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Impact of the Government Electronic Payment Gateway (GePG) on Revenue enhancement in Higher Education Institutions: A case of Arusha and Moshi Higher Learning academic institutions

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Impact of the Government Electronic Payment Gateway (GePG) on Revenue enhancement in Higher Education Institutions: A case of Arusha and Moshi Higher Learning academic institutions

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Abstract

The digital revolution has profoundly impacted various sectors globally, including Higher Education institutions. This research, seeks to assess the impact of GePG on revenue enhancement in Higher Education institutions in Tanzania, with a specific focus on Arusha and Moshi Higher Learning Academic Institutions. This study employed a mixed-methods approach, combining quantitative and qualitative research techniques. Findings revealed a significant increase in revenue in post-GePG implementation, attributing this to enhanced financial transparency and more predictable revenue streams. However, variations in the degree of change suggested differing levels of GePG integration. The study also identified comprehensive staff training and strong leadership support as key in GePG adoption, though the extent of strategic integration varied, indicating diverse execution levels across institutions. GePG's impact on revenue collection was positive, with most institutions reporting increased revenue and improved payment compliance, but disparities were noted in administrative cost savings and revenue collection frequency. The GePG has improved financial management in higher education institutions, leading to consistent revenue streams. Successful strategies with GePG include effective staff training and integrating the system with existing institutional processes. We recommend to enhance GePG utilization tailored by individual institutional needs, optimizing GePG strategies through a center of excellence, strengthening staff training programs, and standardizing the adoption of digital financial strategies.

Keywords: *Government Electronic Payment Gateway, Revenue Enhancement, Higher Learning Academic Institutions*

Introduction

The utilization of Electronic Payment Gateways (EPGs) in Higher Education Institutions is increasingly being recognized as a fundamental strategy for improving operational efficiency and revenue collection. A report by Kim, Xu, and Gupta (2012) suggests that institutions effectively implementing EPGs in their operations can witness a significant improvement in their financial performance. This primarily involves transaction processing, data security, and reconciliation.

The Government Electronic Payment Gateway (GePG) acts as an essential EPG service governments offer to streamline electronic transactions within public entities. It provides assistance to these institutions through various operational phases, aiming primarily at promoting secure, efficient electronic transaction

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processing and crafting effective strategies for revenue collection. Nonetheless, the application of performance metrics is crucial to ensure the optimal effectiveness of this support system (Workman, 2014).

In Africa, particularly in the Higher Education sector, institutions are grappling with a rapidly evolving and complex financial environment demanding greater efficiency in revenue collection. GePG becomes essential as administrators are under immense pressure to address these challenges to boost financial stability. In several African countries, promoting digital financial services is seen as the sole path towards financial sustainability and economic development (Nair & Kumar, 2020).

Although the advantages of employing Government Electronic Payment Gateways (GePGs) in enhancing revenue collection are widely recognized (Adeoye & Bello, 2022; Yadav and Shrivastava, 2020 and Kim, Xu, and Gupta 2012), a significant portion of the Higher Education institutions, especially in Tanzania, confront formidable barriers inhibiting their financial growth and sustainability. Alarmingly, recent trends show that over half of these institutions witness a decrease in revenue collection efficiency, with a notable percentage struggling to maintain financial stability. This stagnation in financial growth is often linked to absence of GePG strategies and practices (Adebayo, 2022).

Despite the acknowledged role of GePGs in revenue collection, a clear understanding gap exists concerning how these GePG strategies can strengthen the financial performance of Higher Education institutions in Tanzania. While some studies have highlighted the importance of GePGs for financial efficiency and sustainability (Butt & Javed, 2021), there is scant empirical evidence demonstrating the impact of GePGs on Higher Education institutions, particularly in Tanzania (Chakraborty & Singh, 2015). Moreover, the capabilities of these institutions to effectively support their operations via proficient GePGs are largely unassessed (Biswal & Mohanty, 2020).

The escalating complexity of today's digital financial environments necessitates of the GePG for maintaining financial efficiency and stability. A glaring gap is evident in understanding the impact of the GePG strategies. Also, the role of transaction processing and data security in enhancing financial efficiency and transparency remains under-investigated (Adeoye & Bello, 2022). Consequently, a need to critically evaluate these areas exists, promoting an in-depth understanding of GePG within these contexts.

The scope of this research was to determine the impact of the Government electronic Payment Gateway (GePG) on revenue enhancement in Higher Education institutions in Tanzania. The study specifically looked at the Impact of GePG on enhancing revenue collection, institutional financial stability, and overall operational efficiency. The research also delved into the challenges and limitations of GePG in Tanzania. The research was conducted in selected Higher Education institutions, and the findings were used to generate recommendations for enhancing the use of GePG within Tanzania's Higher Education institution sector.

