Malawi Journal of Social Science, 2025, 24 (1): 19 – 46

Unpacking the Determinants of IFMIS Technology Acceptance in Malawi's Public Service: A Technology Acceptance Model 2 Perspective

William Kasunga[1], Benson Munyenyembe[2*], and Happy Kayuni[3]
[1,3]University of Malawi
[2]Malawi School of Government
Corresponding Author: bmunyenyembe@msg.ac.mw

Abstract

Drawing on the Technology Acceptance Model 2 (TAM2 model), this study sought to explore the determinants of Integrated Financial Management Information System (IFMIS) technology adoption in Malawi's public service. Three factors, namely 1) performance expectancy, 2) effort expectancy, and 3) social influence, were explored to establish their impact on IFMIS technology acceptance. A cross-sectional survey design was adopted, and the quantitative research method was applied. The data used in the study was collected from 217 public service employees who use IFMIS to do their jobs in the district councils, ministerial headquarters, government departments, and government agencies (MDAs) across Malawi using a purposive sampling method. The collected data was analyzed with the aid of the Statistical Package for Social Sciences (SPSS) version 26 using regression. The study argues that TAM2 is partly applicable in the Malawian context when predicting IFMIS technology acceptance. Whereas Performance Expectancy (β=0.22;p value=0.006) and Effort Expectancy (β=0.516; p value=0.000) were found to have a significant positive effect on IFMIS technology acceptance, Social Influence was found to have an insignificant impact on IFMIS acceptance in the Malawi public service (β=-0.019 and p value=0.872). The study recommends that users of IFMIS technology in Malawi's public service receive clear orientation on how the system can improve institutional performance and efficiency. In addition, targeted and ongoing training should be provided to enhance user confidence and familiarity, thereby increasing ease of use and promoting long-term adoption.

Keywords: Malawi, Public service, IFMIS, Acceptance, Performance Expectancy, Effort Expectancy, Social Influence.

INTRODUCTION

The New Public Management era has been the basis for countries in Sub-Saharan Africa to undertake reforms in the institutional structuring, operating processes, and positioning of the public service (Chiweza, 2010; OECD, 2005a; Sikwese, 2013). Lawson (2012) posits that the main aim of public service reforms is to improve the way the public service responds to the citizens and also how it carries out its constitutional role of provision of public policy direction, as well as during the provision of public goods and services amidst the increased demand for public services by citizens against the dwindling financial resources availability. As such, countries in Sub-Saharan Africa have been undertaking several reforms in key areas of public service, intending to improve their relevance to their citizens. Some most notable public reforms in public service in Sub-Saharan Africa have been the adoption and investment in Information and Communication Technology (ICT) in governance and public service delivery through E-government platforms, coupled with reforms in the area of Public Finance Management (Hafkin, 2009; Omollo, 2018). Prakash & Cabezon (2008) observed that an effective public finance management system is very critical for implementing public service programs and projects since the public finance management system is essential for the sound allocation and use of public financial resources. This is why governments in Sub-Saharan Africa found it necessary to, among other areas, undertake reforms in Information Systems as well as in Public Finance Management.

The Government of Malawi (GoM), as one of the countries in Sub-Saharan Africa, has not been left behind on public service reforms. GoM has actively been adopting e-government reforms, which have led to, among other things, the procurement and implementation of the Integrated Financial Management Information System (IFMIS), firstly at the central government level and then gradually, at local government levels (World Bank, 2017a). Adoption and implementation of e-government in Malawi have been based on expectations that ICT in public service is associated with improved service delivery, such as reduction in operation cost, enhancement of accountability and transparency, and ease in task performance when ICT technologies are put to their proper use (Nkohkwo & Islam, 2013; World Bank, 2017).

