ELECTRONIC PAYMENT SYSTEMS ADAPTATION AND REVENUE COLLECTION, MODERATING EFFECT OF CUSTOMER WORK EXPERIENCE AT NATIONAL WATER AND SEWERAGE CORPORATION UGANDA

BY

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DECLARATION

I **Atwiine Osbert**, do hereby declare that what is contained in this dissertation is my original work and has not been presented to any institution for the purpose of an academic award.

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APPROVAL

This is to certify that this dissertation by Atwiine Osbert is carried out under our supervision and is now ready for submission to the Directorate of Research and Graduate Training of Kyambogo University with our approval.

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DEDICATION

I sincerely dedicate this dissertation to my beloved spouse, Mrs. Atwiine Jacinta Carol, who has provided me with emotional, and spiritual support. Her devotion, love, and prayers have given me the confidence to succeed and be honored. May the Almighty God grant you a bountiful recompense.

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CVI:	Content Validity Index
EFT:	Electronic Fund Transfers
EPS:	Electronic Payment Systems
IDT:	Innovation Diffusion Theory
IMF:	International Monetary Fund
KCBD:	Kampala Central Business District
NWSC:	National Water and Sewerage Corporation
OECD:	Organisation for Economic Co-operation and Development
TPB:	Theory of Planned Behavior
TRA:	Theory of Reasoned Action
URA:	Uganda Revenue Authority
UTAUT:	Unified Theory of Acceptance and Use of Technology
CBD:	Central Business District

ABSTRACT

The study examined the effect of electronic payment systems adaptation on revenue collection, moderating effect of customer work experience at National Water and Sewerage Corporation. The study was guided by four objectives which included assessing the effect of customer exposure to electronic payment systems on revenue collection at NWSC, the effect of customer accessibility to electronic payment systems on revenue collection at NWSC, the influence of customer support mechanisms on revenue collection at NWSC and examining the moderating effect of customer work experience on the relationship between electronic payment systems adaptation and revenue collection at NWSC. The study employed a descriptive and cross-sectional research designs with both quantitative and qualitative research approach. The study considered sample size 399 participants which were determined following Slovin, R. (1960) formula but 311 managed to respond back showing a response rate of 78.0 percent. The respondents were selected using stratified simple random and purposive sampling technique. Data was collected using a closed-ended questionnaire and interview and analysis was done using Social Package for Social Scientists and content analysis to produce means, standard deviation, factory analysis, relationships and regression. The study findings revealed that customer exposure had a significant and positive relationship with revenue collection at (r = .422**, P< 0.01). Customer accessibility was also significantly and positively related with revenue collection at (.259**, P < 0.01). There was a relationship between customer support mechanisms and revenue collection at (r= .567**, P < 0.01). From the regression analysis, multiple regression showed that combined constructs of electronic payment system with its constructs Customer exposure, Customer accessibility, Customer support mechanism collectively accounted for 34.5% (Adjusted R Square = .345) of the variance in revenue collection. Using Beta values, the results also revealed a positive and significant effect customer exposure on revenue collection at (Beta = .254, $p=.000<0.05$). Customer accessibility, it positively predicted revenue collection at (Beta =.171, $p=.009$ <0.05). Customer support mechanisms was also found to be positively and significantly predicting revenue collection at (Beta =.508, $p=.000$ <0.05). It was revealed that customer work experience as a moderating variable between electronic payment systems adaptation and revenue collection at NWSC. This concluded that customer support mechanism is the major predictor of revenue collection at National water and sewerage Corporation. It was recommended that there is need to employ techniques such as anonymity and confidentiality in data collection to encourage participants to provide more genuine responses without fear of judgment or societal expectations, there is need for promoting openness and trust within the research environment, parliament should allocate resources towards improving the training and development of customer support representatives to ensure they possess the necessary knowledge and skills to effectively address customer inquiries and concerns, NWSC management should prioritize ongoing training and development programs for customer support representatives and NWSC management should focus on improving the accessibility and responsiveness of customer support channels, such as phone and email.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

Governments that have effectively delivered services, carried out infrastructure development, and achieved overall economic growth have done so largely through efficient revenue collection performance (Paper, 2019). Revenue collection is essential for governments worldwide, as it provides the necessary funds to finance public services, infrastructure, and socioeconomic programs, while also reducing reliance on debt and contributing to national economic stability (Ngotho & Kerongo, 2014). In utility companies, such as National Water and Sewerage Corporation (NWSC), revenue collection is critical for sustainability, ensuring operational costs are met, infrastructure is developed, and business expansion is possible. In 2011, NWSC adopted electronic payment system to ensure their data collection, however, despite the adoption, NWSC often face challenges in meeting their revenue targets and the collection has been always below 90% revenue collection leading to budget deficits and hindering service delivery (Balunywa, 2014, NWSC Annual Report, 2022, NWSC Annual Report, 2021). In light of these challenges, this study examined the effect of electronic payment systems adaptation on revenue collection, moderating effect of customer work experience at National Water and Sewerage Corporation.

This chapter gives information about the background to the study, historical, theoretical, conceptual and contextual background to the study, the problem statement, general objectives of the study, the research questions, hypotheses of the study, the conceptual framework, significance of the study, justification of the study, the scope of the study and the operational definitions.

1.1 Background to the study

This section captures the historical background, theoretical background, conceptual background and contextual background.

1.1.1 Historical Background

Revenue collection dates back to the Old Testament, where Israelites were instructed to offer thanksgiving offertories, the first fruits of their produce, and a tithe amounting to 10% to sustain religious institutions and support different church projects (Ladurie, 1966). These practices aimed to finance activities and initiatives such as feeding the poor.

Outside Church practices, Revenue Collection has been a central component of governance. The practice of levying taxes and collecting revenue can be traced back to ancient civilizations, the feudal systems that emerged in medieval times involved local lords collecting revenue from peasants, as explained by Bloch (1961), in the form of agricultural produce or labor to maintain their power and finance various endeavors. Rulers and governments in civilizations such as Mesopotamia, Egypt, Greece, and Rome imposed tributes and fees to fund public works, defense, and administrative functions (Ellis, 1974).

The evolution of revenue collection methods continued with the establishment of the modern tax system. Income taxes, sales taxes, property taxes, and other forms of levies became more prevalent in the 20th century, as described by Musgrave and Musgrave (1989). Governments refined their revenue collection practices to ensure compliance, establish fair taxation systems, and prevent tax evasion.

In Uganda, the Uganda Revenue Authority (URA) is in charge of Revenue Collection through collecting taxes like income tax, value-added tax, and excise duty, oversees all revenue collection streams Country wide. The government has also created a number of tax breaks to

entice foreign investment and promote the expansion of revenue base & the growth of national economy (Efobi, Beecroft, Belmondo, & & Katan, 2019).

In recent decades, technological advancements have revolutionized revenue collection practices. The widespread adoption of electronic payment systems, internet banking, and digital transactions has transformed the way governments collect revenue, as noted by Bhatnagar and Ghosh (2003). From ancient civilizations to modern times, revenue collection has evolved from traditional tribute systems and feudal arrangements to sophisticated tax systems, and now embraces technological innovations that streamline the process for governments, taxpayers, and other entities involved.

1.1.2 Theoretical Background

This study was guided by The Unified Theory of Acceptance and Use of Technology (UTAUT). Unified Theory of Acceptance and Use of Technology (UTAUT), was advanced by Venkatesh and Bala (2008), the theory assumes a robust framework that offers comprehensive insights into individuals' acceptance and adoption of technology. Four major factors i.e. performance expectancy, effort expectancy, social influence, and facilitating conditions are used by UTAUT to describe users' intention to use a technology. Performance expectancy is the term used to describe the expected advantages or benefits that users will sense from using the technology. The perceived simplicity and ease of use of the technology are related to effort expectancy. Social influence takes into account how other people's viewpoints may affect users' intentions to use a technology. The resources and enabling infrastructure that users can access to ensure successful technology adoption are referred to as facilitating conditions.

The strength of UTAUT theory is its capacity to offer a thorough comprehension of the factors influencing technology acceptance. UTAUT can provide important insights into the propensity

of taxpayers, businesses, and government agencies to accept electronic payment methods for revenue collection by taking these important elements into account. These observations might assist develop implementation plans and remove any obstacles that might prevent the use of electronic payment systems in revenue collection procedures.

1.1.3 Conceptual Background

Electronic payment system adaptation, revenue collection and customer exeperience are the main guiding concepts in this study.

Electronic payment system adaptation is the use of digital platforms and technology for carrying out financial transactions, such as payments, transfers, and purchases, electronically. It entails the use and integration of electronic payment methods by consumers, companies, and governments in order to provide safe, practical, and effective financial transactions. (BIS, 2018).

Electronic payment systems have undergone tremendous development, revolutionizing the financial industry and providing benefits including increased security, speed, and convenience (Smith & Fletcher, 2019). The effective use of electronic payment systems can have significant effects on public utility revenue collection. Electronic payment systems can increase the efficacy and efficiency of revenue collection by expediting payment procedures, decreasing manual interventions, and enhancing accuracy and timeliness (Abdullah, Gopalan & Hassan, 2018). Electronic payment system adaptation is operationalized into three dimensions of Exposure, Accessibility and Customer Support (Hargittai & Hinnant, 2008). Exposure as a concept in EPS refers to customers' awareness and familiarity with these systems, including their understanding of the availability and benefits of electronic payment options and how to effectively utilize them (Dholakia & Zhao, 2019). Accessibility to electronic payment system

is referred to as ensuring that the technology/system is available for all users without any barriers (Folmer & Bosch, 2004).

Customer work experience refers to the practical knowledge, skills, and expertise gained by individuals through their employment in a specific field or industry (Fugate et al, 2004). It encompasses the hands-on experience, professional development, and understanding of job responsibilities acquired through past and current employment (Fugate et al, 2004).

Revenue collection is the process through which a government or organization collects money or income from different sources, such as taxes, fees, levies, fines, and other types of payments. It is a fundamental component of public finance and is critical to supporting economic growth, funding public services, and running the government (IMF policy paper, 2019). Revenue collection is a critical function for public utilities, as it directly impacts their ability to maintain infrastructure, provide quality services, and meet operational costs (Rienties & Giesbers, 2019)

1.1.4 Contextual Background

National Water and Sewerage Corporation (NWSC) is a government owned utility company established in 1972 under the water statue decree No.34 and operates as a statutory corporation under the Ministry of water and Environment responsible for delivering clean water and sewerage services to the population of Uganda (NWSC, 2023). Currently, NWSC is serving 258 towns country wide, serving over 15million people, 85% coverage and covering about 20,000km with over 700,000 connections (NWSC, 2021). In addition, NWSC has future plans of having 100% service courage through SCAP100 program (NWSC 2021).

However, a number of issues, including high levels of non-revenue water, nonpayment by customers, ineffective billing systems, and a reliance on cash-based transactions, make it difficult for NWSC to collect revenue (Okello et al., 2020). The NWSC has recognized the potential of electronic payment systems and has witnessed improvements in revenue collection

percentages through their utilization. For example, in FY2021/2022, the NWSC reported an increase in revenue collection target achievement from 75% to 89% by leveraging electronic payment systems (National Water and Sewerage Corporation, 2021).

In order to improve revenue collection practices in public utilities, especially in the context of Uganda, the study aimed to offer insightful analysis and recommendations through a thorough examination of effect of electronic payment systems adaptation on revenue collection, moderating effect of customer work experience at National Water and Sewerage Corporation.

1.2 Statement of the problem

Globally, efficient revenue collection is considered a fundamental aspect of financial sustainability for government parastatals and public utilities. Developed nations such as the United States and European countries have achieved high revenue collection percentages, ranging in 90% (OECD, 2020). However much these countries have implemented advanced payment systems and technologies, there is still a gap to meet their expected targets.

Across Africa, revenue collection challenges persist in government parastatals and public utilities, leading to significant financial constraints and hampered service delivery. In South African, water utilities struggle with low revenue collection, ranging from 70% to 80% (Luhanga et al., 2021). In Kenya, revenue collection inefficiencies result in collection percentages as low as 50%, primarily due to high levels of non-revenue water (Mureithi et al., 2019).