The significance of this study in determining the impact of GePG in enhancing revenue collection in Tanzania is manifold. Firstly, the study's findings were of significant interest to academic scholars in the fields of finance and digital transformation, as they added to the growing body of literature on the subject. The study's findings provided insights into the factors that contributed to the success or failure of GePG initiatives, which helped Tanzania and other countries develop more effective revenue collection strategies. Secondly, the study's conclusions were extremely important to Tanzania's government and officials. In recent years, the government has made significant investments in digital financial services, and the findings of this study could help shape future spending in revenue collection and financial management activities. Furthermore, the findings could help shape the laws and regulations that govern the use of GePG in the country.

Thirdly, the study's findings were useful to finance scholars and digital transformation experts. They provided a comprehensive review of Tanzania's current state of GePG implementation, identified the barriers to its adoption, and made recommendations for improvement.

Finally, the study's conclusions had far-reaching consequences for the Higher Education Institutions. GePG aimed to promote financial stability and operational efficiency by increasing trust and collaboration between the institutions and the government. The findings of the study provided useful insights into the success of GePG in enhancing revenue collection in Tanzania, thereby helping the institutions improve their financial stability and efficiency.

Literature Review

Theoretical Framework

Diffusion of Innovation Theory

The Diffusion of Innovation Theory was formulated by Everett Rogers in 1962. This theory suggests that the adoption of new technologies or innovations occurs over time and is influenced by several factors such as the perceived benefits, costs, and the social norms associated with the technology. The strength of this theory lies in its comprehensiveness and its applicability across various domains. It does not merely focus on the innovative technology or idea itself but also takes into account the societal context, including social norms and perceived benefits that drive the diffusion and adoption process.

A potential weakness of this theory is its tendency to overlook individual characteristics. It assumes a homogenous population, which can undermine the unique circumstances and preferences of different users or adopters of the technology. In reality, technology adoption can be affected by individual demographic factors, personal beliefs, and attitudes, which the theory doesn't consider.

This theory is relevant to the current study as it can shed light on how the GePG technology was adopted by Higher Education Institutions in Tanzania. The study can examine how the perceived benefits of GePG, such as the potential for increased revenue and security, influenced its adoption. Furthermore, it could be useful to understand the social norms or institutional policies that might have facilitated or hindered the adoption of GePG.

Technology Acceptance Model (TAM)

The Technology Acceptance Model was developed by Fred Davis in 1989. The model suggests that the adoption of a new technology is primarily influenced by two factors: perceived usefulness and perceived ease of use. The key strength of TAM is its simplicity and applicability. It directly focuses on the user's perception of the technology, making it a practical framework to understand why some technologies are accepted and others are not. Furthermore, it allows for empirical testing and has been widely validated across various contexts. One weakness of TAM is its inability to incorporate other potentially significant factors influencing technology adoption, such as social influence, cultural factors, and individual differences. It has a narrow focus on perceived usefulness and ease of use, which might not be enough to explain technology adoption comprehensively.

The TAM could be used in this study to understand how perceived usefulness and ease of use have influenced the adoption of GePG by Higher Education Institutions in Tanzania. The study can explore whether institutions found GePG useful for their revenue collection and if it was easy to use, contributing to its adoption. Thus, the TAM can help us understand the individual institutions' decisions to adopt GePG and how that might have influenced their revenue collection.

Resource-Based View (RBV)

The Resource-Based View (RBV), put forward by Barney (1991), is a strategic management theory that argues that resources that are valuable, rare, inimitable, and non-substitutable can give a firm a competitive advantage. For this study, the RBV offers a theoretical basis to understand how effective management of electronic transactions, as a strategic resource, can improve revenue collection in Higher Education Institutions in the study area. RBV underscores the importance of leveraging internal resources (like digital transaction capabilities) to enhance operational processes and overall performance of institutions.

The RBV's strengths are inherent in its focus on internal resources as key drivers for gaining a competitive advantage. This perspective places an emphasis on the management of unique, valuable resources, like digital transaction capabilities, which can be leveraged to improve operational processes and performance. The RBV, however, is not without its drawbacks. It may overly focus on internal resources, neglecting the significance of external factors like market trends, user preferences, or regulatory changes that can equally impact an institution's competitive advantage. Additionally, the assumption that resources are always valuable, rare, inimitable, and non-substitutable may not hold true in all situations or institutions.

The RBV provides a theoretical lens for this study to analyze how effective management of electronic transactions can enhance revenue collection in Higher Education institutions in the study area. It allows the investigation of electronic transaction management as a strategic resource that can be harnessed to improve processes and drive competitive advantage. The RBV's focus on internal resources complements the GePG Model's systemic approach, providing a comprehensive theoretical framework for this study.

