this study. In the end, the disagreements led to the selection of positivism as the most appropriate paradigm for the inquiry. In addition, the research plan, sample technique, data-gathering methodology, and analysis procedure for the study are all laid out in this chapter.

The data that was gathered was analyzed in the fifth chapter, and the findings were presented. Comprehensive cleaning of the data was performed before commencing the analysis of the data to get rid of any incomplete data sets. The SPSS algorithm was then used to analyze the demographic composition of the data, and the Smart-PLS algorithm was then used to analyze the data results to derive responses to the research questions. Both of these analyses were carried out to determine whether or not the research questions could be answered. According to the findings of the study's analysis, the majority of the hypotheses that were investigated were worthy of attention. In addition, the moderator's influence on both the dependent and independent variables was analyzed for its significance.

7.3 Mapping Research Objectives to Findings and Contributions

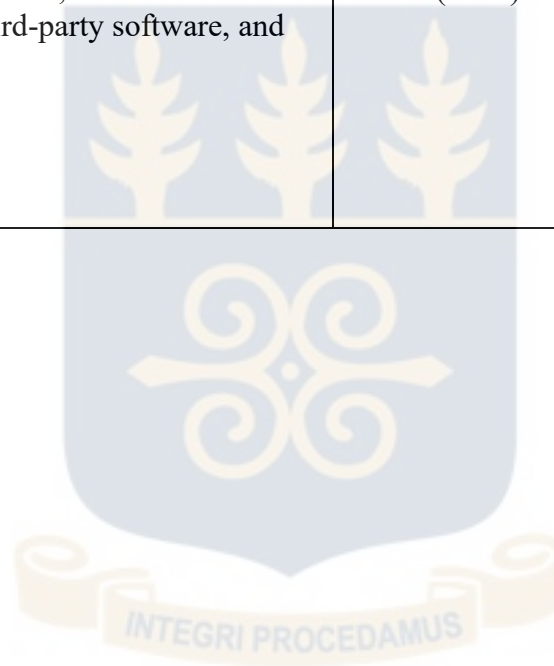
Table 7.1 presents a summary of the research's findings in relation to its objectives. An examination of the study's contributions, implications, and recommendations is also provided.

Table 7. 1: Mapping Research Objectives to Findings and Contributions

Research Objectives	Research Findings	Extant Supporting Literature	Contributions, Implications, and Recommendations
<p>Explore the current state of electronic tax implementation in Ghana.</p>	<p>This study did an in-depth investigation of some of the factors that directly affect how organizations in Ghana are adopting and implementing electronic taxes to ascertain the state of the practice at the moment.</p> <p>As it turned out, the vast majority of organizations already had the system-capable information technology infrastructure. This is a sign that the majority of businesses already have the parts they need to put the system in place. The study's conclusions indicate that some of the equipment that the organizations needed and used was made up of desktop computers, laptops, the internet, printers, scanners, a data center, remote connectivity, routers and apps, smartphones, software applications, switches, third-party software, and antivirus software.</p> <p>The telecommunications system is the component of the IT infrastructure that requires the greatest improvement. Many firms currently lack norms, standards, or recommendations for the deployment of computerized tax systems. It was discovered that 73.9% of enterprises could use the computerized tax system.</p>	<p>Chavoshi and Hamidi (2019)</p> <p>Mohammed et al. (2017)</p>	<p>This study has indicated that organizations have the required basic infrastructure for IT systems implementation. This indicates that at the firms' level government can be assured of the implementation of the electronic tax system.</p> <p>Other studies can focus on individual fit and viability to adopt electronic tax systems.</p>