In Uganda, the main state utility in charge of providing water and sewage services, in 2011 NWSC adopted the Electronic Payment System but continues to face difficulties in collecting revenue. Much as progress made in recent years, revenue collection percentages remain below optimal levels. NWSC has not been meeting its intended revenue collection targets for instance, in FY 2019/2020, the target was 534.5bn but the actual collected revenues was 391.0bn hence

registering an achievement of 75%, (NWSC Annual Report, 2020), in the FY2020/2021, the target was 557.0bn but the actual collected revenues was 434.5bn hence registering an achievement of 78% (NWSC Annual Report, 2021), then 89% was achieved in FY2021/2022 since the target was 521.7bn but the actual collected revenues was 468.8bn (NWSC Annual Report, 2022), and 86% was registered in FY22/23 because the target was 572.0bn but the actual collected revenues was 491.0bn . In addition, the Corporation has an average Response Rate to bill payments of 47% in FY 2021/2022 (NWSC Annual Report, 2021). Despite the efforts and strategies put in to improve on the Revenue collection including the use of electronic payment systems, the fact is that so much untapped potential revenue still exists has an effect on NWSC's capacity to sustain its finances and deliver dependable water and sewerage services.

Therefore, the purpose of this study was to examine the effect of electronic payment systems adaptation on revenue collection, moderating effect of customer work experience at National Water and Sewerage Corporation.

1.3 Purpose of the study

The purpose of the study was to examine the effect of electronic payment systems adaptation on revenue collection, moderating effect of customer work experience at National Water and Sewerage Corporation.

1.4 Objectives of the study

The study was guided by the following objectives:

i) To assess the effect of customer exposure to electronic payment systems on revenue collection at NWSC

ii) To examine the effect of customer accessibility to electronic payments system on revenue collection at NWSC

iii) To assess the influence of customer support mechanisms on revenue collection at NWSC

iv) To examine the moderating effect of customer work experience on the relationship between electronic payment systems adaptation and revenue collection at NWSC.

1.5 Research questions

The study sought to answer the questions below:

i) What is the effect of customer exposure to electronic payment systems on revenue collection at NWSC?

ii) How does customer accessibility to electronic payment systems influence revenue collection at NWSC?

iii) What is the influence of customer support mechanisms on revenue collection at NWSC?

iv) How does customer work experience moderate the relationship between electronic payment systems adaptation and revenue collection at NWSC?

1.6 Research hypotheses

Ho_1: There is no significant influence of customer exposure to electronic payments system on revenue collection at NWSC.

Ho_2: There is no significant influence of customer accessibility to electronic payment systems on revenue collection at NWSC.

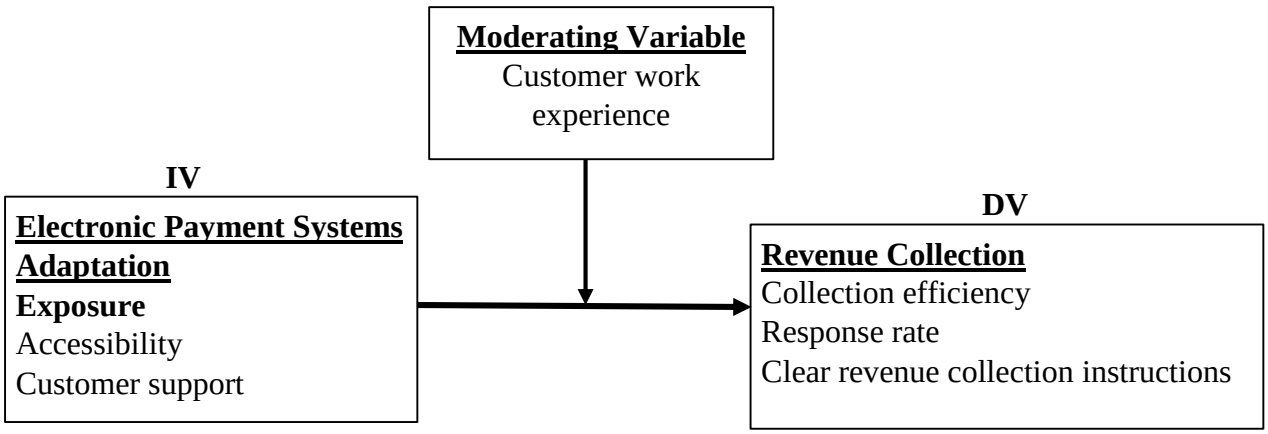
Ho_3: There is no significant influence of customer support mechanisms on revenue collection at NWSC.

Ho_4: There is no significant effect of customer work experience as a moderating variable between electronic payment systems adaptation and revenue collection at NWSC.

1.7 Conceptual framework

A conceptual framework is a theory's conceptual model that explains how many aspects that have been determined to be significant to the issue relate to one another logically (Sekaran, 2003). It is a fundamental framework made up of a few abstract building blocks that stand for the analytical, experiential, and observational facets of a process or system that is being conceptualized. These pieces work together to build the framework for some anticipated results (Green, 2001).

Figure 1: Conceptual framework



Source: *Based on Venkatesh et al., (2003), Mureithi et al., (2019), Chen and Wang (2018) modified by the Researcher*

The conceptual framework of this study on "*Electronic Payment Systems Adaptation and Revenue Collection*" comprises three indicators for independent variables: exposure, accessibility, and customer support. Exposure refers to the level of familiarity and awareness among potential users or organizations regarding electronic payment systems. Accessibility assesses how easily users can access and utilize electronic payment systems. Customer support focuses on the assistance and guidance provided to users during the adaption process. The study also includes dependent variable with indicators of: collection efficiency, clear revenue instructions, and response rate. Collection efficiency evaluates the effectiveness of electronic payment systems in facilitating seamless and timely revenue collection. Revenue collection clear instructions represent the guidelines set for revenue collection. The response rate

measures the rate at which users adopt electronic payment systems for revenue transactions. Moreover, the moderating variable, customer work experience, was considered to assess its impact on the relationships between the independent and dependent variables. By examining these connections, the study sought to offer important insights into how revenue collection procedures and electronic payment systems might be successfully used, as well as how this could help utilities' bottom lines.

1.8 Significance of the Study

Practical Implications for Revenue Collection in Public Utilities: The study will provide insights and recommendations to improve revenue collection practices, helping public utility organizations enhance efficiency, reduce transaction costs, and improve accuracy. This will contribute to the financial sustainability of public utilities and ensure reliable service provision.

Policy Development: The study's findings will inform policymakers in shaping regulations and incentives that promote efficient revenue collection practices. By considering factors such as customer exposure, accessibility, and support mechanisms, policymakers can design policies that encourage the adoption and effective utilization of electronic payment systems.

Academia and**:** The study will contribute to academic knowledge and provides insights for further research in the field.

Development Partners: The study will also support development partners in their initiatives to enhance revenue collection practices and financial sustainability in public utilities.

1.9 Scope of the Study

1.9.1 Content Scope

The content scope of this study is centered around assessing the influence of adapting an electronic payment system on the revenue collection at NWSC. Furthermore, this study investigated the role of customer work experience as an intervening variable in the effective

utilization of electronic payment systems for revenue collection. This addition enables a more thorough analysis of the elements that lead to the effective adoption and use of electronic payment systems inside NWSC, ultimately offering insightful information for better revenue collection and future decision-making.

1.9.2 Geographical Scope

This study specifically targeted the customers and staff for NWSC within the Kampala Water Central Business District Zone (CBD). This zone of NWSC was chosen because it is where the electronic billing system was first piloted and launched. By studying this zone, we gain meaningful insights into the early adaptation of electronic payment systems, understand its impact on revenue collection overtime.

1.9.3 Time Scope

This study considered the period from 2011 to 2022. In this period, NWSC had implemented the electronic payment systems to improve revenue collection. By examining the years following the implementation, the study can evaluate the long-term influence and effectiveness of the electronic payment system on revenue collection performance.

1.10 Definition of Key Terms

Electronic Payment Systems (EPS): According to Aburrous (2014), EPS are digital platforms that facilitate financial transactions via digital and online channels, including online banking, debit and credit cards, mobile payments, and electronic money transfers (EFT).

Accessibility refers to the ease of use and availability of EPS for customers, including factors like multiple payment channels, user-friendly interfaces, convenient payment options, and reliable network connectivity (Kim, 2019).

Exposure in the context of EPS refers to customers' awareness and familiarity with these systems, including their understanding of the availability and benefits of electronic payment options and how to effectively utilize them (Dholakia & Zhao, 2019).

Support in the context of EPS refers to the assistance, guidance, and resources provided to customers to facilitate their engagement with these systems, such as customer service, technical support, educational materials, and training programs (Suh & Lee, 2018).

Revenue refers to the total income earned by a water utility company through the sale of water to its customers and any additional charges (Barnes & Corbitt, 2013).

Revenue collection is a measure that compares the amount collected to the total amount invoiced in order to assess how well a water utility business is able to collect the entire amount billed from consumers within a given time frame (Boyle, 2014).

Customer satisfaction is a gauge of how successfully a water utility company satisfies the expectations of its clients and provides high-quality, dependable, and timely service (Gerson, 2017).

Operational efficiency is the extent to which a business can provide its services with low resource requirements and great productivity (Stonemetz & Wolf, 2018).

Bill: A bill is a document summarizing the total amount of money owed by a customer to a water utility company for water supply and related services, including itemized charges, due dates, and payment instructions (Barnes & Corbitt, 2013).

Customer work experience: Customer work experience refers to the practical knowledge, skills, and expertise gained by individuals through their employment in a specific field or industry. It encompasses the hands-on experience, professional development, and understanding of job responsibilities acquired through past and current employment (Fugate *et al.*, 2004)

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter provides an extensive analysis of the body of research on the use of electronic payment systems to improve revenue collection in public utilities. By looking at pertinent theories, models, and empirical studies that help explain the acceptance and utilization of electronic payment systems in revenue collecting procedures, the literature review seeks to provide a theoretical framework for the investigation. Through a comprehensive review and analysis of the literature, this section has determined the critical elements and variables that impact the collection of revenue for public utilities.

2.1 Theoretical Review

The study was directed by The Unified Theory of Acceptance and Use of Technology (UTAUT). A well-known theoretical framework developed by Venkatesh and Bala (2008) to explain the variables influencing people's adoption and use of technology. A number of current theories, including the Innovation Diffusion Theory (IDT), the Theory of Planned Behavior (TPB), and the Theory of Reasoned Action (TRA), are expanded and integrated by UTAUT.

Performance expectancy, effort expectancy, social influence, and facilitating conditions are the four main elements that affect people's behavioral intentions to embrace and use a technology, according to Venkatesh and Bala's (2008) UTAUT theory. The degree to which people believe that utilizing a specific technology improves their ability to execute their jobs or has other advantages is known as performance expectancy. The apparent ease of use and the amount of work necessary to operate the technology efficiently are related to effort expectancy. Social influence refers to how societal influences, including peer recommendations, affect a person's

inclination to utilize technology. The infrastructure, support, and resource availability required to encourage the use of technology are all considered facilitating conditions.

The UTAUT framework's key factors, namely performance expectancy, effort expectancy, social influence, and facilitating conditions, hold great relevance for studying electronic payment systems' implementation in revenue collection processes. Performance expectancy elucidates the extent to which individuals perceive electronic payment systems to enhance revenue collection efficiency and streamline financial transactions. Effort expectancy explores users' perceptions of the ease of using such technologies and the effort required to perform transactions. Social influence emphasizes the role of social factors, such as peer recommendations and support, in shaping individuals' intention to adopt electronic payment systems. The availability of resources and assistance required to enable the successful integration and use of these payment technologies is taken into account while creating facilitating conditions. By leveraging the UTAUT model as the theoretical foundation, this dissertation aims to delve deeper into the determinants of customer acceptance and usage of electronic payment systems in revenue collection for public utilities. The research findings are expected to offer critical insights and recommendations that can guide public utility organizations in optimizing their revenue collection processes, enhancing operational efficiency, and fostering successful adoption of electronic payment systems.