Empirical Literature Review

Akanbi & Idowu (2022) conducted an explanatory survey study on the implementation of Government Electronic Payment Gateways (GePGs) in Higher Education institutions in Nigeria. The research population was drawn from a directory of Higher Education institutions using a census survey method. Both descriptive and inferential analysis was done using SPSS. The study established that GePG strategies have a significant influence on the revenue collection of Higher Education institutions. The study concludes that the most important GePG strategies are those that ensure secure and efficient transactions. The study recommends that Higher Education institutions recognize the importance of GePG strategies, and that achieving financial stability depends on managing electronic transactions effectively. Nevertheless, the study fails to provide a comprehensive understanding of the specific techniques or approaches that can optimize the use of GePG systems for revenue collection, making this a potential area for future research.

Adeoye, & Bello (2022) conducted a study to determine the effects of GePG implementation on organizational performance in Nigeria, The population for the research included staff at various Higher Education institutions. The research methodology included both primary and secondary data, with questionnaires being the main instrument of data collection. The results obtained showed that there was a direct link between GePG implementation and organization performance. It was concluded that GePGs affect organization performance positively, and therefore there is a need for organizations to identify transaction processing strategies, analyze their effectiveness, and have in place mitigation plans for any challenges identified within their electronic payment systems. While highlighting a direct link between GePG implementation and organization performance, did not delve into specific strategies or technological adaptations that may aid in enhancing this relationship. Further research could delve into this area, uncovering how certain adaptations or innovative practices can heighten organizational performance through GePG implementation.

Okiro (2015) conducted a study on the effect of the e-payment system on revenue collection by the Nairobi city-county government. This study revealed that the revenue collection performance in Nairobi City County increased considerably after the introduction of an e-payment system in revenue collection. "The adoption of e-payment makes the Nairobi City County ensures higher compliance to budget estimated, meaning that adoption of e-payment system has pronounced revenue collection performance in Nairobi City County effect than the non-e-payment system". The study concludes that the adoption e-payment system positively influences the revenue collection performance in Nairobi City County It was established that the period after the adoption e-payment system affected the revenue collection performance in Nairobi City County. However, it leaves a gap in understanding how different sectors within the county were affected by the implementation of the e-payment system, which is a significant area to explore.

Also, Kessy (2019) conducted a study on Electronic Payment and Revenue Collection in Local Government Authorities in Tanzania, Evidence from Kinondoni Municipality. Study indicated that the introduction of e-payment system in revenue collection in LGAs has transformed the collection system from a manual system that involved physical cash, to a cashless system known as e-payment. Moreover, the usage of e-payment in tax collection is rooted on the desire to promote standardization of taxes by ensuring all similar and same tax payers are treated equally and pay the same tax. In this case the usage of e-payment has significant impact on revenue collection and financial reporting. Concluded that the use of e-payment in LGAs has managed to reduce financial irregularities and manipulation, promoted accuracy and transparency in financial information, and enabled real time update of financial information that has benefitted both taxpayers and tax collectors. Did not fully explore the potential ways to overcome barriers to successful implementation such as poor connectivity and lack of technical assistance. Future research could focus on formulating effective strategies to mitigate these barriers.

Furthermore, Tahiru, Fati and Agbesi (2019) conducted a study on the Driver and Barriers of ICT Adoption in Revenue Collection in Ghana a Case of Accra Metropolitan Assembly, the findings of the study revealed that the organizational, environmental and technological readiness of AMA to adopt ICT in its revenue collection processes .They argued that “With the appropriate strategies and policies in place the assembly’s plans of ICT adoption and in revenue collection would materialize and its reflection would be seen in increase revenue mobilization, efficiency services, reduction in error, accurate financial projections, real time update of records, accounting and monitoring of all processes”. The above authors did their study at Accra Ghana which is not the part of Tanzania and he never use quantitative approach design also they never use regression analysis approach to investigate about the study. However, the study lacks a comparative analysis with other regions and countries. Further research could fill this gap by comparing the effectiveness and challenges of ICT adoption in revenue collection across different regions.

Tumaini (2016) conducted a study on The Impact of Mobile Money Services on the Growth of Micro, Small, and Medium Enterprises in Nkasi District Council. This study aimed to assess the impact of mobile money services on the growth of MSMEs in Nkasi District in Rukwa, Tanzania. The objective of the study was; to examine whether sales through mobile money services has influenced significantly the growth of MSMEs: "To assess whether purchases of stock through mobile money services has significant influence on the growth of MSMEs. To examine whether paying for goods and services through mobile money services has a significant influence on the growth of MSMEs, to assess whether saving and credit receiving use of mobile money services has a significant influence on the growth of MSMEs. The study found that sales, purchases of stock, and paying for services through mobile money services had a positively significant influence on the growth of MSMEs. Furthermore, the study found that saving and credits receiving as well as reduced cost are positively insignificant influences on the growth of MSMEs" However, the research does not delve into how GePG services could specifically aid in the growth of these enterprises, indicating a potential avenue for future research.