E-government reforms in Malawi have led to the use of modern information and communication technology (ICT) based systems by the public service institutions in the provision of public services, intending to enhance the public service delivery capacity and also enhance the citizens' accessibility to the public services (GoM, 2018b). For example, the Government of Malawi procured and implemented the Integrated Financial Management Information

System (IFMIS) to enable integrated planning and budgeting for public services as a way of Public Finance Management Reforms. It has also eased the procedures and reduced the lead time during procurement processes, payments for goods and services, accounting and reporting the acquisition and utilization of public financial resources, and auditing of activities. Further, IFMIS implementation is a mechanism for improving performance efficiencies in addition to enhancing gains in transparency and accountability of public administrators and managers (World Bank, 2017). Adoption of IFMIS in GoM is based on high expectations of increased performance of the GoM Ministries, Departments, and Agencies (MDAs) and the associated ease of task performance that the technology is known to bring (Lawson, 2012; Nkohkwo & Islam, 2013). Furthermore, PFMRs leading to IFMIS were in response to increased, pervasive, and severity of cases of public financial resources mismanagement and corruption and lapses in public servants' issues to do with accountability and transparency (Mwafulirwa, 2019). The general benefits from investing in IFMIS technology in public service administration and public financial management include improved performance in budgetary planning, execution, reporting, and auditing; timely data and information for decision-making and control of government processes and government programs; increased accountability and transparency in public service administration and management as well as cost and task efforts reduction (Brown, 2008; GIZ PFEM, 2022; Morgner & Chene, 2014; Nkohkwo & Islam, 2013). Thus, if IFMIS is used to its full capacity, the public service stands to experience these benefits. However, the case is different in Malawi, as IFMIS acceptance has been slow, such that IFMIS is not used to its optimum performance capacity.

Several cases point to the slow acceptance of IFMIS use in Malawi. For instance, after IFMIS was comprehensively implemented, the Overseas Development Institute (ODI) assessment found that several features of IFMIS technology were not being used in MDAs (O'Neil et al., 2014). Further, USAID highlighted the fact that IFMIS was underutilized at both the central and local government levels, whereby, despite IFMIS having several modules, only the finance module was functional (USAID, 2017). Furthermore, the World Bank report showed that the interface between the central bank and IFMIS was not functional, nor was the interface between IFMIS and other government systems being fully utilized despite IFMIS having those facilities (World Bank, 2018). Similarly, Mwafulirwa reports that the main problem with IFMIS was that not all modules or packages of IFMIS were being used (Mwafulirwa, 2019). Beside, Machika, (2021) lamented the tendency of users of IFMIS to bypass the helpdesk facility that is embedded in the new IFMIS by opting to report problems they experience while using IFMIS over the

phone calls or physical personal contacts (Machika, 2021). Machika further reports that, as of 2021, only 10 out of the planned 80 votes were being supported by the modules in the new IFMIS.

Slow acceptance of IFMIS in Malawi has facilitated fraud and corruption in public service (Anders et al., 2020), where public resources meant for national development are stolen. Futher, slow acceptance of IFMIS has led to the non-use of necessary controls inherent in IFMIS that are key to ensuring fiscal discipline in the budgetary process in public service. This problem has contributed to cases of budgetary deficits created by over-expenditure in government Ministries, Departments, and Agencies (MDAs), and in turn, there have been reports of a substantial increase in domestic and external debts that are accumulated to facilitate government operations amidst budgetary deficits resulting from failure to link budgets to expenditures coupled with deficiencies in timely reporting of public activities (IMF, 2021). Thus, if IFMIS technology was accepted at a fast rate, these problems would have been non existent.

It is from this backdrop that this study assesses the determinants of IFMIS technology acceptance in the Malawi Public Service by looking at the impact of performance expectancy, effort expectancy, and social influence on technology acceptance based on the Technology Acceptance Model 2 (TAM2), the extended TAM theory. There is no study to the knowledge of the researchers that has examined the determinants of IFMIS technology acceptance in the Malawi Public Service based on TAM2. As such, this study seeks to contribute to bridging the information gap as regards IFMIS acceptance determinants guided by the following hypothesis:

H_1*: *Performance Expectancy has a positive impact on IFMIS technology acceptance in Malawi's Public Service

H_2*: *Effort expectancy has a positive impact on IFMIS technology acceptance in Malawi's Public Service.