2.2 Conceptual Review

This section provides an overview of the major study variables.

2.2.1 Revenue Collection in Public Utilities

Revenue collection holds significant importance for public utilities, directly influencing their financial sustainability and ability to provide essential services (Li and Zhao 2015). Traditional revenue collection methods, such as cash or check payments, often face challenges like delays,

errors, and higher operational costs. Electronic payment systems offer potential solutions to overcome these issues and enhance revenue collection processes (Keni 2020).

Prior research has consistently shown that effective revenue collecting strategies improve public utilities' financial performance. Gupta and Kumar (2017) conducted a study on revenue collection practices in water supply companies and discovered that the use of electronic payment systems enhanced revenue collection rates and decreased revenue losses brought on by late or non-payment of bills (Mukherjee and Nath 2018). This suggests that electronic payment systems can enhance the overall financial stability and viability of public utility organizations.

2.2.2 Electronic Payment Systems Adaptations

Public utilities are among the industries where electronic payment systems have seen substantial growth, offering consumers quick and easy ways to make payments. Electronic payment systems allow users of public utilities, like water and sewerage services, to pay their bills online, via mobile applications, and through other digital means. The transition from manual to electronic payment methods may have a beneficial effect on revenue collection Charles (2022).

A multitude of studies have emphasized the benefits of electronic payment systems in public utilities. For example, a study by Jones et al. (2018) on the use of an electronic payment system in a water utility firm showed significant increases in the effectiveness of revenue collection. The convenience of electronic payments has been linked to decreased billing errors, quicker payment processing, and higher customer satisfaction, according to the study. In a similar vein, Smith and Johnson (2019) examined how electronic payment systems affected revenue collection in a municipal water authority and found that both total income and on-time payments had significantly increased.

2.2.3 Customer Exposure

The level of customer exposure to electronic payment systems plays a crucial role in determining its impact on revenue collection (Ward and Barnes 2001). Customer exposure refers to the awareness and familiarity customers have with electronic payment options. Several factors influence customer exposure, including access to information, technological literacy, and promotional efforts by utility providers.

Research has consistently indicated that increased customer exposure to electronic payment systems leads to higher adoption rates and improved revenue collection. Wang (2016) carried out a study on the adoption of electronic payment systems in the energy sector and found that customers exposed to informational campaigns and promotional activities were more likely to adopt electronic payment methods. Similarly, Lee and Lee (2018) examined the relationship between customer exposure to electronic payment systems and revenue collection in a municipal utility and observed a positive correlation, suggesting that greater exposure to electronic payment options resulted in increased revenue collection.

2.2.4 Customer Accessibility

Customer accessibility refers to the ease with which customers can access and utilize electronic payment systems (Folmer & Bosch, 2004). It encompasses factors like the accessibility of digital platforms, user-friendly interfaces, as well as compatibility with various devices. Improved customer accessibility to electronic payment systems can contribute to enhanced revenue collection by facilitating seamless and convenient payment processes.

Research consistently demonstrates that customer accessibility positively influences the adoption and usage of electronic payment systems. Chen and Zhang (2019) conducted a study on customer behaviour in mobile payment adoption and found that factors like ease of use, convenience, and the availability of multiple payment options significantly influenced

customer adoption of mobile payment systems. Comparably, Liu et al. (2020) looked into how client accessibility affected a public utility's ability to collect money and observed a positive relationship between customer accessibility and revenue collection efficiency.

2.2.5 Customer Support Mechanisms

Effective customer support mechanisms are essential to the accomplishment of successful deployment and utilization of electronic payment systems (Keni 2020). Customer support refers to the assistance provided to customers in understanding and resolving issues related to electronic payment methods, including technical support, troubleshooting, and customer service.

Research highlights the importance of customer support mechanisms in influencing customer satisfaction and adoption of electronic payment systems. Kim and Yoon (2019) studied how customer service affects consumer satisfaction in relation to the use of mobile payments and found that prompt and helpful customer support significantly increased customer satisfaction levels. Zhang et al. (2021) explored the importance of customer support in the electronic payment systems adaptation in the utility sector and identified customer support as a critical factor influencing customers' decision to use electronic payment methods.

2.2.6 Customer work experience

In addition to the previously discussed factors, customer work experience may moderate the association between electronic payment systems adaptation and revenue collection. Customer work experience refers to the level of familiarity and proficiency that customers possess in using electronic payment systems within the organization (Chen & Wang, 2018). It encompasses their knowledge of the system's functionalities, their ability to troubleshoot technical issues, and their overall comfort in handling electronic transactions.

Previous research suggests that customer work experience can influence the effectiveness of electronic payment systems in revenue collection. Chen and Wang (2018) investigated how customer's experience and knowledge affect the adoption of electronic payment systems in a utility company and found that customers with higher levels of customer work experience and expertise demonstrated greater efficiency in managing electronic payments, leading to improved revenue collection outcomes. This suggests that customer work experience can moderate the relationship between electronic payment systems and revenue collection, as customers with more experience are better equipped to handle the challenges and maximize the benefits associated with electronic payment systems.

Understanding the moderating role of customer work experience is essential for comprehensively assessing the impact of electronic payment systems on revenue collection. By considering customer work experience as a moderating factor, this study aims to examine how customers' experience, knowledge, skills, and comfort levels with electronic payment systems influence the effectiveness of revenue collection processes.

Furthermore, investigating customer work experience as a moderating factor provided insights into the role of customer training and support programs. These programs can enhance customer work experience by giving them the information and abilities they need to use electronic payment systems efficiently, potentially improving revenue collection outcomes.

In summary, customer work experience serves as a crucial moderating factor in the relationship between electronic payment systems and revenue collection. customer's knowledge, skills, and comfort levels with these systems can significantly impact the efficiency and effectiveness of revenue collection processes. In order to fully comprehend the connections between revenue collection and electronic payment systems adaptation in the context of the National Water and

Sewerage Corporation, this study sought to investigate the moderating influence of customer work experience.

2.3 Empirical Review

2.3.1 Customer exposure to electronic payment systems and revenue collection

Previous studies have highlighted the significance of customer exposure to electronic payment systems in influencing revenue collection outcomes. For example, Wang (2016) found that customers exposed to informational campaigns and promotional activities were more likely to adapt electronic payment methods in the energy sector. Similarly, Lee and Lee (2018) observed a positive correlation between customer exposure and revenue collection in a municipal utility. Thus, it is hypothesized that higher customer exposure to electronic payment systems can positively impact revenue collection in the National Water and Sewerage Corporation.

A study by Lwanga and Adong (2023) found that in Uganda, the adoption of mobile payment systems for tax and utility bill payments increased compliance and facilitated faster revenue collection for government agencies. Similarly, Shaikh et al. (2022) noted that customer exposure to secure and user-friendly electronic platforms reduces the administrative burden on revenue authorities, thereby cutting costs and minimizing errors associated with manual payment systems. This transformation leads to higher satisfaction rates among users and higher compliance rates, ultimately boosting revenue collection.

Moreover, electronic payment systems increase transparency in revenue collection, an essential factor in mitigating fraud and leakages. The automation of payment processes reduces human intervention, which is a common source of revenue mismanagement in traditional payment methods. A study by Birhanu and Tadesse (2021) in Ethiopia indicated that government institutions that adopted digital payment systems observed a 25% increase in revenue within two years, largely attributed to the improved traceability of funds and reduced opportunities

for corruption. Additionally, electronic payments foster real-time monitoring of transactions, allowing authorities to track revenue inflows more accurately and allocate resources efficiently. This level of transparency builds trust between service providers and customers, encouraging more individuals and businesses to engage with the system (Mungai & Odhiambo, 2023).

Another critical aspect of customer exposure to electronic payment systems is its impact on the accessibility of financial services for diverse demographics. Digital payment platforms provide access to underbanked populations, particularly in rural areas where traditional banking infrastructure is limited. As noted by Asongu and Nwachukwu (2022), the expansion of mobile payment services in sub-Saharan Africa has democratized access to financial services, allowing more individuals to participate in formal revenue collection processes. For instance, in Tanzania, the use of mobile money for tax payments has resulted in a 30% increase in tax revenues, especially from informal sectors (Mwangi & Muthoni, 2023). By reducing the barriers to participation, electronic payment systems not only enhance convenience for customers but also broaden the revenue base for governments and businesses.

2.3.2 Customer accessibility and revenue collection

The ease of customer access to electronic payment systems is crucial for their adaption and usage, ultimately affecting revenue collection. Chen and Zhang (2019) demonstrated that elements like usability, convenience, and availability of multiple payment options significantly influenced customer adoption of mobile payment systems. Liu (2020) found that the efficiency of revenue collection and consumer accessibility were positively correlated in a public utility. Based on these findings, it is anticipated that improved customer accessibility to electronic payment systems can enhance revenue collection in the National Water and Sewerage Corporation.

When revenue collection systems are easily accessible, more customers can engage with them, increasing compliance and expanding the revenue base. A recent study by Mutale and Phiri (2023) shows that in Zambia, enhancing accessibility to payment systems through mobile and online platforms led to a 15% increase in tax compliance within two years. Accessibility reduces the barriers that customers face when interacting with payment systems, such as the distance to collection centers, the complexity of processes, and time constraints. Digital platforms allow customers to make payments from anywhere at any time, thus promoting higher participation in revenue-generating activities.

Moreover, accessible payment systems ensure that marginalized and underrepresented groups, including rural populations and informal sectors, can contribute to formal revenue collection systems. As noted by Asiedu and Nwoke (2022), in Ghana, mobile payment platforms increased revenue from informal businesses, which previously operated outside the tax system due to inaccessibility. These platforms reduce the physical and logistical barriers associated with traditional revenue collection methods, enabling even small-scale enterprises to comply with tax obligations. By broadening the taxpayer base, accessible payment systems help governments increase their revenue streams without necessarily raising tax rates, as demonstrated by Mugisha and Akech (2021) in their study on the effectiveness of Uganda's e-tax system.

Accessibility to user-friendly and affordable payment options also enhances customer satisfaction, which is essential for sustained revenue collection. According to Kilonzo and Wamuthenya (2023), in Kenya, when customers perceive a system as easy to navigate and cost-effective, they are more likely to comply with revenue payment obligations. For instance, the integration of low-cost mobile money payment options in Kenya's utility billing system significantly increased on-time payments, reducing the rate of defaulters and arrears. This

convenience helps mitigate the friction that often discourages customers from paying their dues, thereby improving the overall efficiency of revenue collection processes (Osei & Mensah, 2023). In environments where accessibility barriers remain, such as in regions with low digital literacy or poor infrastructure, revenue authorities can experience significant shortfalls.

2.3.3 Customer support mechanisms and revenue collection

Effective customer support mechanisms have been recognized as critical factors in driving customer satisfaction and adoption of electronic payment systems (Said & Aziz, 2021). Kim and Yoon (2019) found that prompt and helpful customer support significantly increased customer satisfaction levels in the context of mobile payment adaptation. Zhang (2021) identified customer support as a crucial factor influencing customers' decision to use electronic payment methods in the utility sector. Therefore, it is expected that the presence of effective customer support mechanisms can positively impact revenue collection in the National Water and Sewerage Corporation.

Efficient customer support services ensure that customers have a seamless experience when interacting with revenue collection platforms, thus encouraging compliance. As noted by Opoku and Owusu (2023), in Ghana, the integration of 24/7 customer support for digital tax payment platforms significantly improved taxpayer satisfaction, leading to a 12% increase in voluntary compliance. Customers tend to engage more with revenue systems when they feel supported, especially when technical or procedural issues arise during payment processes. This highlights the importance of responsive support systems in minimizing transaction disruptions that could otherwise deter customers from fulfilling their revenue obligations.

Effective customer support mechanisms reduce the likelihood of payment errors, which can undermine revenue collection efforts. Studies show that when customers face technical issues,

such as failed transactions or incorrect billing, the lack of immediate support can result in delayed payments or non-compliance. A recent study by Makori and Nderitu (2022) found that in Kenya, the introduction of real-time customer assistance in mobile money tax payment platforms helped resolve payment issues promptly, reducing the error rate by 8% and boosting overall revenue collection. Ensuring that customers can access help quickly when issues arise enhances their confidence in the system and promotes higher engagement with formal revenue collection channels.

