

## **THE EFFECT OF ACCOUNTS RECEIVABLE ON REVENUE COLLECTION IN PUBLIC WATER COMPANIES**

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## **ABSTRACT**

The general objective of the study is to investigate the impact of financial determinants on revenue collection in public water companies. The specific objective of the study is to evaluate the effect of accounts receivable on revenue collection in public water companies. The case study was done at a public water company. The study was motivated by the need to address inefficiencies in revenue collection in public water companies. A descriptive design was employed, with data collected from a sample size of 500, drawn from a target population of 1000. Descriptive results indicated a mean of 4.27 and a standard deviation of 0.860. While 85.9 % agreed that accounts receivable is a financial determinant of revenue collection in public water companies. Inferential statistics results used correlation and regression. where  $r^2=0.226^{**}$   $p_v=0.01$  and regression had  $\beta=0.622$  with  $p_v=0.000$ .

The above  $r^2=0.226$  indicated that accounts receivable has a weak positive correlation with revenue collection as a financial determinant. The regression indicated a  $\beta$  of 0.622, indicating that accounts receivable has a positive impact on revenue collection, thus it is a financial determinant of revenue collection. Findings indicated that Accounts Receivable has a positive influence on Revenue Collection in public water companies. The study suggests improvements in the management and control of Accounts Receivable, liquidity position, and policy formulation in public water companies.

**Key words:** Accounts Receivable Ratio, Liquidity Position, Days Sales Outstanding, Water Defaulters, Debt Management Policy, Credit Reference, Bad Debt Recovery.

## **INTRODUCTION**

Disparities in accessing water and sanitation services are critical in the water sector. Water facilitation by the government through water service providers is a constitutional right of citizens, as indicated in the Constitution 2010, article 43 (1)(3) and the Water Act 2016. Many water service providers already operate with tight margins and struggle to collect revenue from a large portion of their customers. Poor cost recovery, operational inefficiencies, and a weak financial management system compromise service delivery and long-term viability (World Bank, 2020). Sound financial practices are not only necessary for maintaining infrastructure but also for ensuring equality in access to water services.

Fugelsnes (2020) highlighted the importance of institutional reform and technological upgrades to fix inefficiencies in East African water utilities. Outdated infrastructure and a mix of manual

and digital records mean automation remains a distant goal. The World Bank (2016) highlighted that inefficiencies in revenue collection, water service delivery, and financial management remain critical barriers to sustainable development worldwide. Key processes such as billing accuracy, credit control, and debt collection determine whether service providers are successfully converted into revenue. Inefficiencies such as delayed billing, weak enforcement of payment policies, and prolonged collection periods often result in liquidity constraints and reduced operational effectiveness (Pandey, 2015).

Research shows that strong receivables management practices improve financial performance by enhancing cash flow and reducing losses from unpaid accounts (Deloof, 2003). However, unpaid bills and delayed collections significantly affect the liquidity and operational capacity of water service providers. Poor management of Accounts Receivable can lead to reduced cash inflows. Paystream Advisors (2017) explicitly warned that manual Accounts Receivable processes, poor visibility, and inefficient collections undermine cash flow, weaken institutional accountability, and directly harm communities through unreliable water service.

Despite the widespread adoption of Enterprise Resource Planning solutions, they still require substantial manual effort to process invoices and mitigate portfolio risks (Kumaran, 2016a). A key strategy in managing these risks is understanding customer behavior, particularly distinguishing between good and bad credit risks. Enhancing billing systems through timely incentives like discounts and diversified payment options can improve cash inflow and motivate prompt payments (Kumaran, 2016b). Accounts Receivable productivity hinges on how effectively Accounts Receivable has been evidenced by statistical data from 82 public water companies, with a figure of USD 279,219,397 as total outstanding debts. Out of the total debts in the form of accounts receivable, USD 135,312,311 are good debtors, while USD 143,907,086 outstanding debts, which are long overdue. Hence accounts receivable is a critical financial determinant of revenue collection in public water companies.

### **Statement of the Problem**

Public water companies continue to face persistent challenges in revenue collection, primarily due to inefficiencies in managing accounts receivable. Delayed payments, weak enforcement mechanisms, and inadequate financial controls have undermined their ability to sustain operations and expand access to clean water. Chanda (2024) observes that such inefficiencies in receivables management are not unique but reflect broader governance and accountability issues in public utilities across developing economies. These challenges represent more than financial shortcomings; they constitute a pressing social need, as millions of citizens depend on affordable and reliable water services for their health, livelihoods, and dignity.

The challenges limit the achievement of national development goals. The United Nations (2015) Millennium Development Goals (MDGs) Report emphasized that the MDGs were the most successful anti-poverty initiative in history, significantly reducing extreme poverty, improving access to safe drinking water, and advancing education and gender equality worldwide. However, it also acknowledged persistent shortfalls, particularly in ensuring universal access to clean water and sanitation. Despite subsequent reforms in 2012 and 2016,

and the recognition of water as a basic human right under Article 43 (1)(d) of the Constitution of 2010, inadequate revenue collection continues to hinder progress toward Vision 2030 goals. Statistical data revealed that 82 public water utilities held accounts receivable totaling USD 214,941,600, comprising USD 104,040,000 in good debts and USD 110,901,600 in long-overdue accounts. These outstanding debts have constrained utilities' ability to finance operational and capital expenditures, ultimately affecting service quality and sustainability.