H_3*: *Social Influence has a positive impact on IFMIS technology acceptance in Malawi's Public Service.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

The Malawian Public Service

Going by Stiglitz and Rosengard (2015: p815), the public service can be considered to be the sum of benefits and/or restrictions government establishments render to their citizens. However, Spicker (2009) opines that public service goes beyond the public goods, and services that are provided

and considers the public service to be a collection of government entities including a body of personnel of these entities that provide policy direction, public goods, and services to the citizens. The latter definition is the one that is used to imply public service in this study to signify the Malawi Public Service.

New Public Management (NPM): The Antecedent for Public Service Reforms

New Public Management (NPM) paradigm has influenced public sector reforms across the world and Malawi in particular (Chigudu, 2014). The reforms target improvements in government efficiency, transparency and accountability, a shift from old and tried ineffective approaches to public service administration and management based on Woodrow Wilson's political-administration dichotomy, Henery Fayol's and Fredrick W., Taylor's classic and scientific management, and Max Weber's bureaucratic approach (Frederickson et al., 2012; OECD, 2005; Oyedele, 2015; Palidano, 1999). Reforms in Malawi public service have included Structural Adjustment Packages (SAPs), Decentralization, and E-Government and ICT implementation which enables integration of public service processes and information sharing between local governments, central government and stakeholders (GIZ PFEM, 2022; GoM, 2018; Gruening, 2001; Kayuni, 2010; Sikwese, 2013; Tambulasi, 2010). Beyond this, reforms in Malawi targeted the Public Financial Management where focus was on enhancement and strengthening of the Public Financial Management Legal Framework and investment in the Integrated Financial Management Information system (IFMIS) (Brown, 2008; Folscher et al., 2012, 2012; GIZ PFEM, 2022; Public Finance Management Act, 2003; USAID, 2018).

IFMIS Acceptance in the Malawi Public Service

IFMIS is the computerized financial management package used to enhance the effectiveness and transparency of public resources management by computerizing the budget management and accounting system for a government (Chene 2009). With IFMIS, public financial management tasks such as budgeting, revenue collection, expenditure control, payroll, financial reporting, and audits in central and local government can be effectively and efficiently carried out (USAID, 2018). However, Thompson (2010) maintains that investment in technologies such as IFMIS alone means nothing unless there is wide acceptance and usage of the technology. Technology acceptance is the willingness of an individual or a group of people to utilize technology to perform tasks for which the technology was designed and implemented (Wahdain et al., 2014). Despite a comprehensive implementation of IFMIS in

Malawi reports highlight underutilization, signaling slow acceptance of the technology (Machika, 2021; Mwafulirwa, 2019).

TAM2: Determinants of Technology Acceptance

Davis (1989) proposed a technology acceptance theory (TAM) that suggests that for technology to be accepted in any organization or society it must be seen to improve the performance of people's tasks, a condition called "Perceived Usefulness". Further, the technology should be easy to use, a condition called "Perceived Ease of Use". In a quest to improve the TAM model, Venkatesh & Davis (2000) added "Social Influence" as a third condition determining technology acceptance. Social Influence is the degree of how important others believe that a person should accept and use technology (Venkatesh et al., 2003) and this takes different forms such as, the need for a person to conform to group pressure, emulating others who use the technology, and being commanded or persuaded directly by others to accept or use a technology. Hence, Perceived Usefulness (Performance Expectancy), Perceived Ease of Use (Effort Expectancy), and Social Influence are the TAM2 model technology acceptance predictor variables. TAM2 model has been validated and tested for its robustness in terms of its universal applicability (Al-Gahtani, 2010; Graf-Vlachy et al., 2018; Jared et al., 2017; McCoy et al., 2007; Napitupulu et al., 2017; Rondan-Cataluna et al., 2015; Sharifzadeh et al., 2017; Venkatesh & Davis, 2000; Venter et al., 2021; Wickramasinghe & Wickramasekara, 2022).