Additionally, customer support mechanisms help bridge the gap in digital literacy, a significant barrier to revenue collection in many developing economies. In regions where customers may lack the necessary knowledge to navigate digital payment systems, customer support can provide essential guidance. According to Guta and Solomon (2023), Ethiopia's federal tax authority increased tax revenue by 10% after establishing dedicated customer service centers that assist taxpayers in understanding and using digital tax filing systems. These centers also played a crucial role in educating users on the benefits of timely payments and how to use the system effectively, thus reducing misunderstandings that could lead to non-compliance. This type of educational support is particularly important for rural and less tech-savvy customers, who may find digital platforms challenging.

2.3.4 Customer work experience as a moderate in the relationship between electronic payment systems adaptation and revenue collection

Customer work experience plays a moderating role in the relationship between electronic payment systems adaptation and revenue collection. Chen and Wang (2018) found that customers with higher levels of experience and expertise demonstrated greater efficiency in using electronic payments in a utility company, leading to improved revenue collection outcomes. By considering customer work experience as a moderating factor, this study aims to

explore how customers' knowledge, skills, and comfort levels with electronic payment systems influence the efficiency of revenue collecting processes in the National Water and Sewerage Corporation.

As electronic payment systems become more widespread, the quality of customer work experience significantly influences how effectively these systems can be used to enhance revenue collection. According to Ndubisi and Nwankwo (2023), customer work experience is a critical factor that can either strengthen or weaken the relationship between electronic payment systems and revenue collection outcomes. Positive customer work experiences, characterized by user-friendly interfaces, efficient transaction processes, and prompt support, enhance customer satisfaction, which in turn encourages higher engagement with these payment systems, leading to increased revenue collection.

Research shows that when customers have positive experiences using electronic payment systems, they are more likely to adapt to these platforms for regular transactions, which boosts revenue collection. For example, a study by Maina and Otieno (2022) in Kenya revealed that when government agencies upgraded their EPS to improve user experience, including faster processing times and simplified payment processes, revenue collection increased by 18% within a year. This improvement underscores the moderating effect of customer work experience on the relationship between EPS adaptation and revenue collection. Customers are more willing to comply with payment requirements when the process is seamless and convenient, reducing delays and payment avoidance.

In contrast, poor customer work experiences can significantly hinder the effectiveness of electronic payment systems, diminishing the potential revenue that could be collected. If customers encounter issues such as system downtimes, complex navigation, or unresponsive customer support, they may revert to less efficient payment methods or avoid payments

altogether. This is evidenced in a study by Mugabe and Ndlovu (2023) in Zimbabwe, where poor user experiences with the national EPS led to a 10% drop in tax compliance over two years. These findings demonstrate that negative experiences create friction in the payment process, discouraging users from engaging with EPS and ultimately reducing the efficiency of revenue collection efforts.

Furthermore, customer work experience as a moderating factor also plays a crucial role in fostering trust and transparency in revenue collection systems. A positive customer work experience that offers real-time transaction confirmations, secure payment methods, and accurate record-keeping instills trust in the system, encouraging users to participate in electronic payment platforms. A study by Mwesigwa and Tumusiime (2022) in Uganda found that trust in the EPS system significantly influenced tax compliance rates, with customer work experience accounting for 35% of the variance in user trust. When users feel confident that their payments are processed correctly and that they can access clear records of their transactions, they are more likely to continue using the system, leading to sustained improvements in revenue collection.

2.4 Summary of literature

Chapter Two presents a concise literature review on the adaptation of electronic payment systems for revenue collection in public utilities. The review incorporates theoretical frameworks, empirical studies, and research findings to establish a theoretical foundation and identify key factors influencing revenue collection. Theoretical frameworks include the Unified Theory of Acceptance and Use of Technology. It explains elements affecting technology acceptance. Empirical studies highlight the benefits of electronic payment systems, such as improved efficiency, reduced errors, faster processing, and increased customer satisfaction in water utility companies. Revenue collection is crucial for public utilities'

financial sustainability, and electronic payment systems offer solutions to challenges associated with traditional methods. Studies demonstrate increased revenue collection rates and reduced losses with electronic payment systems. Customer exposure, accessibility, and support mechanisms play important roles in revenue collection. Studies show positive correlations between customer exposure, accessibility, and revenue collection. Customer work experience also moderates the relationship, as knowledgeable employees improve revenue collection outcomes.

Most of the literature reviewed was not conducted in Uganda and not even at NWSC, which means that the literature lacked the local Uganda context or perspective. Furthermore, some of the reviewed studies methodologically were qualitative in nature hence failing to clearly bring out the measurable effect of the independent variables to dependent variable. Therefore, this study was necessary to be bridge that gap by examining the electronic payment systems adaptation on revenue collection at National Water and Sewerage Corporation.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter provides the approach that was taken in order to successfully gather the data, analyze it, and complete the study. The sections covered the study population, research design, study location, sample size, data collection techniques, and data analysis.

3.1 Research design

The study utilized a descriptive and cross-sectional research design. The cross-sectional survey approach was employed because, in accordance with (Maryam Hemed 2015), it is simple to confirm or refute hypotheses, is inexpensive to carry out, and records particular times in time. Data collecting at one point in was the focus of the study. The research design made it possible for the researcher to quickly gather data and interpret the responses. Considering that the cross-sectional survey design was used, quantitative data was collected from a sample of the population at a certain point in time (Punch, 1998). In order to better understand a phenomenon, identify patterns in the behavior and attitudes of the study population, and generate hypotheses for further research in relation to the objectives, descriptive research design was also utilized in this study (Neuman, 2014).

3.2 Research Approach

The study used a mixed-methods research methodology that integrated quantitative and qualitative methods to give a more thorough grasp of the research subject. According to Tashakkori and Teddlie (2010), this approach allows for the use of multiple data sources, perspectives, and approaches to study the problem, thereby minimizing the limitations of using either approach in isolation. Additionally, mixing both approaches complementarily can lead to a more nuanced and in-depth comprehension of the research problem.

3.3 Study Population.

The study targeted active customers and staff at NWSC in Central Business District Zone. It targeted 11 staff of NWSC and 16,029 Kampala Water CBD Customers totaling to 16,040 (NWSC Annual Report, 2022). In this study, unit of analysis was NWSC branches in the CBD zone while the unit of inquiry was the customers and some selected staff members of NWSC.

3.4 Sample Size Determination

A total sample size of 399 respondents from a population of 16,040 was selected based on Slovin, R. (1960) sampling guide formula as below:

$n = N / (1 + N(e^2))$ where: n is the required sample size, N is the population size and e is the desired margin of error (expressed as a proportion)

Assuming a desired margin of error (e) of 5% (0.05) and a population size (N) of 16,040.

Table 3.1: Sample size distribution

Category	Population	Sample size
Staff		
Commercial Officers Collections in CBD	7	7
Branch Managers in CBD	4	4
Customers		
Industrial-Area branch Customers	4,317	105
Kamwokya branch Customers	4,633	112
Kisenyi branch Customers	3,680	89
Nakasero branch Customers	3,399	82
Total	**16,040**	**399**

Source: NWSC (2022)

3.5 Sampling techniques

The process of selecting subjects or cases to be included in a sample is referred to as sampling, as defined by Mugenda and Mugenda (2003). For this study, a combination of stratified random sampling, and purposive sampling methods was used to select the study samples.

3.5.1 Stratified random sampling

The population of customers was separated into subgroups (strata) based on which branch in the zone each participant belongs for the study, which employed stratified random sampling. It was done in this way to guarantee that each stratum is fairly represented (Lohr, 2019).

3.5.2 Purposive sampling

The study employed the purposive sampling technique, which is a non-probabilistic sampling technique was employed to select respondents with specific characteristics. In this case, the respondents were the Commercial Officers in the billing and collections department and Branch Managers at Kampala Water CBD Zone, chosen for their expertise and experience in billing and payments at NWSC. The purposive sampling method was appropriate in this study because it helped the researchers to collect informative data from a smaller group of key informants (Sekaran, 2003).

The advantage of purposive sampling is that it ensures the selection of participants with the necessary knowledge and experience to provide valuable insights into the research problem. By exercising discretion in the selection process, the researcher can identify the most relevant and informative sample. However, the limitation of this technique is that it may introduce bias into the sample selection process, leading to a potential lack of generalizability of the findings beyond the selected sample.

3.6 Data collection methods

The study employed the questionnaire survey, interviewing and document review methods for data collection.

3.6.1Questionnaire survey

The primary technique for collecting primary data was through utilizing a questionnaire survey method. This method is favored for its ability to yield a high response rate and is extensively utilized in surveys to gather data from respondents in the shortest time (Mugenda & Mugenda, 2013). The questionnaire survey was selected due to its cost-effectiveness and ability to uphold confidentiality. This method was used on customers.

3.6.2 Interviewing

The study employed the interview method to gather in-depth insights into the research variables. This approach involved direct, face-to-face interactions between the researchers and the staff of NWCS, allowing for the collection of rich, detailed information (Leedy & Ormrod, 2015). To guide the interviews, a well-structured interview guide was developed, ensuring consistency in the data collection process. The use of interviews was particularly advantageous because it allowed for the inclusion of probing questions, enabling the researchers to explore responses more deeply and clarify complex issues. This method was well-suited for obtaining qualitative data, as it facilitated a more nuanced understanding of the participants' perspectives, experiences, and insights, ultimately leading to more robust and comprehensive findings. The personal interaction also encouraged respondents to provide candid and detailed responses, enhancing the overall quality of the data collected.

3.6.3 Document review

Document review was also used to collect data related to cases of revenue collection at NWSC. This was so because if the researcher misses analyzing such documents, a lot of data pertaining revenue collection at NWSC for the past years would have been missed which could have resulted into the dependent variable to be deeply excavated.

3.7 Data collection tools

3.7.1 Questionnaires

In this study, a questionnaire was used, consisting of closed-ended questions arranged on Five-Point Likert Scale that allowed the collection of quantitative data. The respondents provided specific answers to a set of predetermined questions. These were administered to customers of NWSC at Kampala Branch in the Central Business District.

3.7.2 Interview Guide

According to Amin (2005) interview guide highlights that open-ended questions are commonly used in interviews to allow respondents the freedom to express their thoughts in detail. In this study, the researcher conducted oral interviews with employees from the billing and revenue department of Kampala Water CBD zone. These interviews were designed with open-ended questions to ensure that participants could provide comprehensive and nuanced responses. The use of this approach allowed for direct interaction between the researcher and respondents, fostering a more in-depth understanding of the issues being studied. Additionally, the carefully structured questions helped ensure consistency and reduce potential biases, enhancing the reliability of the data collected. This method also created an opportunity to explore respondents' insights more fully, making it a valuable tool for gathering qualitative data.

3.7.3 Document review

A document review guide was used to guide collection and analysis of secondary data. The researcher reviewed financial reports at NWSC-CBD zone to get information regarding revenue for a period from2011-2022. This period was considered because its when NWSC adopted the electronic payment system.

3.8 Data Quality Control

Quality control examines the validity and reliability of the tools used for data collection.

3.8.1 Validity

Validity pertains to the extent to which study findings precisely mirror the phenomenon being studied. The researchers in this study sought professional opinion from their supervisors to confirm the validity of the research instruments. Each item in the instruments was graded as either relevant or not relevant by two supervisors who were asked to assess each item's relevance to the research objectives. The Content Validity Index (C.V.I.) was then computed to determine validity. “The C.V.I. is calculated as the number of items rated relevant by both judges divided by the total number of items in the questionnaire”. To meet the recommended standard for validity set by Amin (2005), “the C.V.I. should be at least 0.7”. The C.V.I was calculated as displayed in Table 3.2 below.

Table 3.2: Content Validity Index

Particulars	**1st Score**	**2nd Score**	**3rd Score**	**Average Score**
Number of Total items	25	25	25	25
Number of Valid Items	22	23	23	22.3
Content Validity Index	0.88	0.92	0.92	0.89

Table 3.2 indicates an average content validity index of 0.80 analyzed using three rankings from two supervisors. Therefore, the tool was accepted as legitimate and put to use in collecting data after obtaining a score of 0.89.