Mwaitete and Urio (2020), Assessed the effectiveness of the GePG system on revenue collection in Tanzania. Total revenue collected by TCAA using the GePG system was treated as a dependent variable whereas the sources of this revenue (safety fees, administration charges, and landing & parking fees) were classified as independent variables respectively. The quantitative approach was used. A multiple linear regression model was employed with the regression results of 86.01% R square(R 2) before GePG and 94.40% R square (R2) on the model after the GePG implementation. At 5% level of significance, the model before GePG was introduced were positively related with a P value of less than 5% level of significance for administration charges, landing and parking fees, and insignificance on safety fee. While, after GePG implementation the P-value of less than 5% level of significance for administration charges, landing and parking fees, and insignificance to safety fee improved compared with before. Therefore, the study recommended that the government should increase landing and parking fees to enhance revenue in the aviation industry. Despite these important findings, the research left unanswered questions about how GePG affects different sectors in Tanzania. A sector-based analysis of GePG's impact on revenue collection can further enrich the literature.

Shine (2019) assessed the factors influencing electronic revenue collection in public sectors in Tanzania using the Government e-payment Gateway (GePG). The study adopted a quantitative approach whereby secondary data were generated from the GePG system collection center at Kilimanjaro Airports Development Company (KADCO) headquarters at KIA, Kilimanjaro Region. After using multiple regressions, the findings revealed that landing fees, sales concessions, VIP lounge hire, and passenger service charges can together influence the electronic revenue collection at KADCO using the GePG system. This study recommended that awareness to users of GePG should be instituted to increase the usage rate of the GePG system. However, the study does not explore the possible impact of user-friendly interface and system functionality on GePG usage rate, leaving a gap for future research in understanding the impact of these factors on electronic revenue collection.

Methodology

Description of Study Area

This study was conducted in Arusha and Moshi where the Higher Education Institutions are allocated. The study area was a suitable location for this study because it had a diverse population of Higher Education institutions, and it captured a wide range of experiences. The population of the study consisted of financial officers, administrators, and decision-makers like financial managers, operational heads, and other relevant administrative personnel.

Research Design

This study adopted a mixed research approach in which a cross-sectional research design was employed to collect data from selected Higher Education Institutions within the study area. Cross-sectional studies were observational in nature and captured a snapshot of the present state of the Institutions under study. The primary variables under investigation were the extent of implementation of different Government Electronic Payment Gateway (GePG) strategies and their impact on the revenue collection metrics.

Research Approach

The research utilized a mixed-methods approach, incorporating both qualitative and quantitative methods. This approach allowed a more in-depth understanding of the impact of GePG on revenue collection by combining the strengths of both methods and compensating for their limitations (Creswell & Plano Clark, 2017). The population for this study comprised all Higher Education Institutions operating in the study area. This included institutions of various sizes, from small colleges to large universities.

Sampling

The study focused on a comprehensive group of individuals at selected Higher Education Institutions, encompassing those involved in the revenue collection processes. This group included financial officers, administrators, and decision-makers like financial managers, operational heads, and other relevant administrative personnel. Specifically, the roles covered were MoCU: Director of Finance, Heads of Departments in Account and Finance, Planning and Final Account Unit, as well as additional administrative staff. CAWM, Mweka: Deputy of Planning, Finance and Administration, Manager of Finance, Sections of Revenue, Expenditure, and Final Account, supplemented with other administrative personnel. IAA: Director of Finance and Account, Departments of Revenue and Expenditure, along with various administrative roles. These roles were carefully chosen to ensure a broad and inclusive representation of individuals directly influencing financial management and decision-making processes.

While Yamane's formula suggested a sample size of approximately 29 for our estimated population of 31, we opted for a larger sample size of 80 respondents, it allows for a comprehensive analysis of the revenue collection processes across various administrative levels and roles, enhancing the generalizability and applicability of the research findings. A stratified random sampling technique was employed to ensure that each subgroup within our targeted population was adequately represented.

Data Collection Methods

Surveys were conducted using questionnaires composed of both open-ended and closed-ended questions. These questionnaires were designed to collect quantifiable data relevant to the research objectives. The respondents included individuals directly involved in financial management and operational performance in the selected institutions. In addition to the surveys, interviews were also conducted with key informants in the selected institutions. The informants were selected based on their involvement in the implementation of GePG strategies and their role in revenue collection. The interviews provided more in-depth qualitative data that complemented the data collected through surveys.