Previous studies by Foster et al. (2017) and the United States Agency for International Development (2008) highlighted that self-financing mechanisms are essential for water utility sustainability, particularly in sub-Saharan Africa. Technological innovations such as artificial intelligence-driven predictive analytics and digital payment systems have been proposed to enhance debt management and reduce collection delays (Eddy, 2024). The findings underscore the need for improved accounts receivable management to strengthen financial performance and enable public water companies to achieve their service delivery goals, in line with both Vision 2030 and the United Nations Sustainable Development Goal of universal access to clean water by 2030.

Despite several studies, accounts receivable management has not been adequately studied in relation to its specific contribution to revenue collection in public water companies. Much of the existing literature focuses broadly on financial performance, leaving a gap in understanding how receivables directly influence revenue outcomes. The missing gap is particularly significant in developing countries, where financial inefficiencies are more pronounced, and utilities face challenges such as customer arrears, weak billing systems, and ineffective debt recovery mechanisms. These issues hinder optimal revenue realization and threaten the sustainability of water service delivery to the customers; thus, the study seeks to evaluate accounts receivable as a financial determinant of revenue collection in public water companies. The findings aim to generate insights that can inform policy reforms and strengthen financial sustainability in the sector, ensuring that utilities can meet growing demand while maintaining operational stability.

### **Specific Objectives**

To investigate the effect of Accounts Receivable on Revenue Collection in public water companies.

### **Hypotheses of The Study**

**H<sub>01</sub>:** Accounts Receivable has no significant effect on Revenue Collection in public water companies.

### **Significance of the study**

This study is significant in enhancing financial sustainability in water companies by investigating the impact of accounts receivable on revenue collection in public water companies. The study addresses a critical social need: ensuring reliable access to clean water for households. Weak management of accounts receivable undermines revenue collection,

constraining water companies from fulfilling their constitutional obligation under Article 43 of the Constitution (2010). Beyond the legal framework, the study contributes to Vision 2030 and global development targets (United Nations, 2015), which emphasize equitable access to essential services as a cornerstone of human development.

The study underscores the pressing need for improved accounts receivable management to address insufficient revenue collection which directly affects the ability to finance both operational and capital expenditure for water and sewerages services in public water companies (Canada, 2024). The findings aim to bridge critical gaps in financial management, especially arising from constrained government budget allocation that hinder operational efficiency in the water sector as mandated by the Water Act No. 8 of 2016, the government recognizes water as a fundamental human right (Government, 2016). Additionally, the outcome the study not only fills a gap in academic literature but also provides actionable insights for policymakers and practitioners seeking to strengthen financial accountability in public service institutions.

## **LITERATURE REVIEW**

### **Introduction**

This chapter represented an empirical review of literature relevant to the study alongside theoretical guidelines that discuss theories related to the variable, such as Credit and Collection Management Theory. The literature review covers the theoretical framework, Conceptual Framework, and empirical literature review, with the independent variable being accounts receivable.

### **Theoretical Review**

Theories explain relationships between variables. Kamayu, Namusonge, and Bichanga. (2015), a theory is defined as a system of ideas formulated to explain phenomena, particularly those grounded in general principles. This conceptualization is further supported by Becket (2006), who emphasized the foundational role of theoretical frameworks in guiding empirical inquiry and understanding complex systems.

### **Credit and Collection Management Theory**

A debt management plan is a formal agreement between a debtor and a creditor. Theodore (1962), Credit and Collection Management theory, a firm's receivables depend on the firm's sales on credit. According to Nandiri (1996), determinants of trade credit terms in the US total manufacturing Sector based on commercial theory, trade credit improves product marketability by making it easier for firms to sell. For successful receivable management, a firm must design an optimal credit policy for investment in receivables, and Cash sales are normally considered riskless and therefore preferred. Seureca & CAS (2007), final report on water supply project, found that the subsidy of debtors by prompt payers was strongly resented or disliked. If companies do not recover charges within a reasonable time, they may lack the cash needed to run their businesses.