3.8.2 Data Reliability

Reliability refers to the consistency of study findings obtained from a particular instrument over time (Sekaran, 2003). The research tools utilized in this study were pilot-tested twice on the same subjects at a four-week interval in order to determine their reliability. Amin (2005) recommends “using the test-retest method to determine whether an instrument can produce consistent scores when measuring the same group repeatedly under the same conditions”.

Modifications were made to the instrument items based on the pilot test results. The researchers used a Cronbach's Alpha reliability test on the Likert-type scales to confirm the validity of the quantitative data. This statistical measure evaluates a psychometric test score for a sample of examinees' internal consistency or reliability. Many professionals require a reliability coefficient of at least 0.70 before using an instrument (Sekaran, 2003). The overall reliability test of the instrument used in this study resulted in an alpha of 0.843, which is above the recommended threshold of 0.70. Therefore, the questionnaire instrument was used in the study as it had an average alpha above 0.7, as recommended by Cortina (1993).

3.9 Measurement of Variables

Electronic payments systems Adaptation in the study were measured basing on the indicators of Exposure, Accessibility and Customer support as advanced by scholars like (Venkatesh, 2003). The measurement of the variables were ranked on the 5-point scale ranging from 1 (strongly Disagree) up to 5 (strongly Agree).

Customer work experience in the study was measured basing on the years of experience of the customers, knowledge of the business in terms of using electronic payment systems and revenue collection as advanced by scholars like (Venkatesh, 2003).

Revenue Collection in this study was measured basing on the 3 dimensions of Collection Efficiency, Response Rate and Clear revenue collection instructions achievements as suggested by scholars like (Martinez-Vazquez & McNab, 2003). The measurement of the variable was ranked on the 5-point scale ranging from 1 (strongly Disagree) up to 5 (Strongly Agree).

3.10 Data Analysis and presentation

Both quantitative and qualitative data analysis was done..

3.10.1 Quantitative data analysis

This study used descriptive statistics to analyze the quantitative data. This required calculating frequency distributions, percentages, and central tendency metrics like mean, median, and standard deviation. The data was carefully checked for errors, assigned codes, and entered into SPSS 23 for analysis. The researcher was assisted in analyzing, interpreting, and turning the data collected into relevant information by descriptive statistics like mean and standard deviations. Pearson's correlation coefficient was used by the researcher to determine linear association between variables and also multiple regressions run to ascertain the predictability of the independent variables on dependent variable. The study also conducted the factor analysis to uncover concealed patterns, associations, and dimensions within a dataset. The findings were presented in tables that show the responses for each category of variables in a comprehensive manner.

3.10.2 Qualitative data analysis

The qualitative data were analyzed utilizing both thematic and content analysis in the study, with an emphasis on their applicability to the research questions. A thematic analysis was conducted to identify themes, and content analysis was utilized in the study to synthesize the data into more meaningful and succinct words. The data was organized and classified in a manner that corresponds with the quantitative data. The study included explanations and descriptions based on the knowledge gathered from the data, and respondent quotes were used to bolster the conclusions.

3.11 Ethical Considerations

The ethical guidelines for this study were derived from Amin's (2005) recommendations to conduct research with integrity and to uphold higher moral values. To ensure confidentiality, the identities of individuals from whom information was obtained during the study was kept

strictly confidential. In addition, customers and staff were not included in the study without them freely giving consent to participate. The University provided the researcher with an official letter of introduction, allowing them to gather data from respondents solely for academic purposes.

3.12 Limitations of the Study

Social desirability bias: One limitation surfaced was social desirability bias, which could impact the accuracy of self-reported data. This bias tends to be more pronounced in contexts where participants are dealing with sensitive subjects or striving to present themselves favorably. Most respondents did not want to share their knowledge and understanding of electronic payment systems with fear to be judged however, the researcher clearly explained how important it was to give correct information.

Confidentiality: This research hinged on the voluntary involvement of customers and staff, a factor that introduced potential concerns related to the disclosure of personal or financial information. However, a copy of the introduction letter from Kyambogo University was attached to the questionnaire that gave a detailed explanation of the study's objectives and this built confidence in the respondents.

Self-reporting Bias: Since the study was about revenue collection, some respondents with outstanding bills and some with unpaid fines for National Water and Sewerage Corporation feared to self-report thinking the researcher is a national water staff coming to disconnect them. However, the researcher gave detailed explanation to the respondents about the objectives of the study and what it intends to achieve.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND INTERPRETATION OF STUDY FINDINGS

4.0 Introduction

The chapter displays the findings of the study as generated from the field based on the demographic features of the respondents and study objectives assessing the effect of customer exposure to electronic payment systems on revenue collection, the effect of customer accessibility to electronic payment systems on revenue collection, the influence of customer support mechanisms on revenue collection and the moderating effect of customer work experience on the relationship between electronic payment systems adaptation and revenue collection.

4.1 Response Rate

The researcher targeted a total number of 399 participants and of which 311 managed to respondent to the study hence achieving the response rate of 78 percent. This exceeded the threshold of 70 percent, as advised by the (Guttmacher Institute, 2006).

4.2 Demographic characteristics of the respondents

The findings below are the demographic characteristics of the respondents in the study.

4.2.1 Sex of the respondents

Results in Figure 2 below present the sex of the respondents

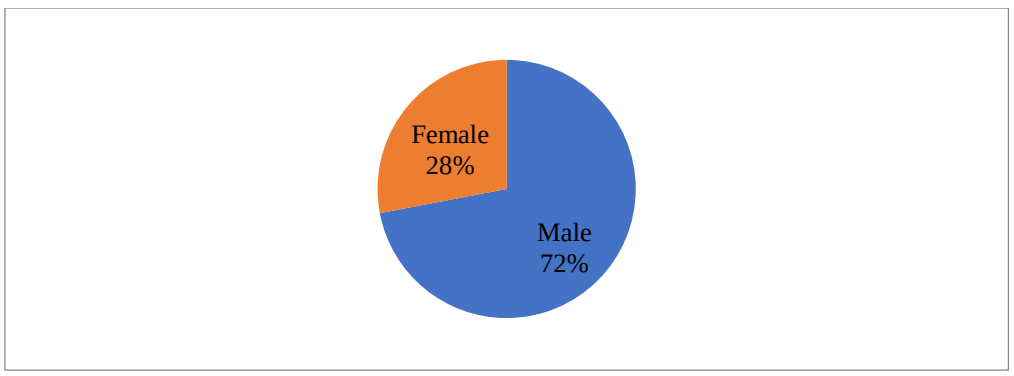


Figure 2: Sex of the respondents

Source: Primary data (2023)

Figure 2 above indicates that 72 percent were Male while 28 percent were female. This implies that men dominated this study. This could be due to the reality that most of water meters are registered in the name of the men who are heads of the family. However, the findings revealed that the views of both men and female respondents were considered in the study.

4.2.2 Age of the respondents

Table 4.1 below presents the age of the respondents

Table 4.1: Age of respondents

Category	Frequency	Percent
20 - 30 years	58	19
31-39 years	133	43
40-49 years	81	26
Above 50 years	39	12
Total	**311**	**100**

Source: Primary data (2023)

The results of Table 4.1 indicate that 43 percent of the respondents were aged ranging from 31 and 39 years, this followed by respondents aged ranging from 40–49 years (26 percent), 20-30 years (19 percent) and lastly, those aged above 50 years and above (12 percent). This shows that major of the respondents were of age and could understand the questions asked

4.2.3 Level of Education

Table 4.2 below presents the respondents' level of education.

Table 4.2: Respondents' level of education

Category	Frequency	Percent
None	07	2
Degree	133	43
Diploma	90	29
Certificate	75	24
Masters	6	2
Total	**311**	**100**

Source: Primary data (2023)

The results presented that 43 percent had a degree as the highest level of learning followed by 29 percent who had a Diploma. Furthermore, 24 percent had a certificate, 2 percent had no level of education and also 2 percent who had a master's qualification. This suggests that the vast majority of participants that is 98 percent possessed a measurable degree of education. Therefore, they were in good position to understand the research question and could give reliable answers.

4.2.4 Time as NWSC Customer

Table 4.3 below shows the time taken by respondents as customers of NWSC

Table 4.3: Time as NWSC Customer

Category	Frequency	Percent
Less than 3years	41	13
4-6 years	115	37
Above 6 years	155	50
Total	**311**	**100**

Source: Primary data (2023)

Table 4.3 findings showed that the majority of respondents at 50 percent formerly been NWSC customers for 6 years and beyond, 37% of the total participates had been NWSC customers for 4-6 years, while 13% had only been NWSC customers for less than 3 years. According to these

findings, the majority of respondents had used NWSC services for a considerable period of time, putting them in a good position to provide accurate responses.

4.2.5 E-payment channels frequently used

Table 4.4 below presents the E-payment channels used by customers

Table 4.4: E-payment channels frequently used

Categories	Frequency	Percent
Mobile Money	259	83
E-banking	43	14
Electronic Transfers	9	3
None	0	0
Total	**311**	**100**

Source: Primary data (2023)

The results indicate that the majority of those surveyed 83 percent frequently use Mobile money services for payments followed by 14 percent who use the e-banking services and lastly electronic transfers were represented by 3 percent. This demonstrates that every study participant had firsthand experience of the e-payment channels established by NWSC and majority were using mobile money because of it being convenient and easy accessible.

4.2.6 Services acquired from NWSC e-payment channels

Table 4.5 below presents the Services acquired from NWSC e-payment channels

Table 4.5: Services acquired from NWSC e-payment channels

Category	Frequency	Percent
Paid an outstanding bill	164	53
Paid for a new water application	60	20
Access to an account statement	58	18
Paid a penalty (e.g illegal connection)	29	9
Total	**311**	**100**

Source: Primary data (2023)

The research results indicate that the majority of the respondents 53 percent had paid an outstanding bill through the NWSC e-payment channels, followed by 20 percent who had paid for a new water application while 18 percent had access to an account statement through e-payment channels while 9 percent of the respondents had used the e-payment channels to pay for a penalty. The findings show that all respondents had acquired services through NWSC e-payment channels.

4.2.7 Customer Branch

Figure 2 below presents the customer branch for the respondents that took part in the study.

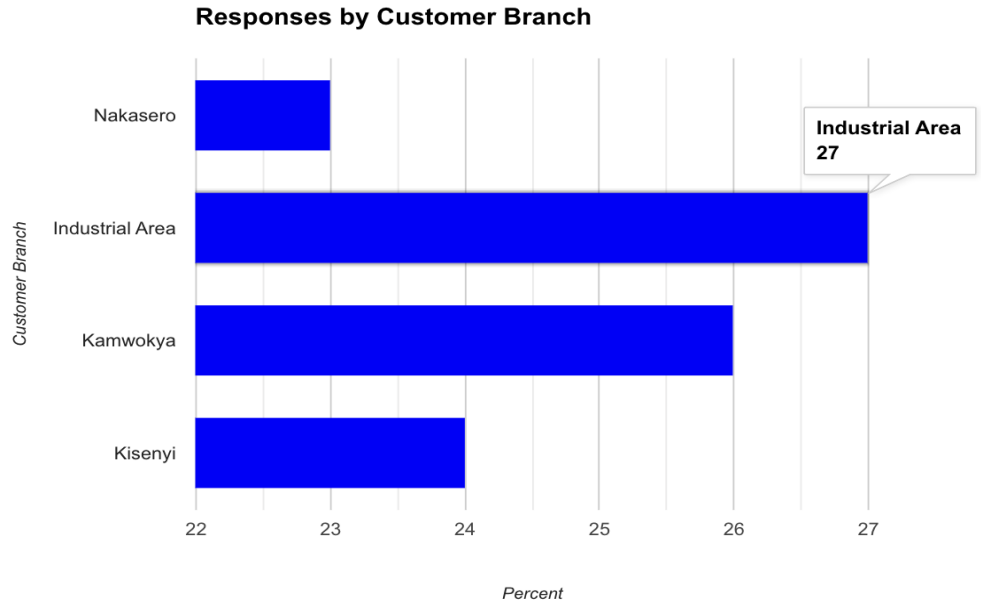


Figure 3: Customer Branch

Source: Primary data (2023)

The findings in Figure 3 demonstrate that majority 27 percent of the respondents were Industrial service branch followed by those from Kamwokya at 26 percent and Kisenyi 26 percent and lastly those from Nakasero at 23 percent.