Empirical Studies on Technology Acceptance

Empirical studies on TAM model have revealed conflicting results regarding Performance Expectancy (Perceived Usefulness-PU) and Effort Expectancy (Perceived Ease of Use-PEOU), and Social Influence. The contradiction is because some studies have dismissed the significance of the variables altogether, while others have confirmed their significance. For instance, Harryanto et al. (2018); Mailizar et al. (2021); Mendez-Rivera et al. (2023); and Sibande (2021) rejected the significance of TAM2 variables in predicting technology acceptance. To the contrary, Billanes & Enevoldsen (2021); Feng et al. (2021); Mokmin & Neoh (2023); Pontoh (2017); Tubaishat (2018) and Ziba & Kang (2020) confirmed their significance in predicting technology acceptance. Furthermore, some studies have found performance expectancy to be the only significant variable (Ejdys & Gulc, 2022; Munabi et al., 2020) and not the other variables while other researchers found only effort expectancy to be significant (Hanadi et al., 2012). Furthermore, some researchers found performance expectancy to be the most critical variable in predicting technology acceptance (Davis, 1989; Feng et al., 2021; Tubaishat, 2018;

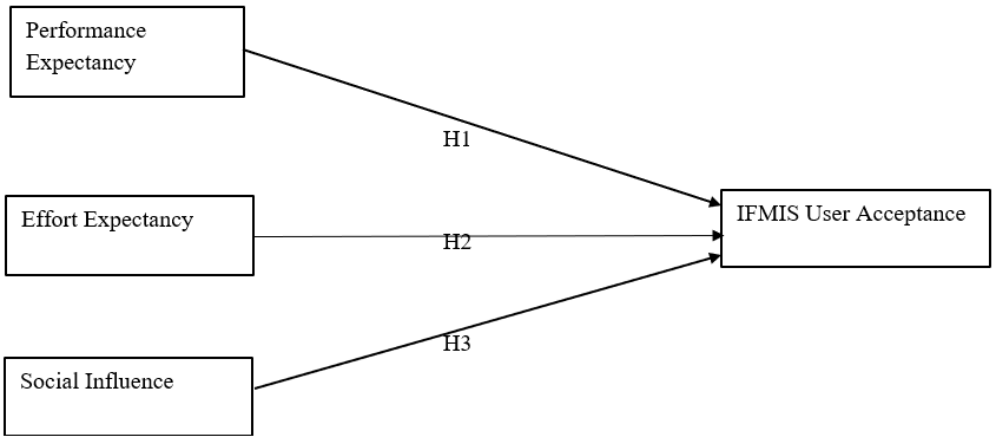
Venkatesh & Davis, 2000). To the contrary, Mokmin & Neoh (2023) and Wicaksono & Maharani (2020) found effort expectancy to be the most significant predictor of technology acceptance. Lastly, the place of social influence in TAM2 model has also been contentious. Whereas some researchers have confirmed its significance (Malhotra & Galleta, 1999; Venkatesh & Davis, 2000) others have reject its significance in predicting technology acceptance (Sibande, 2021).

Such contradictions in empirical literature highlight the need for further research as regards TAM2 model to examine these variables in other contexts such as the Malawi Public Service. This study is meant to fill this gap by assessing determinants of IFMIS technology acceptance in the Malawi Public Service as a way of contributing to the discourse regarding technological reforms in the public services.

Study Conceptual Framework

Figure 1 below shows the proposed conceptual framework guiding the assessment of the relationship between the independent variables (i.e. performance expectancy, effort expectancy, and social influence) and the dependent variable (IFMIS technology acceptance) in Malawi's public service.

Figure 1: Conceptual Framework of the Study



Note: The proposed study conceptual framework indicates that Performance Expectancy, Effort Expectancy, and Social Influence are theorized to be variables that are used to predict technology acceptance in the Malawi Public Service.