<p>Examine the task-technology fit (TTF) impact on electronic tax adoption in Ghana.</p>	<p>Employing electronic taxes in Ghana's task-oriented activities was mandated by the criteria that determine how well they fit into those activities. As a result, this situation has risen.</p> <p>When it comes to the implementation of electronic tax in a given economy, the task characteristics that need to be considered include the operations of all tax institutions in terms of accessibility, simplicity, inclusivity, and inclusiveness, as well as completeness and minimal human interaction in each stage of the operation in order to maximise performance.</p> <p>The following characteristics of technology; Personalization, Mobility, and Collaboration were also examined for how well they matched the model. All of them did not show a significant relationship, which made them not ideal for Ghana's adoption of the electronic tax system.</p>	<p>Owusu et al. (2022); Yoo and Kim (2019)</p> <p>Mohammed et al. (2017)</p> <p>Tripathi and Jigeesh (2015)</p> <p>Baas (2010)</p>	<p>Given that electronic tax-filing systems are entirely voluntary and that a sizable number of businesses from a variety of industries make up their target user base, it is not sufficient to simply design and implement an efficient system that is also straightforward to use to attract more users. It is critical to provide electronic tax filing options that offer customers a strong, dependable degree of security and privacy protection.</p> <p>The government's attempts to directly influence people's intentions to behave in this way won't cause them as much concern. The results of this study show that self-efficacy in the information infrastructure has a substantial impact on intentions to use electronic technologies.</p> <p>The proposed hypotheses suggest that businesses with more effective information infrastructure technologies are more likely to embrace tax schemes.</p>
<p>Evaluate the viability impact on tax revenue generation in Ghana.</p>	<p>Economic, organizational, and individual factors were not deemed to be dimensions that affect viability in Ghana's adoption of electronic tax system adoption. The viability of implementing electronic taxes in Ghana was largely demonstrated by IT infrastructure.</p>	<p>Tripathi and Jigeesh (2015)</p> <p>Owusu et al. (2022)</p> <p>Afeti and Owusu (2022)</p>	<p>The current study, which also includes a review of actual data, was built on the fit-viability model for corporate adoption of electronic tax. This study used fit and viability criteria to explain how Ghana's adoption of an electronic tax system is working from a theoretical perspective. This study used fit and viability factors to theoretically explain how well electronic</p>

	<p>This means that among the things that organizations need in their infrastructure to be able to adopt electronic tax systems are desktop computers, laptops, the internet, printers, scanners, a data center, remote connectivity, routers and apps, smartphones, software applications, switches, third-party software, and antivirus software.</p>	<p>Sánchez (2017) Larosiliere and Carter (2016)</p>	<p>tax uptake performed. The fit construct may be explained by both task and technology characteristics, while viability can be explained by three separate factors: economic viability, IT infrastructure, and organizational support. The research was a direct application of Tripathi and Nasina's (2017) FVT study, which used identical technical elements. The adoption and implementation of electronic taxes are not impacted by economic or organisational factors, according to this study.</p>
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7.4 Research Contributions and Implications

This study has implications for three key areas: practice, research, and policy.

7.4.1 Implications to Research

Two distinct literary contributions have been made by this study. First, the study used the fit and viability theory to examine the current status and effectiveness of Ghana's electronic tax implementation. When the fit viability theory is applied to this study, it encourages researchers to focus on the task of electronic taxation, its technology, and the environmental impact of its adoption rather than just on whether or not the electronic tax offers a better alternative to the manual tax revenue generation and how it is influencing the technological aspects in a developing economy tax revenue generation.

Secondly, the study advances knowledge by examining the adoption of electronic tax in developing nations with little attention. This study also demonstrates the importance of researchers in the field of information systems to continue their investigation into the implications and effects of electronic tax adaptation.

7.4.2 Implications for Practice

This study added to practice by highlighting the organizational and technical factors that affected the adoption of the electronic tax. Managers must see to it that making a system (electronic tax) useful and user-friendly is not enough; they must also work to attract more users to it. It is therefore essential for managers to develop electronic tax filing options that offer customers a strong, trustworthy level of security and privacy protection. The findings of this study show that information infrastructure self-efficacy has a significant influence on the intention to adopt

electronic tax technology. According to the presented hypotheses, firms with greater information infrastructure technology efficacy are likely to adopt tax systems.

7.4.3 Implications for Policy

Regarding policy, the adoption of electronic taxes requires the development of an attainable policy direction and strategy that will guide and direct the ecosystem's stakeholders. These stakeholders' roles and responsibilities, as well as the timeframe for their activities, would be clearly defined by this policy framework. In addition, to make an initiative like electronic tax technology viable and sustainable, organizations and implementation agencies (GRA) in other developing nations can emulate it.

Again, because the electronic tax is a technology-driven initiative, institutions adopting the technology must upgrade their IT infrastructure to handle expected future demand. Additionally, there is a need for continual public education about the use of electronic tax returns in order to prevent crowding at GRA offices when businesses forward their tax returns.

7.5 Research Limitations

There are some limitations in this study. Further research directions were required in light of the identified limitations. This study focused only on Ghanaian businesses in the capital (Greater Accra Region) and the officials of the GRA and does not contain any businesses outside the capital. This constrained the researcher's options in terms of the total number of respondents. However, the theory employed in the study gave rise to the required comprehension of the primary objective.

Again, this study employed quantitative methodology to explore the fitness of electronic tax adoption in a developing economy and examine the task-technology fit impact on the electronic tax.