4.3 Descriptive Statistics on Study Variables

The feedback from the numerous statements under each of the research objectives is provided below under descriptive statistics and the corresponding correlation analysis, which the

researcher can use to gauge the goals that were developed and directed the study. Following the guidelines provided by the questionnaires' 5-point Likert rating scales, the researcher classified the data gathered as follows: 5=Strongly Agree, 4=Agree, 3=Uncertain, 2=Disagree, 1=Strongly Disagree

Table 4.6: Represents the Descriptive Statistics of the study variables

Variable list	Min	Max	Mean	St. Dev
Customer exposure				
I am aware of the electronic payment options available	2	5	4.0	.457
I have information about the benefits and features of electronic payment systems.	2	5	4.0	.700
I have received training or guidance on how to use electronic payment systems.	1	5	3.3	1.021
I perceive electronic payment systems as convenient and user-friendly for conducting transactions.	2	5	4.2	.765
Grand Mean and SD			**3.9**	**.736**
Customer accessibility				
Electronic payment systems offer a variety of payment options (e.g., agent banking, bank transfer, mobile money).	1	5	3.7	.598
I receive timely notifications and reminders about payment due dates through electronic payment systems.	1	5	3.5	1.158
I can quickly access my payment history and receipts through electronic payment systems.	1	5	2.9	.949
Electronic systems provide security measures, to safeguard financial information and secure transactions.	1	5	3.7	.985
Grand Mean and SD			**3.5**	**.923**
Effectiveness of customer support mechanisms				
Customer support representatives are knowledgeable & helpful.	1	5	3.4	.868
Response times for inquiries are prompt.	1	5	2.8	1.127
Customer support channels are easily accessible (phone, email)	2	5	3.4	.929
I receive regular updates regarding inquiries.	1	5	3.6	.906
Grand Mean and SD			**3.3**	**.958**
Customer work experience				
I am confident that my customer work experience makes me well-equipped to handle the challenges associated with electronic payment systems at NWSC	1	5	3.5	.547
I have received formal training on how to use electronic payment systems of NWSC	1	5	2.0	.991
I am extremely familiar with the electronic payment systems at NWSC.	1	5	3.9	.697
My customer work experience has provided me with valuable insights into optimizing the benefits of electronic payment systems of NWSC	1	5	3.5	.556
Grand Mean and SD			**3.2**	**.698**
Revenue Collection				.
NWSC has efficient systems for revenue collection.	1	5	3.8	.970
NWSC actively follows up on outstanding payments.	1	8	3.2	1.210
NWSC addresses payment discrepancies or errors	1	7	3.3	1.077
NWSC provides clear instructions on payment methods	1	6	3.7	1.170
Grand Mean and SD			**3.5**	**1.107**

Source: Primary data (2023)

From the Table 4.6 above, results indicate that **Customer exposure** to electronic payment systems was found to be essential having scored a high grand mean of (3.9) and the standard deviation equivalent (.736). The most significant item that was people perceives electronic payment systems as convenient and user-friendly for conducting transactions. Regarding **Customer accessibility to electronic payment systems**, it was regarded as essential since it scored a grand mean of (3.5) and standard deviation equivalent (.923) and the most significant were that electronic payment systems offer a variety of payment options (e.g., agent banking, bank transfer, mobile money) and electronic systems provide security measures, to safeguard financial information and secure transactions. Regarding **customer support mechanisms** was also regarded as essential with the high grand mean of (3.3) and standard deviation equivalent (.958) and the most significant factor was that people receive regular updates regarding inquiries. **Customer work experience** was also essential since it scored a moderate grand mean of (3.2) and standard deviation equivalent or below (.698) and the most essential item was that people were extremely familiar with the electronic payment systems. On the issue of **Revenue Collection**, it was significant having scored a grand mean of (3.5) and standard deviation equivalent (1.107) and the most significant items were that NWSC has efficient systems for revenue collection and it provides clear instructions on payment methods.

Furthermore, the researcher collected the qualitative data; using these three questions, the researchers conducted eleven interviews, with the themes listed below.

When asked, “How do you ensure that customers are aware of the benefits and advantages of using electronic payment systems?” Majority of interviewees at NWSC suggested that most of Customers get communication and updates about electronic payment channels through SMS, community WhatsApp forums, radio, stakeholder sessions in communities and whenever meter readers go to the visit their premises.

> "…..*Customers now prefer paying through mobile money as soon as the meter reader informs them of their billing details and how to use electronic payment options*" (Interviewee, 005)

When asked, "What steps can NWSC take to improve the accessibility of electronic payment systems for our customers?" majority of respondents at NWSC suggested; customer education on benefits, support opening up of more agents in the last mile connected areas.

> "*…customers enjoy a technology that can be accessible near to them and is operational most of the day or 24/7, has to very affordable in terms of transaction and access costs, as well as solving their issues wholesomely."* (Interviewee, 002).

When asked? How do you provide support to customers who encounter issues or have questions related to electronic payment system?" majority of interviewers listed; the available toll free contact helpline that is attended to 24/7, in addition to the NWSC App and social media platforms and one of the respondents revealed that;

> "*….there are now multiple channels available to the Customer to contact NWSC offices for any support. The Customer care team is very equipped with the skills to handle all customer related concerns.*" (Interviewee, 001).

4.4 Secondary data on the Revenue Collection

The researcher extracted the secondary data regarding the revenue collection at NWSC from the period of 2011-2022

Table 4.7: Secondary data on the Revenue Collection

Year	Kamwokya Branch		Industrial Branch		Kisenyi Branch		Nakasero Branch		Total CBD Zone	
	Target	Collection	Target	Collection	Target	Collection	Target	Collection	Target	Collection
FY 2011/2012	8,267,453,140	2,639,273,372	13,876,932,398	12,164,973,575	8,669,884,340	7,339,637,759	13,304,569,031	13,118,735,495	44,118,838,909	35,262,620,200
FY 2012/2013	7,813,242,199	2,920,066,043	16,214,989,535	13,846,337,915	10,984,114,959	10,088,914,187	15,435,192,673	13,309,670,447	50,447,539,367	40,164,988,591
FY 2013/2014	7,865,273,754	4,296,291,167	17,202,747,829	15,103,974,563	12,295,630,886	10,864,426,151	16,719,068,709	16,788,993,443	54,082,721,177	47,053,685,323
FY 2014/2015	8,431,635,664	5,193,814,966	18,381,630,077	16,359,997,438	12,995,934,723	13,625,584,055	17,348,150,334	18,328,255,907	57,157,350,798	53,507,652,366
FY 2015/2016	10,354,019,717	7,123,878,574	21,902,429,592	20,036,131,738	16,714,949,877	14,286,503,879	22,019,494,551	22,897,056,755	70,990,893,737	64,343,570,946
FY2016/2017	9,677,048,135	6,784,443,634	22,187,734,051	23,615,932,258	17,520,824,067	16,567,014,851	23,226,632,354	23,964,894,143	72,612,238,607	70,932,284,886
FY 2017/2018	10,412,195,810	7,850,325,058	24,273,259,663	22,535,522,818	18,838,241,551	16,331,668,823	24,588,734,360	25,212,871,499	78,112,431,384	71,930,388,198
FY 2018/2019	13,478,541,442	11,422,089,250	26,102,856,001	23,029,191,551	22,003,383,869	16,740,848,111	27,311,373,324	17,563,787,339	88,896,154,636	68,755,916,251
FY 2019/2020	10,428,279,436	5,730,686,735	18,758,096,839	18,236,312,087	11,953,597,316	9,753,241,355	16,184,735,676	22,353,349,835	57,324,709,267	56,073,590,011
FY 2020/2021	13,703,640,450	8,136,231,863	22,352,316,295	23,268,032,086	15,803,941,058	13,313,894,495	28,782,168,972	29,736,357,863	80,642,066,775	74,454,516,307
FY2021/2022	16,875,251,220	8,328,117,178	24,945,132,629	22,535,611,162	19,585,449,499	18,953,138,494	24,629,540,296	39,479,929,583	86,035,373,645	89,296,796,418

4.5 Factor analysis

The researcher performed factor analysis to uncover concealed patterns, associations, and dimensions within a dataset, with the goal of diminishing dimensionality and enhancing the interpretability and trustworthiness of research findings. By identifying latent variables and simplifying complex data structures, factor analysis facilitates decision-making processes, fostering heightened focus and understanding. The subsequent table displays the results of the factor analysis for Customer exposure, Customer accessibility, Customer support mechanism, Customer work experience, and Revenue collection.

Table 4.8: Factor analysis Results

Items	**Customer exposure**	**Customer accessibility**	**Customer support mechanisms**	**Customer work - Revenue collection**
I am aware of the electronic payment options available	.865			
I have information about the benefits and features of electronic payment systems.	.897			
I have received training or guidance on how to use electronic payment systems.				
I perceive electronic payment systems as convenient and user-friendly for conducting transactions.	.781			
Electronic payment systems offer a variety of payment options (e.g., credit card, bank transfer, mobile money).		.702		
I receive timely notifications and reminders about payment due dates through electronic payment systems.		.730		
I can quickly access my payment history and receipts through electronic payment systems.		.561		
Electronic systems provide security measures, to safeguard financial information and secure transactions.		.598		
I am confident that my customer work experience makes me well-equipped to handle the challenges associated with electronic payment systems at NWSC			.671	
I have received formal training on how to use electronic payment systems of NWSC			.562	

I am extremely familiar with the electronic payment systems at NWSC.			.725		
My customer work experience has provided me with valuable insights into optimizing the benefits of electronic payment systems of NWSC			.630		
I am confident that my work experience makes me well-equipped to handle the challenges associated with electronic payment systems				.599	
I have received formal training on how to use electronic payment systems				.818	
I am extremely familiar with the electronic payment systems				.527	
My work experience has provided me with valuable insights into optimizing the benefits of electronic payment systems at NWSC				.590	
NWSC has efficient systems for revenue collection.					.902
NWSC actively follows up on outstanding payments.					.824
NWSC addresses payment discrepancies or errors					.733
NWSC provides clear instructions on payment methods					.837
Eigen Values	**2.9**	**2.9**	**1.4**	**1.5**	**1.2**
Variance (%)	**71.9**	**64.8**	**36.2**	**36.7**	**30.6**

From Table 4.8 above, various factors were examined, including Customer exposure, Customer accessibility, Customer support mechanism, Customer work experience, and Revenue collection. The highest loading indicator for Customer exposure was (.897), with each factor elucidating 71.9 percent of the data's variance, indicating a relatively moderate level of variability. Additionally, Eigenvalues of (2.9), surpassing one, highlighted the importance of these factors. Concerning Customer accessibility, the highest factor exhibited a loading of (.730) and accounted for 64.8 percent of the data variance, indicating a moderately low level of variance. The Eigenvalue of (2.9), exceeding one, suggests the continued relevance of other associated factors. In terms of Customer support mechanism, the dominant factor demonstrated a loading of (.725) and explained 36.2 percent of the data variance, suggesting a moderate level of consistency. Furthermore, Eigenvalue results of (1.4), surpassing one, emphasized the need for further investigation into related factors. Regarding Customer work experience, the leading factor displayed a loading of (.818) and explained 36.7 percent of the data variance, implying a relatively modest level of variability. Moreover, Eigenvalue results of (1.5), exceeding one,

highlighted the significance of other corresponding factors in the study. Lastly, for Revenue collection, the primary factor exhibited a loading of (.902) and accounted for 30.6 percent of the data variance, indicating a relatively modest level of variability. Furthermore, Eigenvalue results of (1.2), exceeding one, highlighted the importance of other related factors in the study.

4.6 Correlation analysis

Pearson correlation was run using SPSS Ver. 23 and was used to investigate the relationship between Customer exposure, Customer accessibility, Customer support mechanism, and Revenue collection at NWSC, Uganda and were displayed in the Table 4.9 below.