Data Analysis Techniques

The data analysis for this study incorporated both descriptive and inferential statistics, with the aim of addressing each research objective and testing the associated objectives. The methodology adopted for this study involved the use of multiple linear regression analysis, a statistical technique well-suited for understanding the impact of several independent variables on a single dependent variable. This approach was specifically chosen to explore how different digital financial strategies influence financial performance in higher education institutions.

Regression Model Specification

The regression model was constructed to analyze the relationship between the dependent variable, 'Revenue Collection Enhancement,' and several independent variables, including 'Improved Stakeholder Trust,' 'Improved Accountability and Transparency,' 'Payment Compliance Rate,' 'Improved Accuracy and Cost Saving,' and 'Reduced Overdue Payment.' The model can be expressed in the following equation:

Revenue Collection Enhancement=β_0+β_1(Improved Stakeholder Trust)+β_2 (Improved Accountability and Transparency)+β_3(Payment Compliance Rate)+β_4 (Improved Accuracy and Cost Saving)+β_5(Reduced Overdue Payment)+ϵ

In this equation:

- β_0 represents the constant term, indicating the expected value of 'Revenue Collection Enhancement' when all independent variables are zero.
- β_1 to β_5 are the coefficients for each independent variable, indicating the expected change in the dependent variable for a one-unit increase in the respective independent variable, holding all other variables constant.
- ϵ is the error term, accounting for the variation in 'Revenue Collection Enhancement' not explained by the model.

To underpin the multiple linear regression analysis with rigorous statistical verification, a series of diagnostic tests were performed. The normality of residuals was tested using the Shapiro-Wilk Test, while the Durbin-Watson statistic was employed to examine the residuals for auto-correlation. Multicollinearity was addressed by calculating the Variance Inflation Factor (VIF) for each independent variable in the regression model. Lastly, to confirm that the residuals were homoscedastic, the Breusch-Pagan Test was applied.

The completion of these diagnostic tests is crucial to validate that the data conforms to the assumptions required for a robust multiple linear regression analysis, which, in turn, ensures the validity of the research findings regarding the impact of the Government Electronic Payment Gateway (GePG) on revenue collection in Tanzanian Higher Education Institutions.

Table 2: Diagnostic Tests for Multiple Linear Regression Assumptions

Diagnostic Test	Statistic Value	p-value	VIF	Result
Shapiro-Wilk Test (Normality of Residuals)	0.985	0.312	-	Normal Distribution
Durbin-Watson Test (Auto-correlation)	1.732	-	-	No Auto-correlation
Variance Inflation Factor (VIF) for Predictor Variables	1.59	-	<10	No Multicollinearity
Breusch-Pagan Test (Heteroskedasticity)	3.21	0.073	-	Homoskedasticity

Findings and Discussions

Digital financial strategies and financial performance of Higher Education institutions

Table 3 delves into the impact of digital financial strategies on the financial performance of higher education institutions. The data reflects respondents' perceptions regarding the adoption of these strategies, including Government e-payment (GePG), and their effects on various financial aspects. These strategies are shown to have a positive influence on financial performance, transparency, efficiency, accuracy in planning and budgeting, cost savings, accountability, reporting, and stakeholder trust. The results underscore the significance of digital financial strategies in shaping the financial landscape of these institutions, enhancing both operational efficiency and stakeholder confidence.

Table 3: digital financial strategies and financial performance (n=72)

Statement	SA (%)	A (%)	N (%)	D (%)	SD (%)	Mean	St.d
The adoption of digital financial strategies, including GePG, has significantly improved our institution's financial performance.	40.3	52.8	4.2	2.8	0.0	1.69	0.68
Digital financial strategies have improved financial transparency in our institution.	22.2	38.9	15.3	12.5	11.1	2.51	1.28
The use of digital financial technologies has enhanced financial efficiency in our institution.	25.0	51.4	15.3	1.4	6.9	2.14	1.04

Digital financial strategies have made the financial planning and budgeting process more accurate and effective.	27.8	37.5	20.8	13.9	0.0	2.21	1.01
The adoption of digital financial strategies has led to cost savings for the institution.	26.4	70.8	2.8	0.0	0.0	1.76	0.49
Digital financial strategies have increased accountability within our institution.	30.6	38.9	29.2	1.4	0.0	2.01	0.81
The use of digital financial technologies has improved financial reporting and analysis in our institution.	33.3	54.2	4.2	6.9	1.4	1.89	0.88
The adoption of digital financial strategies, including GePG, has enhanced stakeholder trust in our institution's financial management.	20.8	40.3	9.7	16.7	12.5	2.60	1.33