7.6 Future Research Directions

This study adapted Liang et al. (2007)'s Fit and Viability theory to explore the fitness of electronic tax adoption in a developing economy and examine its task-technology fit impact on the electronic tax. Future research can present more generalizations of the results of this study by utilizing other theories to discover additional features that correspond to the adoption of electronic tax technology.

This study focused only on Ghanaian businesses in the capital and the officials of the GRA. Hence, further studies could be conducted to include other Ghanaian businesses that use the electronic tax system to file their tax returns. This will give enough room for additional data analysis.

Lastly, further studies can examine the various aspects of the electronic tax system's fit and viability to determine how they will affect the system's implementation.

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APPENDIX A



UNIVERSITY OF GHANA
BUSINESS SCHOOL
DEPARTMENT OF OPERATIONS AND
MANAGEMENT INFORMATION SYSTEMS

UGBS
University of Ghana Business School

Ref. No.:.....INTRO/OMIS/0422/05.....

19th August, 2022

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

LETTER OF INTRODUCTION – SOPHIA NAA ADJELEY BARTELS – 10876511

I write to kindly introduce to you the above-named second year MPhil student from the Operations and Management Information Systems department, University of Ghana Business School.

Sophia is working on a dissertation titled **‘Dynamics Between Technology Adoption and Revenue Generation in Ghana.**

The thesis is being supervised by Dr. Acheampong Owusu, a Lecturer in the department.

Sophia intends to use your organization to enable her gather data.

I should be very grateful if you could provide the necessary information and assistance for the successful completion of this attachment.

Thank you for your anticipated co-operation.

Yours faithfully,

Prof. Anthony Afful-Dadzie
Head of Department

UNIVERSITY OF GHANA

INTEGRI PROCEDAMUS

COLLEGE OF HUMANITIES

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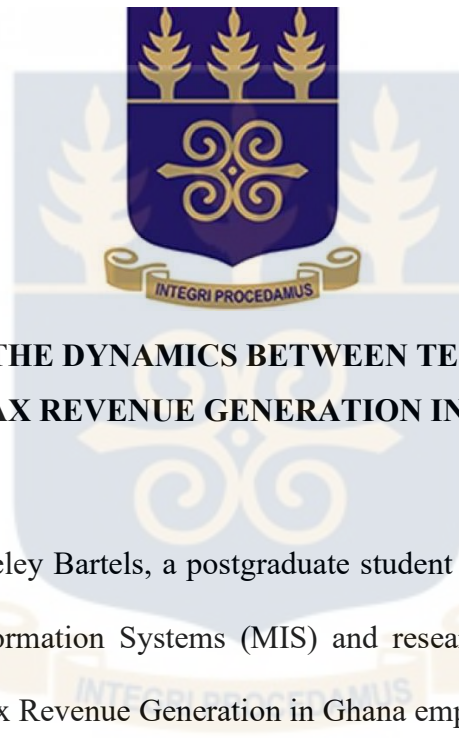
APPENDIX B

QUESTIONNAIRE

UNIVERSITY OF GHANA

SCHOOL OF GRADUATE STUDIES

DEPARTMENT OF MANAGEMENT INFORMATION SYSTEMS



**QUESTIONNAIRE ON THE DYNAMICS BETWEEN TECHNOLOGY ADOPTION
AND TAX REVENUE GENERATION IN GHANA**

My name is Sophia Naa Adjeley Bartels, a postgraduate student studying Master of Philosophy (MPhil) in Management Information Systems (MIS) and researching the Dynamics Between Technology Adoption and Tax Revenue Generation in Ghana employing the Fit-Viability model. Your opinion is of much essence to the study. I therefore humbly request that you participate in this study. Your participation is completely voluntary, and any information provided shall be treated confidentially and used solely for academic purposes. All questions and comments regarding this research should be directed to me via snabartels@st.ug.edu.gh and telephone number 0557370855 and also my supervisor Dr. Acheampong Owusu on aowusu@ug.edu.gh for further information. Thank you for your cooperation.