Table 4.9: Correlation results

Items	**1**	**2**	**3**	**4**
Exposure (1)	1			
Accessibility (2)	.701**	1		
Support mechanisms (3)	.566**	.495**	**1**	
Revenue collection (4)	.422**	.259**	.567**	**1**

** Correlation is significant at the .01 level (2-tailed).

4.6.1 Customer exposure and revenue collection

From the correlation findings in Table 4.10 above revealed that customer exposure had a significant and positive relationship with revenue collection at ($r = .422^{**}$, $P < 0.01$). This means that any increase in customer exposure to electronic payment systems will lead to increase in revenue collection by NWSC.

4.6.2 Customer accessibility and revenue collection

Furthermore, Customer accessibility to electronic payment systems was also significantly and positively related with revenue collection at (.259**, $P < 0.01$). This means that increase in

customer accessibility to electronic payment systems leads to increase in revenue collection by NWSC.

4.6.2 Customer support and revenue collection

The study further showed that there was a relationship between customer support mechanisms and revenue collection at (r= .567**, P < 0.01). This means that any increase in customer support mechanisms leads to increase in revenue collection by NWSC.

4.7 Regression analysis

A linear regression analysis was conducted to determine the predictability levels of Customer exposure, Customer accessibility, Customer support mechanism on Revenue collection at National Water and Sewerage Corporation. The results from the study are displayed in Table 4.10 below.

Table 4.10: Regression model results

	Unstandardized Coefficients		**Standardized Coefficients**	**T**	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	2.012	.121		16.611	.000
Exposure	.119	.032	.254	3.689	.000
Accessibility	.073	.028	.171	2.613	.009
Support mechanisms	.402	.045	.508	8.977	.000
Model Summary					
Adjusted R Square	.345				
ANOVA (F-Statistics)	55.403**, P=.000 < 0.05**				
Dependent Variable: Revenue Collection					

The findings in table 4.10 above, showed that the combined constructs of electronic payment system with its constructs Customer exposure, Customer accessibility, Customer support mechanism collectively accounted for 34.5% (Adjusted R Square = .345) of the variance in revenue collection. The remaining 65.5% of the variance was attributed to factors which were not considered in this study. These findings suggest that the regression model effectively predicted the dependent variable. The goodness of fit was confirmed by the significant F-value (F= 55.403, P=.000 <0.05), supporting the model's validity.

For the individual constructs, using Beta values, the results also revealed a positive and significant effect customer exposure on revenue collection at (Beta = **.254,** *p=.000*<0.05). It means that a unit increase in customer exposure to electronic payment systems leads to .254 increase on the revenue collection, and a unit decrease in customer exposure to electronic payment systems leads to .254 decrease in revenue collection. For Customer accessibility to electronic payment systems, it positively predicted revenue collection at (Beta =**.171**, *p=.009* <0.05).This finding implied that a unit increase in customer accessibility to electronic payment systems leads to .171 increase in revenue collection, and a unit decrease in customer accessibility to electronic payment systems leads to .171 decrease in revenue collection. Lastly, Customer support mechanisms was also found to be positively and significantly predicting revenue collection at (Beta =.**508**, *p=.000* <0.05), this implied that a unit increase in Customer support mechanisms leads to .508 increase in predicting revenue collection, and a unit decrease in Customer support mechanisms leads to .508 decrease in revenue collection by NWSC.

4.8 The moderating effect of Customer work experience in the relationship between electronic payment systems and revenue collection at NWSC

A moderating analysis was ran to assess the effect of Customer work experience in the relationship between electronic payment system adaptation and revenue collection at NWSC basing on the assumptions of Baron and Kenny (1986) which include;

i) The dependent and independent variables should be measured on a continuous scale.

ii) There should be a moderator variable that is a nominal variable with at least two groups.

iii) The variables of interest (the dependent variable and the independent and moderator variables) should have a linear relationship.

iv) The data must not show multicollinearity.

v) There should be no significant outliers, and the distribution of the variables should be approximately normal.

Table 4.11: Regression analysis moderating effect of Customer work experience in the relationship between electronic payment system and revenue collection at NWSC

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.536	.245		10.366	.000		
	Electronic Payment System	.016	.004	.961	3.853	.000	.410	5.173
	Customer work experience	.215	.081	.271	2.641	.009	.245	4.081
	Electronic Payment System * Customer work experience	.003	.001	.713	2.868	.018	.280	5.192

a. Dependent Variable: Revenue Collection

Both electronic payment systems and customer work experience independently showed significance in their relationship with revenue collection, as evidenced by p-values of **0.000 < 0.05** and **0.009 < 0.05**, respectively. The interaction between Electronic Payment Systems *

Customer work experience also produced significant results with a p-value of **0.018 < 0.05**, indicating that the interaction between these variables has a significant effect on revenue collection. The **VIF values** for all the predictors (Electronic Payment Systems = 5.173, Customer work experience = 4.081, and their interaction = 5.192) are below the commonly accepted threshold of 10, indicating that multicollinearity is not a severe concern in this model. However, while these VIF values indicate some level of correlation, they are not high enough to suggest problematic multicollinearity. Therefore, both electronic payment systems and customer work experience independently influence revenue collection, and the interaction between the two further enhances this effect, indicating that **customer work experience moderates the relationship** between electronic payment systems and revenue collection at NWSC. The results are robust and show the significance of incorporating both factors to improve revenue collection outcomes.

4.9 ANOVA of demographic characteristics on study variables

The researcher ran the ANOVA of the demographic characteristics on the customer exposure, customer accessibility, customer support mechanisms and revenue collection independently.

Table 4.12: Showing the ANOVA of demographic characteristics of customer exposure

		Sum of Squares	df	Mean Square	F	Sig.
Sex	Between Groups	2.260	1	2.260	2.731	.099[a]
	Within Groups	255.794	309	.828		
	Total	**258.055**	**310**			
Age of respondent	Between Groups	4.549	1	4.549	5.545	.019[a]
	Within Groups	253.506	309	.820		
	Total	**258.055**	**310**			
Highest level of education	Between Groups	12.664	1	12.664	15.946	.000[a]
	Within Groups	245.391	309	.794		
	Total	**258.055**	**310**			
Time as NWSC Customer	Between Groups	16.204	1	16.204	20.702	.000[a]
	Within Groups	241.851	309	.783		
	Total	**258.055**	**310**			

From the ANOVA results in Table 4.12 indicates that all the demographic features such as age of respondent, level of education, and period as NWSC Customer were significant in

influencing customer exposure having scored P-values < 0.05. This means that there was no difference in how respondent that answered these items perceived customer exposure.

Table 4.13: Showing the ANOVA of demographic characteristics of customer accessibility

		Sum of Squares	df	Mean Square	F	Sig.
Sex	Between Groups	8.895	1	8.895	9.135	.003[a]
	Within Groups	300.894	309	.974		
	Total	**309.790**	**310**			
Age of respondent	Between Groups	2.177	1	2.177	2.187	.140[a]
	Within Groups	307.613	309	.996		
	Total	**309.790**	**310**			
Highest level of education	Between Groups	7.243	1	7.243	7.398	.007[a]
	Within Groups	302.547	309	.979		
	Total	**309.790**	**310**			
Time as NWSC Customer	Between Groups	9.574	1	9.574	9.854	.002[a]
	Within Groups	300.216	309	.972		
	Total	**309.790**	**310**			

The ANOVA results in Table 4.13 above also shows that all the demographic characteristics as sex, level of education and time as NWSC Customer were significant in influencing customer accessibility having scored P-values < 0.05. This means that there was no difference in how respondent that answered these items perceived customer accessibility.

Table 4.14: Showing the ANOVA of demographic characteristics of customer support mechanisms

		Sum of Squares	df	Mean Square	F	Sig.
Sex	Between Groups	1.323	1	1.323	4.609	.033[a]
	Within Groups	88.701	309	.287		
	Total	**90.024**	**310**			
Age of respondent	Between Groups	.078	1	.078	.268	.605[a]
	Within Groups	89.946	309	.291		
	Total	**90.024**	**310**			

Highest level of education	Between Groups	.267	1	.267	.920	.338[a]
	Within Groups	89.757	309	.290		
	Total	**90.024**	**310**			
Time as NWSC Customer	Between Groups	.009	1	.009	.031	.861[a]
	Within Groups	90.015	309	.291		
	Total	**90.024**	**310**			

In Table 4.14 above, the ANOVA results also showed that all the demographic characteristics of sex, age of respondent, level of education and time as NWSC customer were not significant in influencing customer support having scored P-values > 0.05. This means that there was difference in how respondent perceived customer support mechanism.

Table 4.15: Showing the ANOVA of demographic characteristics of revenue collection

		Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Sex	Between Groups	.049	1	.049	.272	.602[a]
	Within Groups	56.219	309	.182		
	Total	**56.268**	**310**			
Age of respondent	Between Groups	.586	1	.586	3.252	.072[a]
	Within Groups	55.682	309	.180		
	Total	**56.268**	**310**			
Highest level of education	Between Groups	.179	1	.179	.988	.321[a]
	Within Groups	56.089	309	.182		
	Total	**56.268**	**310**			
Time as NWSC Customer	Between Groups	.282	1	.282	1.555	.213[a]
	Within Groups	55.987	309	.181		
	Total	**56.268**	**310**			

In Table 4.15 above, the ANOVA results also showed that all the demographic characteristics of sex, age of respondent, level of education and time as NWSC customer were not significant in influencing revenue collection having scored P-values > 0.05. This means that there was difference in how respondent perceived revenue collection.

CHAPTER FIVE

DISCUSSION OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter presents the discussion of the findings, conclusion and recommendations. This presentation was done in line with the study objectives that is the effect of customer exposure to electronic payment systems on revenue collection, the effect of customer accessibility to electronic payment systems on revenue collection, the influence of customer support mechanisms on revenue collection and the moderating effect of customer work experience on the relationship between electronic payment systems adaptation and revenue collection.

5.1 Discussion

5.1.1 Customer exposure to electronic payment systems on revenue collection

There is a positive and significant relationship between customer exposure to electronic payment systems and revenue collection. This relationship is attributed to customers' awareness of the available electronic payment options, their understanding of the benefits and features of electronic payment systems, and their perception of these systems as convenient and user-friendly for conducting transactions. As a result, NWSC benefits from efficient systems for revenue collection by actively following up on all customers to clear their outstanding balances, while addressing payment discrepancies or errors which fosters trust and confidence among customers. This emphasizes the importance of ensuring that customers are well-informed and comfortable with electronic payment systems, as it contributes to streamlined revenue collection processes, improved financial transparency, and enhanced customer satisfaction.

The study findings align with prior research emphasizing the importance of customer exposure to electronic payment systems in shaping revenue collection outcomes. For instance, Wang (2016) demonstrated that customers exposed to informational campaigns and promotional

efforts were more inclined to adopt electronic payment methods within the energy sector. Likewise, Lee and Lee (2018) identified a positive correlation between customer exposure and revenue collection within a municipal utility context. Therefore, it is suggested that increased customer exposure to electronic payment systems may have a positive influence on revenue collection within the National Water and Sewerage Corporation.

5.1.2 Customer accessibility to electronic payment systems on revenue collection

The study results reveal a significant and positive correlation between customer accessibility to electronic payment systems and revenue collection at NWSC. Customers who have access to a variety of electronic payment system options like mobile money, EFTs, mobile apps, agent banking, etc. and receive timely notifications or reminders about their due dates electronically, at same time being able to check their payment history and receipts of payments with the assurance of that electronic payment systems provide security measures to safeguard their financial information and transaction, such customers build confidence in NWSC's efficient systems for revenue collection that clearly instructs them on payment methods which motivates them to clear their outstanding bills hence NWSC meeting its collection targets. This emphasizes the importance of enhancing customer accessibility to electronic payment systems, as it not only optimizes revenue collection processes but also strengthens customer relationships and satisfaction, thereby contributing to the financial sustainability and operational effectiveness of NWSC.