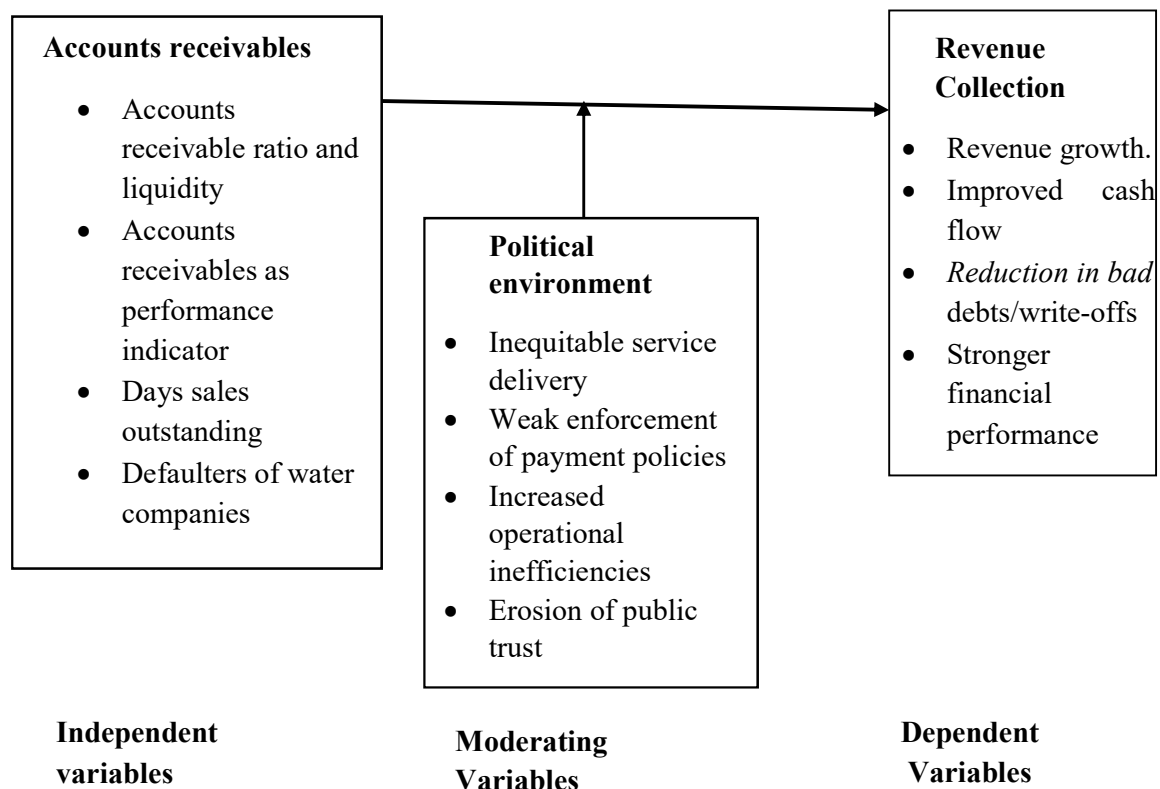
Debt management occurs when people fail to pay the bills, and Credit Management is sound sales, backed by revenue collection, resulting in profitable sales. According to Meryem (2014),

Trade Credit Policy and Agency Theory: Evidence from Tunisian Export Companies, indicated that sales outstanding of Tunisian export Medium-sized Enterprises relate to adverse selection and are inversely linked to moral hazard, measured by provision on bad debts and cost ratio.

### Conceptual Framework

(Guattari, 1991), defines the conceptual framework as a network or a plane of interlinked concepts that together provide a comprehensive understanding of a phenomenon, or the concepts that support a conceptual framework support one another, articulate their respective phenomena, and establish a framework-specific philosophy. The conceptual framework gives a diagrammatic representation of linkages or relationships between study variables (Robson, 2011). The conceptual framework constitutes accounts receivable as an independent variable. Political environment as a moderating variable and revenue collection as a dependent variable.

figure 2.1: Conceptual framework



### Empirical Literature Review

According to Kothari (2004), empirical literature review is containing the review of the research studies made earlier which are similar to the proposed in a view to acquire knowledge as to which data and other materials are available for the operational purpose thus enabling the researcher to specify her own problem in a meaningful context. This section reviews discussions from previous scholars in regard Accounts Receivable as a determinant of revenue collection in public water companies. Accounts receivable play a critical role in revenue

collection for public water companies, as unpaid debts reduce liquidity and hinder operational efficiency.

Credit and Collection Management theory emphasizes that receivables depend on the extent of credit sales, requiring firms to design optimal credit policies to balance risk and profitability (Theodore, 1962; Nandiri, 1996). Poor receivable management forces companies to borrow or raise additional funds, lowering profitability and investor confidence, while large accrued balances often disrupt operations (Seureca/CAS, 2007; Joshua, 2016). Empirical studies highlight that weak receivable management contributes to financial instability in utilities. For instance, Foster et al. (2017) found that rural water points in Sub-Saharan Africa must be self-financed, yet communities struggle with revenue collection models, creating sustainability challenges.

## **RESEARCH METHODOLOGY**

### **Introduction**

This chapter comprises the following: Research Design, Target Population, Sample Size, Sampling Frame, Data Collection, Pilot study, and finally data analysis methods and interpretations. The tools for data testing, validity, reliability, and correlation between the dependent and independent variables were the ANOVA regression model.

### **Research Design**

The study applied a Mixed Research Design, which enabled the researcher to explain the relationship between variables. The design is useful for formulating investigation issues (Kothari, 2006). Research Design is the function of ensuring that the evidence obtained enables a researcher to effectively address the research problem logically and as unambiguously as possible (De, 2001). Research design provides a framework for data collection and analysis. (Chepcheng, 2018) Ngugi (2014), cited with Schward (2005), who indicated that a research design establishes procedures to obtain cases for study and to determine how scores will be obtained for those cases, and was also in agreement with Newing (2021), stating that research design was used in the overall process described in research methodology and research structure. In the Business Research Methods book (by Cooper, 2001), it was indicated that the research design constitutes the blueprint for the collection, measurement, and analysis of data. Research Design is a structure of research that holds the entire element of the research project together.

### **Target Population**

A target population is described as an entire group of individuals, events, or objects with common observable characteristics (Chumo, 2013). Lumley and Benjamin (1995) state that a population target is a group the research wants to use in the research study to form an opinion on the study's findings. Kithara (2004) defines population as all items in any field of inquiry, and it is also known as the universe. A population is described as the set of sampling units or cases that the researcher is interested in (Newing, 2011).