SECTION A

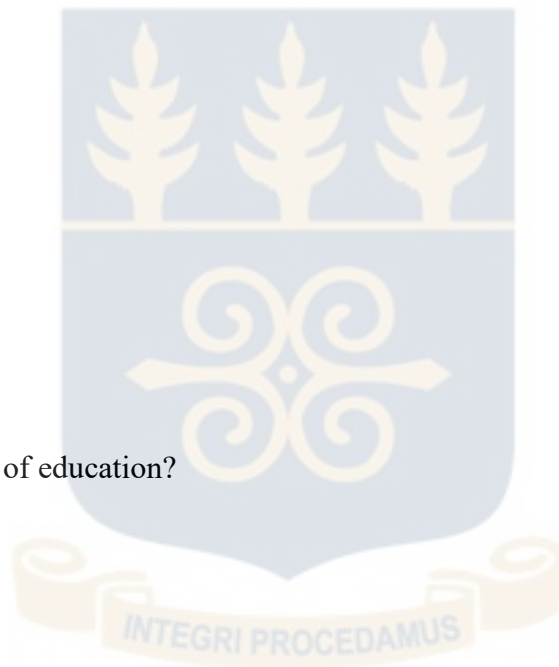
Socio-Demographic Characteristics and Academic Background

Please tick [] where appropriate.

1. Gender:
Male []
Female []

2. Age:
18 – 24 []
25 – 40 []
41 – 60 []
Above 60 []

3. What is your level of education?
Basic (JHS) []
SHS []
Diploma []
HND []
Bachelor []
Masters []
Doctorate []



UNIVERSITY OF GHANA

Please specify others

4. Role
Business owner []
Accounts personnel []

- HR** []
- Manager** []
- Operations & production** []
- Marketing / Sales officer** []
- Technology officer** []
- Project manager** []
- Finance manager** []
- Customer service** []
- Business Development** []

Others, please specify

5. Which business industry do you belong?

- Retail** []
- Health** []
- Manufacturing** []
- Education** []
- Mining** []
- Food processing** []
- Banking** []
- Textiles** []
- Chemicals and pharmaceuticals** []
- Small glass-making industry** []
- Agro-industries** []
- Music and Movie industry** []
- Oil and Gas** []
- Automobile** []

Others, please specify

6. Does your organization have an IT infrastructure capable of handling its own E-tax operations?

Yes []

No []

7. Which of the following IT Infrastructure are easily accessible in your organisation?

Desktop Computers []

Laptops []

Internet []

Printers []

Scanners []

Data Centre []

Remote connectivity []

Routers and APs (Access Point) []

Smartphones []

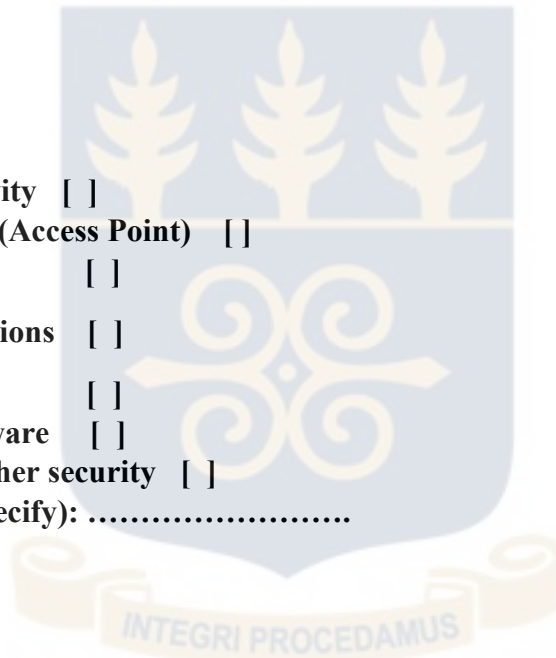
Software applications []

Switches []

Third-party software []

Anti-virus and other security []

Others (please specify):



8. What is the state of the IT infrastructure used by the organization?

In good shape for e-tax services []

Needs upgrade []

Must be completely Changed []

9. Which aspect of the IT infrastructure needs the most upgrade to be able to enhance e-tax adoption.

Hardware []

Software []

Telecommunications (Internet) []

10. Do you have policies, standards and guidelines in place regarding e-Tax systems usage?

Yes []

No []

If yes, please give details:.....

11. Do you have the Institutional capacity and capabilities to implement e-Tax system?

Yes []

No []

If yes, please give details:.....

Section B: The following questions seek to ascertain respondent's perception about the dynamics between technology adoption and tax revenue generation in Ghana.