These findings align with prior research conducted by Chen and Zhang (2019), which demonstrated that factors such as ease of use, convenience, and the availability of multiple payment options significantly influence customer adoption of mobile payment systems. The ease with which customers can access electronic payment systems is crucial for their adoption and usage, ultimately impacting revenue collection. Additionally, the study resonates with the

findings of Liu (2020), who identified a positive relationship between customer accessibility and revenue collection efficiency in a public utility context. These insights underscore the importance of improving customer accessibility to electronic payment systems, as it not only facilitates their adoption but also enhances revenue collection efficiency for organizations like the National Water and Sewerage Corporation (NWSC). By prioritizing customer accessibility and ensuring seamless interaction with electronic payment systems, NWSC can optimize revenue collection processes, foster customer satisfaction, and ultimately sustain financial viability.

5.1.3 Customer support mechanisms on revenue collection

There is a positive and significant relationship between customer support mechanisms and revenue collection. Customer support representatives who exhibit expertise and helpfulness, ensuring that customer inquiries are promptly and satisfactorily addressed with responsiveness, coupled with regular updates on inquiries through accessible customer support channels like emails, phone calls, and community WhatsApp groups, etc. facilitates easy communication between customers and National Water and Sewerage Corporation (NWSC). This leads to a seamless customer work experience which helps NWSC to benefits from its efficient revenue collection systems, characterized by actively following up on customers with outstanding balances and the swift resolution of payment discrepancies or errors. This not only fosters trust and confidence among customers but also enhances the corporation's reputation for reliability and customer service excellence. Prioritizing robust customer support mechanisms thus emerges as a fundamental strategy for NWSC, ensuring sustained revenue collection and long-term customer satisfaction.

The study findings corroborate with research conducted by Said and Aziz (2021), indicating that robust customer support mechanisms play a pivotal role in enhancing customer satisfaction

and fostering the adoption of electronic payment systems. Similarly, Kim and Yoon (2019) demonstrated that responsive and supportive customer service significantly elevates customer satisfaction levels, particularly in the realm of mobile payment adoption. Furthermore, the findings resonate with Zhang (2021), who underscored the significance of customer support in influencing customers' decisions to utilize electronic payment methods within the utility sector. Thus, it is anticipated that the implementation of effective customer support mechanisms can positively influence revenue collection outcomes within the National Water and Sewerage Corporation (NWSC). By prioritizing customer support excellence, NWSC can enhance customer satisfaction, encourage the adoption of electronic payment systems, and ultimately contribute to the corporation's financial sustainability and operational efficiency.

5.1.4 The moderating effect of customer work experience on the relationship between electronic payment systems adaptation and revenue collection

There exists a strong and positive correlation between electronic payment systems adaptation and revenue collection within the National Water and Sewerage Corporation. This correlation is fortified by several key factors, including customer exposure, customer accessibility, and robust customer support mechanisms, all of which contribute to the enhancement of NWSC's revenue collection systems and the provision of clear payment instructions to customers. Moreover, the integration of customer work experience into this equation emerges as a significant moderator, exerting a substantial influence on the relationship between electronic payment systems and revenue collection at NWSC. Customer work experience equips individuals with confidence, enabling them to effectively navigate the challenges associated with electronic payment systems. Furthermore, individuals with substantial customer work experience tend to possess a deep familiarity with electronic payment systems, facilitating seamless integration and utilization of these systems within NWSC's operations. Additionally, customer work experience provides valuable insights into optimizing the benefits derived from

electronic payment systems, thereby enhancing NWSC's efficiency, customer service quality, and overall revenue collection processes. By leveraging the wealth of knowledge and expertise gained through customer work experience, NWSC can further optimize its electronic payment systems and maximize revenue collection outcomes, thereby ensuring its financial sustainability and operational effectiveness in the long run.

The study's findings corroborate previous research such as the study by Chen and Wang (2018), demonstrating that employees possessing greater experience and expertise tend to demonstrate heightened efficiency when managing electronic payments within utility companies. This enhanced efficiency, attributable to seasoned employees, contributes to improved revenue collection outcomes. Customer work experience functions as a moderating factor in the relationship between the adaptation of electronic payment systems and revenue collection processes. Essentially, experienced employees play a pivotal role in moderating the impact of electronic payment systems adaptation on revenue collection by leveraging their expertise to optimize system utilization, troubleshoot issues effectively, and ensure streamlined payment processes. Their proficiency in handling electronic payment systems contributes to more efficient revenue collection practices, thereby emphasizing the importance of cultivating a skilled and knowledgeable workforce within organizations adopting such payment systems.

5.2 Conclusions

The study concludes that customer support mechanism is the major predictor of revenue collection at National water and sewerage Corporation due to the effectiveness of customer support representatives who exhibit a high level of knowledge and helpfulness in addressing customer inquiries and concerns. Additionally, the accessibility of customer support channels, including phone, WhatsApp platforms and email, plays a crucial role in facilitating seamless communication between customers and the corporation. Moreover, the provision of regular

updates to customers regarding their inquiries enhances transparency and fosters trust in the corporation's services. The ability of the customer support mechanism to address customer needs promptly and efficiently not only contributes to customer satisfaction but also positively impacts revenue collection by fostering customer loyalty and encouraging repeat business. Ensuring that customers receive the assistance they require in a timely manner, the corporation can minimize the risk of customer churn and maximize revenue collection opportunities. Thus, prioritizing and optimizing the customer support mechanism emerges as a fundamental strategy for enhancing revenue collection and sustaining the corporation's financial viability.

5.3 Recommendations

The following recommendations were put forward

5.3.1 Methodology Recommendations

There is need to employ strategies to mitigate the impact of social desirability bias and self-reporting bias on the accuracy of the data collected. There is need to employ techniques such as anonymity and confidentiality in data collection to encourage participants to provide more genuine responses without fear of judgment or societal expectations. Additionally, incorporating multiple data sources beyond self-reported accounts, such as objective measures or observations, can help validate the accuracy of responses and give a more thorough insight of the phenomena under investigation.

Furthermore, there is need for promoting openness and trust within the research environment can foster a supportive atmosphere where participants feel comfortable sharing their experiences candidly. Researchers should be mindful of the potential biases inherent in self-reported data and receive training on techniques to minimize their impact, including the use of indirect measures or proxy indicators to assess attitudes or behaviors.

5.3.2 Policy Recommendation

The researcher recommended that policymakers mostly the parliament should allocate resources towards improving the training and development of customer support representatives to ensure they possess the necessary knowledge and skills to effectively address customer inquiries and concerns. Additionally, policymakers should focus on enhancing the accessibility of customer support channels, such as phone, social media and email, by investing in technology and infrastructure upgrades.

5.3.3 Managerial Recommendations

NWSC management should prioritize ongoing training and development programs for customer support representatives to ensure they possess up-to-date knowledge and skills in addressing customer inquiries and concerns effectively. Providing regular training sessions on customer service best practices, communication techniques, and product knowledge can enhance the proficiency and effectiveness of customer support staff. Additionally, The customer service team should have a culture of constant learning and development, supported by management to adapt to evolving customer needs and industry trends.

NWSC management should focus on improving the accessibility and responsiveness of customer support channels, such as phone, social media and email. This can be achieved by investing in technology upgrades and infrastructure enhancements to streamline communication processes and reduce response times. Furthermore, management should establish systems for providing regular updates to customers regarding their inquiries, service requests, and any relevant developments. Transparent and timely communication fosters trust and confidence in NWSC's services, ultimately leading to increased customer satisfaction, loyalty, and revenue collection opportunities.

5.4 Areas for further research

The following areas for future research studies:

i) Future researchers could explore how the adoption of electronic payment systems and other digital technologies within utility companies like the National Water and Sewerage Corporation affects overall service efficiency.

ii) Another area for future research could involve assessing customer perceptions and satisfaction levels regarding the adoption of electronic payment systems by utility companies beyond Kampala Central Business District.

iii) Future studies could investigate the effect of electronic payment systems on financial inclusion and access to essential services.

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APPENDENCES

Appendix I: Questionnaire

Dear respondent,

I am Atwiine Osbert, a Masters student at Kyambogo University.

This questionnaire is aimed at collecting data to undertake a study on electronic payment systems adaptation and revenue collection at NWSC. All information you will provide will be treated with utmost confidentiality and be used for purely academic purposes.

Thank you.

SECTION I: General Information. Please tick (√) the appropriate option.

1. Indicate your gender.

Male	Female

2. Indicate your Branch

Nakasero	Industrial Area	Kamwokya	Kisenyi

3. Indicate your age bracket

21-30 years	31-40 years	41 – 50 years	Above 50 years

4. For how long have you been a Customer at NWSC?

Less than 3years	4 – 6years	Above 6 years

5. What is your highest level of Education?

Certificate	Diploma	Degree	Masters and above

6. Indicate the e-payment channels you frequently use.

None	Mobile money	EFT	e-banking

7. Indicate the services you have acquired from NWSC e-payment channels.

Paid for a new water application	
Paid an outstanding bill	
Paid a penalty (e.g illegal connection)	
Access to account statement	
None	

SECTION B: Customer exposure

Indicate your level of agreement with the following statements by ticking at the appropriate box. Kindly use the ratings criteria below.

5=Strongly Agree, 4=Agree, 3=Uncertain, 2=Disagree, 1=Strongly Disagree

No	Statements	5	4	3	2	1
1	Am aware of the electronic payment options available to me.					
2	I have information about the benefits and features of electronic payment systems.					
3	I have received training or guidance on how to use electronic payment systems.					
4	I perceive electronic payment systems as convenient and user-friendly for conducting transactions.					

SECTION C: Customer accessibility

Indicate your level of agreement with the following statements by ticking at the appropriate box. Kindly use the ratings criteria below.

5=Strongly Agree, 4=Agree, 3=Uncertain, 2=Disagree, 1=Strongly Disagree

No	Statements	5	4	3	2	1
1	Electronic payment systems offer a variety of payment options (e.g., credit card, bank transfer, mobile money).					
2	I receive timely notifications and reminders about payment due dates through electronic payment systems.					
3	I can quickly access my payment history and receipts through electronic payment systems.					
4	Electronic payment systems provide security measures, to safeguard customers' financial information and ensure secure transactions.					

SECTION D: Effectiveness of customer support mechanisms

Indicate your level of agreement with the following statements by ticking at the appropriate box. Kindly use the ratings criteria below.

5=Strongly Agree, 4=Agree, 3=Uncertain, 2=Disagree, 1=Strongly Disagree

No	Statements	5	4	3	2	1
1	Customer support representatives are knowledgeable and helpful.					
2	Response time for customer inquiries or complaints are prompt.					
3	Customer support channels are easily accessible (phone, email, chat, etc.).					
4	Customers receive regular updates and notifications regarding their inquiries.					

SECTION E: Customer work experience

Indicate your level of agreement with the following statements by ticking at the appropriate box. Kindly use the ratings criteria below.

5=Strongly Agree, 4=Agree, 3=Uncertain, 2=Disagree, 1=Strongly Disagree

No	Statements	5	4	3	2	1
1	I am confident that my work experience makes me well-equipped to handle the challenges associated with electronic payment systems at NWSC					
2	I have received formal training on how to use electronic payment systems of NWSC					
3	I am extremely familiar with the electronic payment systems at NWSC.					
4	My work experience has provided me with valuable insights into optimizing the benefits of electronic payment systems of NWSC					

SECTION F: Revenue collection

Indicate your level of agreement with the following statements by ticking at the appropriate box. Kindly use the ratings criteria below.

5=Strongly Agree, 4=Agree, 3=Uncertain, 2=Disagree, 1=Strongly Disagree

No	Statements	5	4	3	2	1
1	NWSC has efficient systems in place for revenue collection.					
2	NWSC actively follows up on outstanding payments					
3	NWSC promptly addresses payment discrepancies or errors					
4	NWSC provides clear instructions on payment methods					

END

Appendix II: Interview Guide to Staff

1. How do you ensure that customers are aware of the benefits and advantages of using electronic payment systems?
2. What steps can NWSC take to improve the accessibility of electronic payment systems for your customers?
3. How do you provide support to customers who encounter issues or have questions related to electronic payment system?