The research study targeted a population of 1000 respondents, drawn from Water Company staff and management, the Ministry of Water and Sanitation, the Water Service Regulatory Board, the Water Service Board, and professionals from the County. The main focus was on seven regions. The Ministry of Water is responsible for water management, the Water Service Regulatory Board is responsible for regulations, licensing of Water Service Providers, water management, and management of the unions. Currently, 101 water companies are licensed by eight (8) water service boards. Table 3.1 below indicates the respondent groups in three categories: Management and staff, the Ministry of Water and Sanitation, and the water regulatory board and professionals.

**Table 3. 1: Target Population**

<b>Cadres of groups</b>	<b>Target</b>
Management, staff, and union	850
Ministry of water and sanitation	50
Water Services Regulatory Board, Non-Governmental Organization, and professionals from the City Water and Sewerage Company	100
<b>Total</b>	<b>1000</b>

### **Sampling Frame**

According to Memba (2011), the research findings indicated that the sampling frame is a list of sampling units in a sample. Chumo (2013) stated that a sampling frame is a list of elements from which a sample is drawn. A sampling frame is a list of all items that have a representative sample (Nachmias and Nachmias, 2008). The sample frame consisted of the executive members from the Ministry of Water and Irrigation, Water Service Board, County officials, and City Water and Sewerage Company Limited staff. The reasons for the choice were due to limited resources and the accessibility of data from the target group.

### **Sample Size and Technique**

Gerstman (2003) states that a requirement for an appropriate sample size is to declare an acceptable margin of error (€). The Cochran formula allows you to calculate an ideal sample size given a desired level of precision, desired confidence level, and the estimated proportion of the attribute present in the population. Cochran's formula is considered especially appropriate with a large population. It was established by William G. Cochran in 1977 as the following formula for a definite population target. The sample size (n) for a finite population for the study with a confidence of 95% at a maximum proportion of 50% Z= 1.96, while acceptable within an error margin of 0.0438 of the target population of 1000. As indicated in Table 3.2

Cochran's formula for sample calculation

$$\text{Cochran W, G, (1977)} \quad n = \frac{Z^2 * P * (1-p)}{e^2}$$

Where:

n- The sample size

Z- Z-score associated with the desired confidence level

P- The expected proportion or prevalence of the outcome or characteristic of interest in the population.

e- The margin of error, i.e., the maximum distance between the true population parameter and the sample size.

**Table 3. 2: Sampling frame**

<b>Cadres of staff</b>	<b>Target population</b>	<b>Sample size</b>
Management, staff, and union	850	425
Ministry of Water and Irrigation	50	25
Water Services Regulatory Board, and the Professionals of the City Water and Sewerage Company	100	50
<b>Total</b>	<b>1000</b>	<b>500</b>

### **Data Collection Procedures**

Data collection involves gathering, measuring, and analyzing information to answer research questions, test hypotheses, and evaluate outcomes. This is done by a researcher administering questionnaires to respondents assisted by research assistants, to collect data. The European Thyroid Association Researchers (2008) defined a questionnaire as a set of questions designed to gather information from individuals. According to Creswell (2014), Questionnaires were administered by being drop off and pick up where a mixed research design was done.

## **RESEARCH, FINDINGS AND DISCUSSIONS**

### **Introduction**

The analysis was done using descriptive statistics, which include frequency, mean, mode and standard deviation and measures of dispersion such as correlation, co-efficiency and presentation was done through graphical presentation and tabular form. Both quantitative and qualitative analyses were used in coming up with the findings. The program applied statistical package for Social Statistics. Additionally, the chapter also covers the inferential analysis of the study model called the logistic linear regression model.

### **Response Rate**

The data was collected by the use of questionnaires, which were sent to 500 respondents. Out of the total questionnaires, 487 respondents returned the questionnaires, having a response rate of 97.4 percent, while 2.6 % did not return the questionnaire. According to Best & Khan (2007), a response rate of 50 percent is considered adequate, 60 percent good, and above 70 percent very good. The respondent rate of 97.4 was considered very good as it exceeded the threshold postulated by Best and Khan (2007).

### **Descriptive Analysis**

The section deals with descriptive analysis of study variables, which begins with the independent variable being Account Receivables and Political Environment, by measures of central tendency and dispersion.

### **Respondent on Descriptive Statistics of Accounts Receivable on Revenue Collection in Public Water Companies**

The respondents were asked to state the level of their agreement and disagreement to various statements presented in the questionnaires with regard to strongly disagree =1, Disagree=2, Not sure=3, Agree=4 and Strongly Agree=5. Refer to Table 4.13 below. The study sort to find out the effect of Accounts Receivable on Revenue Collection in public water companies.

The results in Table 4.13 below using frequency distribution indicate that 88.0 (%) percent of the respondents agreed that the accounts receivable ratio determines the liquidity position of business organizations. 88.1 (%) percent agreed that Accounts receivable aging need to be identified by Water Services Regulatory Board as performance indicator, 84.2(%) percent agreed that Days sale outstanding on accounts receivables are beyond the required days in the debt management policy, 85.4 (%) percent agreed that the current debt management policy does not give powers to the water companies to institute legal proceedings against the defaulters of water and sewerage services, 86.2 (%) percent agreed that E-payments and credit reference bureaus on revenue collection is weak in water Companies .83.3 (%) percent agreed that use of credit reference bureaus and factoring of outstanding debts will improve efficiency in revenue collection in public water companies.