Please show how you agree or disagree with the following statements

1=Strongly Disagree; 2=Disagree; 3=Neutral; 4=Agree; 5=Strongly Agree

	Construct	1	2	3	4	5
A	Fit factors (defines the qualitative measures of the e-tax process and its alignment with the user firm's capabilities, the ease of implementing the technology, and other initiatives)					
FT1	The e-tax process is consistent with organizational processes for tax filling					
FT2	I use the E-tax system because its requirements are within my capabilities					
FT3	Implementing the e-tax system is easy					
FT4	E-tax systems fits into organizational changes easily					
FT5	The is little need for systems upgrades to be able to use the e-tax system					

B	Task Characteristics (defines the features of tasks performed using e-tax systems)	1	2	3	4	5
TC1	Automation of tasks is possible through e-tax technology system					
TC2	E-tax filling systems provides remote implementation of tasks					
TC3	E-tax system supports multi-tasking					
TC4	E-tax system provides sharing of resources to perform tasks					
TC5	E-tax system tasks are easy to perform and deliver results to government					

B	Personalization (defines how the e-tax system can easily be adopted to the specific needs of the user)	1	2	3	4	5
PE1	The user interface of the E-tax system can be designed such that they adhere to your firms' requirements					
PE2	E-tax system Can be adjusted to the needs of users without a problem					
PE3	I may choose system modules that provide me the specific information I need for specific tasks					
PE4	Interacting with the e-tax computing services is not clear and difficult to understand.					
PE5	It takes too much time for IT staff if they want to use the e-tax system to do their normal duties					

C	Mobility (assesses issues relating to location for use of the systems)	1	2	3	4	5
MO1	E-tax technologies can be used or accessed anywhere					
MO2	E-tax system can be access at any time					
MO3	If I choose, I can have a permanent connection to the platform with any device, for instance, by mobile phone					
MO4	The e-taxing system is very reliable throughout the year					
MO5	Using the e-tax system everywhere does not affect security and ensure compliance to policies					

D	Collaboration (defines the use of information from E-tax system for decision making)	1	2	3	4	5

CO1	The e-tax system is not office-oriented, making it easy to work with others out of office on the same task					
CO2	I can collaborate with colleagues thanks to the e-tax technologies					
CO3	Information can be shared easily for engagement					
CO4	The finance head must have prior experience in e-taxation Applications to be able to use the system					
CO5	There is coordination among departments on the benefits of the e-tax system for collective work					

E	Viability (defines the quantitative impact of the other dimensions on adoption of e-tax system)	1	2	3	4	5
VI1	Using e-tax system is expensive to maintain					
VI2	Using E-tax systems requires too many upgrades to our current systems					
VI3	There is the need to retrain human resources to use e-tax systems					
VI4	Management support is vital to using the e-tax system					
VI5	The new e-tax system is capable of making tax-filing evolve					

F	IT infrastructure (defines the IT capability existing for e-tax system adoption)	1	2	3	4	5
IT1	The organization has the necessary technical requirements to using e-tax systems					
IT2	The organization has a good Internet connection speed for e-filing					
IT3	The organization is mature in using the Internet and related technology for tax purposes					
IT4	The organization needs to improve its computational capabilities to be able to perform E-tax duties					
IT5	The organization needs more computing equipment to meet its IT needs on e-taxation					

G	Economic (is the financial capacity of the implementing body and the system using firm)	1	2	3	4	5
EC1	Your organisation has been provided adequate budget to develop the e-Tax system					
EC2	Your organisation is provided adequate budget to maintain the e-Tax system					

EC3	e-Tax implementation as a technology requires special hardware, software, and expertise					
EC4	E-tax system adequacy enhance your ability to make contributions					

H	Organisation (defines the characteristics of the firm that enhance adoption of e-tax)	1	2	3	4	5
OR1	The organization needs little hardware for operating the e-tax computing system					
OR2	The management of the organization supports all decisions with adopting the e-tax filing system					
OR3	The organization must have integrated databases or a data warehouse					
OR4	The organization must have established policies on e-tax process management and security					
OR5	The organization should mature in using the Internet and related technology					

I	Individual (refers to the personal characteristics that impacts adoption of e-tax systems)	1	2	3	4	5
IN1	Your perceived fit of e-tax system to your task affects adoption level					
IN2	Your experience with E-tax system enhance your adoption					
IN3	Your experience with in using computers and mobile devices enhance your adoption of e-tax systems					
IN4	Expertise and training will enhance your use of e-tax system					
IN5	Personal perception affects adoption of e-tax system					

J	Adoption and revenue generation (defines the benefits expected from E-tax system adoption)	1	2	3	4	5
AR1	e-Tax improves tax compliance and increases performance					
AR2	Increased revenue generation is attributable to the e-Tax implementation					
AR3	e-tax systems fit your needs to be able to pay taxes easily					
AR4	Revenue can be enhanced with education of users on the e-tax systems					
AR5	High adoption will improve national economic outcomes					