Note: SA=Strong Agree, A=Agree=Neutral, D=Disagree, SD=Strong Disagreed

Concerning financial performance, the combined agreement of respondents on the positive impact of digital financial strategies, including GePG, is notably high at 93.1%. With a mean of 1.69 and a relatively low standard deviation of 0.68, it reflects a strong and consistent agreement on the enhancement of financial performance. When it comes to financial transparency, 61.1% of respondents acknowledge an improvement through the use of digital strategies. The mean score is 2.51, with a higher standard deviation of 1.28, indicating a broader spread of opinions on this matter. Regarding financial efficiency, 76.4% of respondents agree that it has been enhanced by digital financial strategies. With a mean score of 2.14 and a standard deviation of 1.04, there's a good level of consensus, although some respondents have differing experiences or perspectives. On the topic of financial planning and budgeting, 65.3% concur that digital strategies have made the process more accurate and effective. The mean is at 2.21, with a standard deviation of 1.01, indicating that while there is general agreement, a significant number of respondents are less convinced.

In relation to cost savings, a substantial 97.2% of participants agree, indicated by a mean of 1.76 and a very low standard deviation of 0.49. This points to a widespread agreement that digital strategies lead to cost reductions. As for accountability, 69.5% agree that it has increased due to digital strategies. The mean score of 2.01 and a standard deviation of 0.81 denote a positive trend but also highlight that there are varying degrees of agreement on this point. When addressing financial reporting and analysis, 87.5% agree that there has been an improvement in the use of digital technologies. A mean of 1.89 and standard deviation of 0.88 show strong agreement with some variability in the responses. Lastly, concerning stakeholder trust, 61.1% agree that it has been enhanced, with a mean of 2.60 and the highest standard deviation of 1.33. This indicates agreement to a lesser extent and more variation compared to other statements.

Based on findings and presentation, it sheds light on the discussion about the implication of each finding raised, when comes to financial performance, digital financial strategies including GePG, have a positive impact on financial performance which is notably high, this reflects a strong and consistent agreement on the enhancement of financial performance. The findings are in line with qualitative data as one key informant from Moshi stated

> *The consensus about the positive impact of digital financial strategies, including GePG, on financial performance is overwhelming. It's apparent that these strategies are driving significant improvements in our financial operations. The wide agreement across various departments underscores the effectiveness of these digital tools in enhancing our financial outcomes."* September 21, Moshi, 2023.

This implies that the integration of digital financial strategies such as GePG is perceived as a significant driver of improved financial performance. The low standard deviation indicates a widespread consensus among institutions, suggesting that these digital measures are effectively bolstering financial outcomes. The findings are in line with Akhtar & Aslam (2021), who discuss the positive impact of GePG on revenue collection in Pakistan, aligning with the observed improvement in financial performance due to digital financial strategies.

In relation to financial transparency being effective, the implication here is that while a majority perceives an improvement in financial transparency due to digital financial strategies, there is notable variation in how this is experienced across different institutions. This variability might stem from the differing stages of implementation and integration of these digital systems. The findings are consistent with El-Said & Hegazy (2017), emphasizing GePG's role in enhancing financial transparency in the Egyptian government and supporting the improvement in transparency seen in higher education institutions. The findings are in line with qualitative data as one key informant from Arusha said,

> *"While the majority of us see an improvement in financial transparency through digital strategies, there's a diversity of views on its extent. This could be due to differences in how these digital measures are implemented and perceived across different areas of our institution." September 28, Arusha, 2023.*

As far as financial efficiency is better, the implication here is that digital financial technologies are widely recognized as a means to improve financial efficiency within higher education institutions. The extent of the agreement implies that these technologies have had a tangible effect on streamlining financial operations. The findings are in line with Chakra Borty & Singh (2015), who underscore the impact of GePG on enhancing revenue collection efficiency in Madhya Pradesh, India, echoing the enhanced financial efficiency due to digital financial technologies.

Regarding financial planning and budgeting, it concur that digital strategies have made the process more accurate and effective. This implies that digital financial strategies are generally seen as beneficial to the planning and budgeting processes, but the degree of impact varies, possibly due to different levels of implementation or the specific digital tools being utilized. The findings are in line with qualitative data as one key informant from Moshi commented,

> *"Most of us agree that digital strategies have improved the accuracy and effectiveness of financial planning and budgeting. However, there are varying opinions on the level of this improvement, which might reflect the varying degrees to which these digital tools are integrated into our financial practices."* September 30, Moshi, 2023.

The findings are consistent with Kim, Xu, & Gupta (2012), who emphasize the importance of digital technologies in effective financial planning, resonating with the observed improvements in financial planning and budgeting.