*Table 4.13: Respondents of Account Receivables by Frequency Distribution (%)*

<b>Statement</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Not sure</b>	<b>Agree</b>	<b>Strongly Agree</b>
The accounts receivable ratio determines the liquidity position of business organization in water companies	1.2	2.2	8.6	40.2	47.8
The accounts receivable aging need to be identified by Water Services Regulatory Board as performance indicator	1.4	2.8	7.6	40.6	47.5
Days` sales outstanding on accounts receivables are beyond the required days in the debt management policy	2.1	3.2	10.5	42.1	42.1

The current debt management policy does not give powers to the water company to institute legal proceedings against the defaulters of water and sewerage services	3.3	4.7	6.6	39.8	45.6
E-payments and credit reference bureaus on revenue collection is weak in water companies	2.5	3.8	7.5	42.7	43.5
The use of credit reference bureaus and factoring of outstanding debts will improve efficiency in revenue collection	2.3	3.9	10.5	40.6	42.7
<b>Average</b>	<b>2.2</b>	<b>3.4</b>	<b>8.5</b>	<b>41.0</b>	<b>44.9</b>

The respondents were asked to indicate their level of agreement/disagreement as presented in the questionnaires with regards to Accounts Receivables, Likert scale was used which indicated strongly Disagree =1, Disagree =2, Not sure =3, Agree=4 and Strongly Agree=5.

Table 4.14. show that accounts receivable ratio is a determines the liquidity position. With the mean of (M=4.32) and a standard deviation of (SD=0.807) it's mean is above the average mean of M=4.27 and on variability the standard deviation of SD=0.807 was below average standard deviation of SD=0.860 which indicate a strong level of agreement and consistency among respondents. The level of agreement on the statement of, accounts receivable aging should be identified by the Water Services Regulatory Board as a key performance indicator. Indicated a mean of (M= 4.34) and the standard deviation of (SD= 0.807). The mean figure is above the average mean and the standard deviation is below the average value. This indicate a strong level of agreement and consistency.

The level of agreement on the statement, day's sales outstanding on accounts receivable exceeds the allowable period outlined in the debt management policy had mean of (M= 4.25) and a standard deviation of (SD= 0.799) whose mean is below the average mean and standard deviation less than the average indicating a weak level of agreement and consistency on variability. The statement of debt management policy does not empower public water companies to initiate legal proceedings against defaulters among water and sewerage service users, who had a mean of (M=4.26) and a standard deviation of (SD= 0.911), whose mean is below the average mean of M=4.27 and SD=0. 860. The mean reflects a shared perception of limited enforcement capacity that hinders revenue recovery in public water companies and suggests differences in the level of experience and understanding of policy application. Standard deviation is bigger than the average, indicating inconsistency among the variables.

The respondents the level of agreements on the use of e-payments and Credit Reference Bureaus in revenue collection is weak in public water companies revealed a mean of (M= 4.14)

that is below the average mean score of 4.27, and a standard deviation of 0.895 that is above 0.860 across related items suggests that, although respondents recognize the importance of e-payments and Credit Reference Bureau systems, these tools are perceived ineffective in their current implementation hence variability is huge. Level of agreement on the statement, use of Credit Reference Bureaus, and the factoring of outstanding debts would improve efficiency in revenue collection in the public water company’s results revealed an average mean score of (Mean of 4.20) and a standard deviation of (SD=0.909). The mean was below the average mean, indicating that the level of agreement was below the average Mean (M=0.860) and standard deviation greater than average standard deviation of (SD= 0.860), suggesting differences in agreement and inconsistency, and has a weak impact on revenue collection

**Table 4.14: Respondents of Account Receivables by Measure of Central Tendency and Dispersion**

<b>Statements</b>	<b>n</b>	<b>M</b>	<b>SD</b>
The accounts receivable ratio determines the liquidity position of a business organization in water companies	487	4.32	.811
Accounts receivable aging needs to be identified by the Water Services Regulatory Board as a performance indicator	487	4.34	.807
Days’ sales outstanding on accounts receivable are beyond the required days in the debt management policy	487	4.25	.799
The current debt management policy does not give powers to the water company to institute legal proceedings against the defaulters of water and sewerage services	487	4.26	.911
E-payments and credit reference bureaus in revenue collection are weak in water companies	487	4.23	.895
The use of credit reference bureaus and the factoring of outstanding debts will improve efficiency in revenue collection	486	4.20	.909
<b>n</b>	<b>487</b>	<b>4.27</b>	<b>0.860</b>

**Inferential Statistics**

One of the two major branches of statistics is inferential statistics, which is defined by Norman (2003), as a process of random sampling of data from that population and predicting the generalized opinion for further research. It is a branch of statistics which is concerned with using probability concept to deal with uncertainty in decision making. This is the process of selecting and using a sample to draw inference about population from a sample help to process decision making it helps to suggest explanations for a situation or phenomenon. It allows you to draw conclusions based on extrapolations, and is in that way, fundamentally different from descriptive statistics that merely summarize the data that has actually been measured. Below are some of the inferential statistics used in the research project: Pearson correlation, multiple linear regression coefficient of determination, Analysis of variance, T-Test and hypothesis testing.

### Pearson Correlation

The study aimed to determine the strength of the relationship between Accounts Receivable and revenue collection. The researcher computed the Pearson correlation coefficient to measure the level of relation between linearly related variables, and the confidence interval of the coefficient was calculated at a 95 percent confidence level with an error margin of 0.05. Coefficient of Correlation. The coefficient of correlation, denoted as, quantifies the strength and direction of the relationship between two variables. It ranges between -1.0 (perfect negative correlation) and 1.0 (perfect positive correlation). The study examined the following independent factors: Accounts Receivable and Correlation Matrix. Findings were presented in Table 4.26, which indicated how accounts receivable as a financial determinant related to revenue collection in public water companies.

Correlation helped us to determine the nature and direction of the relationship that exists between predictors Accounts Receivable and Revenue Collection as shown in Table 4.26 below. Significant and strong relationships were found with Accounts Receivable (.226\*\*,  $p < 0.01$ ; 2-tailed). The output indicated that accounts receivable had a weak positive relationship with revenue collection thus it is a financial determinant of Revenue Collection in Public Water Companies.

Table 4. 26: Correlation Matrix of accounts receivable on Revenue collection

Variable	“r” value	Revenue Collection	Remarks
Accounts Receivables	Pearson Correlation	.226**	Weak positive correlation
	Sig. (2-tailed)	.000	
	n	487	

### Multiple Linear Regression Model ANOVA Test of Hypothesis

Multiple linear regressions were run at (95%) percent confidence interval of 5% (0.05 margin of error) to show the multiple linear relationship between accounts receivable and revenue collection in public water companies. The decision was based on the following: If the p-value was less than 0.05, then the null hypothesis was to be rejected, and the alternative hypothesis was to be accepted; if the p-value was greater than 0.05, then the study would fail to reject the null hypothesis.

### Multiple Regression Coefficients of Variation

The study used multiple coefficients of variation, and the results for accounts receivable, among other variables, the study tested the conceptual model where the output of the tests was as follows ( $\beta_0, \beta_1$ ) were the coefficients of variations as bellow and e was error term. In the regression model and ( $x_1$ ) was independent variable was accounts receivables.

$$Y = \beta_0 + \beta_1 x_1 + e$$

$$Y = 42.192 + 0.620x_1 + e$$

Table 4.29 below results indicated the p- value of Accounts Receivable is less than 0.05 which implies that the study rejected null hypothesis and accepted the alternative hypothesis. indicated that accounts receivable has a significant positive impact on Revenue Collection of Public Water companies since it coefficient of 0.620 ( $\beta = 0.620$ ,  $p-v= 0.000$ ), with a con 42.192 as a constant or y intercept. These meant that there is a significant impact of Accounts Receivable on Revenue Collection, with  $\beta = 0.620$ , a coefficient that indicated a strong positive relationship with Revenue Collection in public water companies.

**Table 4.29 Multiple Regression Coefficients of variation between accounts receivable and revenue collection**

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	42.192	3.882		59.420	.000
Accounts Receivables	.620	.440	.622	3.530	.000

a. Dependent Variable: Revenue Collection

b. Independent variables: (Accounts Receivable,

### Hypothesis Testing

#### Hypothesis 1: Accounts Receivable

Null Hypothesis  $H_0$ : Accounts receivable does not have a significant impact on revenue Collection in Public Water Companies.

Alternative Hypothesis  $H_1$ : Accounts receivable has a significant impact on collection Collection in Public Water companies.

The specific objective of the study was to investigate the effect of accounts receivable on Revenue Collection in public water companies. The study tested the hypothesis that Accounts Receivable has no significant impact on Revenue Collection in Public Water companies.

The test was done through a logistic linear regression model as:  $Y_1 = \beta_0 + \beta_1 X_1 + e$ . Where;  $X_1$  represents Accounts Receivable

$Y$  represents Revenue Collection,

$(\beta_0, \beta_1)$  Are the beta coefficients at variable  $X_1$  and the y-intercept

$e$  represents the error term or standard error.

The number of models being used is (1) one. The total variance in the model under Table 4.30 below is equal to the Regression Plus Residual  $= 3.487 + 261.185 = 264.672$ .

The test was at 95% confident level and a significance level of  $\alpha = 0.05$  or 5%. The decisions were based on  $H_0$  P value  $< 0.05$ . Reject the null hypothesis and accept the alternative hypothesis. The results on the model  $\beta_1 = 0.012$ , which is less than the p-value of 0.05. The study concluded the rejection of the null hypothesis and accepted the alternative hypothesis, indicating that Accounts Receivable has a significant impact on revenue collection in public water companies. Refer to Table 4.30

**Table 4.30: Linear Relationship between Accounts Receivable and Revenue Collection.**

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	3.487	1	3.487	6.408	.012 <sup>b</sup>
Residual	261.185	486	.544		
<b>Total</b>	<b>264.672</b>	<b>487</b>			

- a. Dependent Variable: Proper accounts receivable management improves gross profit ratio over sales, hence results in Company Revenue Growth
- b. Predictors: (Constant), Days sales outstanding on accounts receivable are beyond the required days in the debt management policy.

The specific objective of the study was to investigate the effect of accounts receivable on Revenue Collection in public water companies. The study tested the hypothesis that Accounts Receivable has no significant impact on Revenue Collection in Public Water companies.

Table 4.32 below indicates that Accounts receivable Bata ( $\beta = 0.106$  unstandardized coefficients  $\beta$ ) revealed a weak positive relationship with Revenue Collection in Public Water companies. t-test analysis indicates a constant value of 3.938 with  $p$ -value 0.012, which was less than the significant value of 0.05. Statistically, the null hypothesis was rejected because  $p$ -value research  $p_v$  of 0.12,  $< 0.05$ . The alternative hypothesis was accepted. The study standardized beta for Accounts Receivable was 0.115, which implied that for every one-unit improvement in Accounts Receivable, there is a 0.115 improvement in Revenue Collection. The relationship implied that there was a significant and positive relationship between accounts receivable and Revenue Collection ( $\beta=.115, p=0.012$ ). The direction of the relationship between Accounts Receivable and Revenue Collection indicated an R-squared of 0.115, which implied that one unit of Accounts Receivable causes 11.5% a positive improvement in Revenue Collection of Public Water companies. This means that the relationship between Accounts Receivable and Revenue Collection is both positive and weak, and that the remaining 88.5 percent of the variation in Revenue Collection is due to other predictors.