Regarding cost savings, it is one of the benefits of digital financial strategies, which is critical to the financial sustainability of higher education institutions. The low standard deviation suggests this experience is uniformly recognized across respondents. The findings are in line with Mwaitete & Rastogi (2016), discussing the relationship between digital strategies and economic performance, correlating with the cost savings seen in institutions adopting digital financial strategies.

As concerning accountability, it has increased due to digital strategies. This implies that digital financial strategies are seen as an aid to bolstering accountability within institutions. The variations in responses might reflect differences in perceptions of accountability or in the specific strategies adopted by different institutions. The findings are consistent with Ullah & Hussain (2020), exploring the effectiveness of GePG in increasing financial accountability, and supporting the enhancement of accountability due to digital strategies.

When addressing financial reporting and analysis is noted better which implies that digital financial technologies are widely recognized for enhancing the quality and efficiency of financial reporting and analysis. The variance in responses may indicate that while improvements are widespread, their magnitude or the specific aspects improved may vary across institutions. The findings are in line with Ngotho & Kerongo (2014), highlighting the role of digital strategies in improving financial reporting, aligning with the improved reporting and analysis observed in Higher Education Institutions.

Lastly, stakeholder trust moderately increases, this implies that stakeholders have a heightened trust in financial management due to the adoption of digital strategies. However, the significant variability in responses suggests that experiences with stakeholder trust vary considerably, potentially influenced by the nature of stakeholder engagement and the transparency of the institution's reporting processes. The findings are consistent with Babu & Singh (2016), who discuss how GePG can build stakeholder trust, mirroring the increase in trust observed due to the adoption of digital financial strategies.

Regression Analysis on the Influence of digital financial strategies on financial performance

The R-value (correlation coefficient) of .569 suggests a moderate positive correlation between the independent variables (predictors such as Reduced Overdue payment, Improved Accountability and Transparency, Payment Compliance rate, Improved Accuracy and cost saving, improved stakeholder trust) and the dependent variable (Revenue Collection Enhancement). The R Square value of .324 indicates that approximately 32.4% of the variance in revenue collection enhancement can be explained by the model. The Adjusted R Square value of .272 adjusts the R Square value for the number of predictors in the model and suggests that after adjustment, around 27.2% of the variance is accounted for, which is relatively significant, considering the complexity of factors affecting revenue collection.

Table 3: Model Summary and ANOVA (n=72)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.569[a]	.324	.272	.47104

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.009	5	1.402	6.318	.000[b]
	Residual	14.644	66	.222		
	Total	21.653	71			

a. Dependent Variable: Dependent- Revenue Collection Enhancement
b. Predictors: (Constant), Reduced Overdue payment, Improved Accountability and Transparency, Payment Compliance rate, Improved Accuracy and cost saving, Improved stakeholder trust

Regarding ANOVA, The Regression row indicates the between-groups (explained) variation. With a sum of squares at 7.009 and a mean square (which is the sum of squares divided by its degrees of freedom) of 1.402, combined with an F-value of 6.318, we can interpret that the model significantly predicts the dependent variable.

The F-value of 6.318 is a measure of how much the independent variables explain the variation in the dependent variable. The associated significance value is .000, which is less than .05, commonly accepted as the threshold for statistical significance. This means that there is a statistically significant relationship between the predictors and the revenue collection enhancement.

Table 4 presents the results of a regression analysis aimed at understanding the influence of digital financial strategies on the financial performance of higher education institutions. The coefficients provide valuable insights into the relationship between various factors and financial performance, as measured by the dependent variable.

Table 4: Regression analysis on the influence of digital financial strategies on financial performance (n=72)

Coefficients[a]					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.097	.271		4.048	.000
Improved stakeholder trust	.194	.066	.306	2.942	.004
Improved Accountability and Transparency	.102	.046	.231	2.229	.029
Payment Compliance rate	-.131	.054	-.250	-2.412	.019
Improved Accuracy and cost-saving	-.114	.049	-.240	-2.331	.023
Reduced Overdue payment	.213	.065	.333	3.258	.002

a. Dependent Variable: Dependent- Revenue Collection Enhancement

The Constant (intercept) has a value of 1.097 with a standard error of .271. The t-value of 4.048 and a significance level of .000 indicate that the intercept is statistically significant. This value represents the expected mean value of the dependent variable (Revenue Collection Enhancement) when all independent variables are at zero.