**Table 4.32: Coefficients of Variation between Accounts Receivable and Revenue Collection**

Model	Unstandardized		Standardized TB	Sig. $\alpha$
	$\beta$	Std. Error	Beta	
(Constant)	3.938	.182	21.682	.000
Days' sales outstanding on accounts receivable are beyond the required days in the debt management policy	.106	.042	.115	.012

The specific objective of the study was to investigate the effect of accounts receivable on Revenue Collection in public water companies. The study tested the hypothesis that Accounts Receivable has no significant impact on Revenue Collection in Public Water companies.

Table 4.33 explains the coefficients of variation on a subset of Accounts Receivable as follows

$$Y_1 = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e$$

$$Y_1 = 3.938 + 0.051X_1 + 0.083X_2 + 0.088X_3 + 0.038X_4 + -0.009X_5$$

Where:

Y<sub>1</sub>=Accounts Receivables

X<sub>1</sub>= Accounts receivable ratio determines the liquidity position of a business organization in water companies

X<sub>2</sub>= Accounts receivable aging needs to be identified by Water Services Regulatory Board as a performance indicator

X<sub>3</sub>= the current debt management policy does not give powers to the water company to institute legal proceedings against the defaulters of water and sewerage services

X<sub>4</sub>= E-payments and credit reference bureaus on revenue collection are weak in water companies

X<sub>5</sub>= The use of Credit Reference Bureaus and factoring of outstanding debts will improve efficiency in revenue collection

The output of Table 4.33 above indicated that the accounts receivable ratio determines the liquidity position of business organizations in water companies ( $\beta = 0.051$  was found to be weakly positively related to the Revenue Collection of Public Water companies. From the t-test analysis, the t-value was found to be ( $\beta=1,112$ , sig 0.670). Statistically, this null hypothesis was rejected because  $p < 0.05$ . Thus, the study accepted Accounts receivable ratio determines the liquidity position of business organizations in water company's beta of 0.051, which implies that for every one-unit improvement in the Accounts receivable ratio determines liquidity position of business organization in water companies, there is .051 improvements in Revenue Collection in Public water companies.

The relationship is significant, with a weak positive correlation between the Accounts Receivable ratio and Revenue Collection ( $\beta = .051$ ,  $t = 1.112$ ) in water companies. The direction of the relationship between Accounts receivable ratio indicated that a weak positive direction with a Partial Correlation of 0.051, which means that there is a low positive correlation between Accounts receivable ratio, which determines the liquidity position of business organizations in water companies in Public Water companies.

This is in support to Jim Frost (2020), introduction to statistics which indicated that the strength of the relationship between two variables lies between -1 to +1 and indicated that the direction of the relationship is perfectly positive when  $r$  is =+1, fairly correlated =0.8, moderately correlated =0.7,  $\geq 0.5$ , low correlated = 0.5  $\geq 0.3$  and  $r=-1$  is a perfect correlation. Accounts

receivable aging needs to be identified by the Water Services Regulatory Board as a performance indicator, indicated by  $\beta = 0.083$ , which was found to be a weak positive correlation with Revenue Collection of on ( $\beta = 0.083, \alpha = 0.69$ ).

The current debt management policy does not give powers to the water companies to institute legal proceedings against the defaulters of water and sewerage services. The study indicated a  $\beta = 0.088$ , found to be a weak positive correlation with Revenue Collection ( $\beta = 0.088, \alpha = 0.59$ ). The indicator implied that for every one unit of current debt management policy, there is .083 improvements in Revenue Collection in public and private water companies.

The direction of the relationship between E-payments and credit reference credit reference bureaus on revenue collection is weak in water companies, with  $\beta = 0.038$ , indicating a weak positive correlation with Revenue Collection. ( $\beta = 0.038, \alpha = 0.415$ ). E-payments and credit reference bureaus on revenue collection is weak in water companies as performance indicator implies that for every one-unit improvement in the for every one-unit E-payments and credit reference bureaus on revenue collection is weak in water companies as performance indicator in water companies, there is .083 improvements on Revenue Collection in Public water companies.

The use of Credit Reference Bureau and factoring of outstanding debts will improve efficiency in revenue collection, as indicated by  $\beta = -0.009$  which was found to be a weak negative correlation with Revenue Collection. ( $\beta = 0. -0.009, \alpha = 0.0849$ ). The use of credit reference bureaus and factoring of outstanding debts will improve efficiency in revenue collection. The results indicated that in every unit of use of credit reference bureaus and factoring of outstanding debts, there is a reduction in revenue collection in water companies. The relationship between Accounts Receivable and Revenue Collection is an inverse relationship and has no improvement on the liquidity position of water companies.