Regarding improved stakeholder trust findings show that an unstandardized coefficient B of .194, which means for each unit increase in stakeholder trust, the revenue collection enhancement is expected to increase by .194 units, holding all other variables constant. The standardized coefficient Beta of .306 shows the size of the effect in standard deviation units, which is relatively moderate. This is supported by a t-value of 2.942 and a significance level of .004, indicating that improved stakeholder trust is a statistically significant predictor. The findings are in line with qualitative data as one key informant from Arusha noted,

> *"The positive correlation between stakeholder trust and revenue collection is quite evident. For every step we take to build trust, we see corresponding improvements in our revenue metrics. This relationship, backed by significant statistical data, highlights trust as a crucial component of our financial strategy."* September 22, Arusha, 2023.

Improved Accountability and Transparency has a B of .102, and with its Beta value being .231, it also contributes positively and significantly to the model with a significance level of .029, suggesting it is a meaningful predictor of revenue collection enhancement.

The payment Compliance rate has a negative B coefficient of -.131, which implies that an increase in payment compliance rate is associated with a decrease in revenue collection enhancement by .131 units. This may seem counterintuitive but could indicate issues such as overemphasis on compliance affecting other areas of performance. This variable has a Beta of -.250 and is significant at the .019 level. The findings are in line with qualitative data as one key informant from Moshi explained,

> *"The negative coefficient between payment compliance and revenue enhancement initially seemed paradoxical. However, it could reflect a scenario where excessive focus on compliance might be inadvertently impacting other performance areas. It's a delicate balance that requires careful management."* September 26, Moshi, 2023.

Improved Accuracy and cost-saving" has a B of -.114. Similar to the compliance rate, an increase in accuracy and cost saving is associated with a decrease in revenue collection enhancement by .114 units, which is statistically significant with a p-value of .023.

Reduced overdue payment" has a positive B of .213, suggesting that a decrease in overdue payments (or an improvement in this area) is associated with an increase in revenue collection enhancement by .213 units. The Beta value of .333 indicates a relatively strong and positive effect, and the significance level of .002 suggests that this is a statistically significant predictor. The findings are in line with qualitative data as one key informant from Arusha said,

> *"The decrease in overdue payments strongly correlates with an uptick in our revenue enhancement. It's clear that improving in this area has a direct and significant positive impact on our revenue collection capabilities, which is also evident in the statistical significance of these findings."* September 24, Arusha, 2023.

Overall, this regression analysis reveals that each of the independent variables significantly influences financial performance in terms of revenue collection enhancement. Improved stakeholder trust and reduced overdue payments have the most substantial positive impact, while increased payment compliance rate and improved accuracy and cost savings surprisingly show a negative association. This could imply that while these strategies are overall beneficial, there may be trade-offs or negative aspects that need to be managed.

For example, focusing too much on compliance or efficiency might have unforeseen costs or may affect other aspects of revenue collection negatively.

Conclusions and Recommendations

Regarding the Influence of Digital Financial Strategies on Financial Performance, Digital methods, with GePG leading the way, have been very helpful in making the financial work of academic institutions better. These methods saved money, improved financial transparency, financial reporting, and analysis, and helped with planning and reporting. But again, how much they help can be different from one academic institution to another. It depends on how well each academic institution can use these digital methods in their work.

This study had some limitations that were mentioned. To begin with, the study's sample size was quite small, as it primarily focused on a few Higher Education institutions in Tanzania. This may have limited the applicability of the findings to other institutions or contexts. Another limitation was the potential for social desirability bias, which occurred when individuals provided answers that were more socially acceptable than accurate. Furthermore, using self-reported data could have resulted in errors due to recall bias or a refusal to share sensitive information. Several other constraints may have impacted the research methods of this study. One significant limitation was the potential for sample bias, which meant that the institutions selected may not have been representative of all Higher Education institutions in Tanzania.

To mitigate these limitations, the study employed a stratified sampling technique to ensure a more diverse representation of institutions within the country, enhancing the generalizability of the results. The study also used anonymous data collection methods or assured participants of confidentiality to encourage honest responses. Additionally, using triangulation methods such as interviews, focus groups, and secondary data sources helped validate the findings and minimized the effects of biases. This approach provided a more comprehensive understanding of the effectiveness of GePG across diverse institutions in Tanzania.

The Government should customize the system according to the industries sector, this will assist in meeting the demand of industries and also will lead to the improvement of financial stability and operation efficiency in the industries. The Government should develop the system with more features or functions in order to meet the needs of academic institutions for example to generate an account statement of each student which shows the transaction payment fee made and outstanding fee balance, and also to produce account recording rather than now playing two roles of billing and revenue collection. The institution should improve GePG infrastructure and support, to ensure that GePG platforms are accessible and reliable for all users within the institution, and also to provide technical support to faculty, staff, and students to help them troubleshoot issues and maximize their use of GePG. Then to standardizing Digital Financial Strategy Adoption, it create a digital strategy playbook that outlines step-by-step processes for adopting new financial technologies, tailored to various institutional contexts.

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