*Table 4.33: Correlation Coefficient of Accounts Receivable on Revenue Collection of Public Water Companies*

<b>Statement</b>	<b>Beta</b>	<b>T</b>	<b>Sig.</b>	<b>Partial Correlation</b>	<b>Collinearity Statistics</b>	<b>Tolerance</b>
The accounts receivable ratio determines the liquidity position of a business organization in water companies	.051 <sup>b</sup>	1.112	.267	.051		.995
Accounts receivable aging needs to be identified by the Water Services Regulatory Board as a performance indicator	.083 <sup>b</sup>	1.819	.069	.083		.988

The current debt management policy does not give powers to the water company to institute legal proceedings against the defaulters of water and sewerage services	.088 <sup>b</sup>	1.893	.059	.086	.936
E-payments and credit reference bureaus in revenue collection are weak in water companies	.038 <sup>b</sup>	.815	.415	.037	.943
The use of credit reference bureaus and the factoring of outstanding debts will improve efficiency in revenue collection	-.009 <sup>b</sup>	-.191	.849	-.009	.948

- a. Dependent Variable: Proper accounts receivable management improves gross profit ratio over sales, resulting in company revenue growth
- b. Predictors in the Model: (Constant), Days sales outstanding on accounts receivable are beyond the required days in the debt management policy

## **SUMMARY, CONCLUSION, AND RECOMMENDATION**

### **Summary**

The study found that Accounts Receivable had an influence on Revenue Collection in Public Water companies. It revealed that there was a positive impact of accounts receivable on Revenue Collection of Public water companies.

### **Effects of Accounts Receivable on Revenue Collection**

Research results indicated that there was a significant positive influence of Accounts Receivable on Revenue Collection of Public Water companies, except for one sub-construct. Respondents on the use of credit reference bureaus and factoring of outstanding debts had a negative impact on revenue collection. The findings of the study also revealed that there was a strong positive relationship between accounts receivable and revenue collection in public water companies.

The study concluded that Accounts Receivable is a critical key financial determinant of revenue collection in Public water companies. These findings were in line with studies done by Kyoma *et al* (2022) and Foster *et al* (2017), who concluded that accounts receivable management differs in different organizations and has a positive impact on revenue collection. The study also agreed with Joshua (2016) on the effects of accrued balances, which affect the accounts receivable, thus posing more influence on Revenue Collection.

The p-value for Accounts Receivable was found to be 0.000, which is less than the significance level of 0.05 ( $p < 0.05$ ). which meant that the null hypothesis was rejected and accepted the alternative hypothesis or research study hypothesis. The result indicated that the Pearson Correlation coefficient of 0.226\*\*, which represented a weak positive relationship between Accounts Receivable and Revenue Collection in Public companies. Using the rank correlation,

it is concluded that a unit of Accounts Receivable causes 11.5% change in Revenue Collection, hence Accounts Receivable is a financial determinant of Revenue Collection in public water companies.

### **Conclusion of the study**

The findings indicated a positive relationship between accounts receivable and Revenue Collection. liquidity position and boosts revenue growth in Public Water Companies. The study concludes that accounts receivable is a relevant but limited determinant of revenue collection. Descriptive results show that 88% of respondents perceive receivables as important, underscoring their practical role in financial management, though variability in standard deviations reveals inconsistencies in stability across indicators. Inferential analysis confirms a positive but weak correlation, with regression results indicating limited explanatory power. This contrast between practitioner perception and statistical weakness suggests that accounts receivable functions more as a supportive determinant than a dominant predictor. Effective receivable management can contribute positively to revenue outcomes, but stronger performance requires integration with other financial and operational strategies, such as expenditure control, billing efficiency, and cash flow management.

### **Recommendations**

Objective one: Investigating the impact of accounts receivable on revenue collection in public water companies.

### **Managerial Recommendations**

The study recommends that management in Public water companies should prioritize strengthening accounts receivable systems by adopting digital billing platforms, automating customer records, and enforcing timely debt recovery strategies. Evidence from your study highlights that inefficiencies in revenue collection directly undermine liquidity and sustainability, with high levels of accounts receivable compounding the problem. Management must therefore implement performance-based incentives for staff, establish clear disconnection policies for chronic defaulters, and improve customer segmentation to tailor collection approaches. These measures will enhance operational efficiency, reduce arrears, and secure the financial stability necessary for sustainable water service delivery.

### **Policy Recommendations**

Policy makers should develop and enforce regulatory frameworks that standardize accounts receivable management across public water companies in Kenya. The findings demonstrate that fragmented oversight and weak enforcement contribute to persistent revenue leakages, limiting the sector's ability to achieve cost recovery. Centralizing revenue collection through agencies such as the Kenya Revenue Authority, coupled with compliance audits and tariff harmonization, would strengthen accountability and reduce political interference. By embedding receivables performance indicators into national water sector policies, the

government can ensure that public water companies operate transparently, improve liquidity, and safeguard the long-term sustainability of water supply systems

### **Areas of Further Studies**

Scholars should expand empirical research on the relationship between accounts receivable management and revenue collection efficiency in the water sector. The study identifies critical gaps in understanding customer payment behavior, receivables aging, and the impact of digitalization on compliance. Future research should employ predictive models, comparative case studies, and behavioral economics frameworks to generate actionable insights for both managers and policymakers. By addressing these gaps, academic work can provide evidence-based strategies that strengthen liquidity, enhance sustainability, and build confidence among financiers investing in public water companies for compliance with statutory social economic requirements as stipulated in the Constitution 2010, article 43 (1)(b), and in compliance with Millennium Development Goal (MDG) 6 in Vision 2030.

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