Performance Expectancy and IFMIS Technology Acceptance in Malawi's Public Service

In this study, performance expectancy is considered to be the degree to which an individual (s) believe that a given technology would enhance their work performance when they put it to use (Davis, 1989b; Venkatesh et al., 2003). Earlier studies claim that for users to adopt a particular technology they should believe that such technology will aid in improving their performance (Davis, 1989a; Venter et al., 2021; Wahdain et al., 2014; Yoon, 2016; Zhai & Shi, 2020). Such studies have established a positive relationship between performance expectancy and technology acceptance. The narrative is, that the more useful a technology appears to be, the more likely that it will be put to use by users or prospective users. Based on this, the current study hypothesized that;

H_1*: *Performance Expectancy has a positive impact on IFMIS technology acceptance in Malawi's Public service

Effort Expectancy and IFMIS Technology Acceptance in Malawi's Public Service

In the present study, effort expectancy is the degree of effortlessness associated with navigating and using a given technology (Sharifzadeh et al., 2017). Impliedly, technology is easy to use if it does not involve too many procedures to carry out work with it, it is not hard to learn how to work with, and it is very interactive and user-friendly when navigating through it. According to previous studies, it is this envisioned or perceived level of inherent complexity associated with the use of the technology that determines the acceptance of the technology (Ly, 2019; Mokmin & Neoh, 2023; Wicaksono & Maharani, 2020). These and many other studies have shown that there is a positive relationship between effort expectancy and technology acceptance (Feng et al., 2021; Tubaishat, 2018; Venkatesh & Davis, 2000c). The positive relationship between Effort Expectancy and Technology Acceptance implies that the more users believe technology is less demanding effort-wise, the more the technology will be adopted. Therefore, in this study, it was hypothesized that;

***H_2:** Effort expectancy has a positive impact on IFMIS technology acceptance in Malawi's Public Service.*

Social Influence and IFMIS Technology Acceptance in Malawi's Public Service

In this study, social influence is defined as the degree of responsiveness of an individual to how other people within a particular technology setting believe the individual in question should accept and use the technology (Graf-Vlachy et al., 2018). Based on this conceptualization, Social Influence entails an individual's compliance with the expectation of another person or group of people to secure validation of some form from the latter (Beldad & Hegner, 2018). In this case, Social Influence could manifest in the form of a given person's obligation to conform to group pressure to use the technology, emulating others who are using the technology, or being commanded or persuaded directly by others including peers and supervisors to accept or use a technology.

Venkatesh & Davis (2000) validated Social Influence in relation to technology acceptance where they, just like other earlier researchers, found Social Influence to be a positive factor for technology acceptance (Alraja, 2016; Billanes & Enevoldsen, 2021; Pontoh, 2017). This implies that the more an individual is exposed to Social Influence in relation to a given technology usage, the more likely will the individual use the technology. Hence in this study, it was hypothesized that;

***H_3**: Social Influence has a positive impact on IFMIS technology acceptance in Malawi's Public Service.*

METHODOLOGY

Research Design and Approach

In this study, a cross-sectional survey research design was adopted and the quantitative research method was followed. The quantitative research method uses numerically rated items to measure the variables of interest to the research problem (Ponto, 2015; Queiros et al., 2017). The quantitative research method was used in this research study because of its several advantages including enabling the description and prediction of variables' behavior numerically where investigation of the nature and magnitude of the relationship between/among variables can be made, allowing for generalizability of the research findings from a sample to a wider scope of the population, and enhanced objectivity and replication of the study by way of it being scientific (De Franco et al., 2017; Johnson & Onweugbuzie, 2004; Mohajan, 2020).

Participants and Study Locations

After ethical approval was granted by the University of Malawi on 13th July 2023 to conduct this study the researchers carried out the survey targeting civil servants who use IFMIS in carrying out their job requirements as accounts and finance personnel, internal and external audit & assurance personnel, administrative personnel, and public procurement personnel in MDAs. The study was conducted in Lilongwe specifically, at the Ministry of Justice, Ministry of Health, Ministry of Agriculture, Ministry of Education, the Accountant General, the Treasury General, the Department of Human Resource Management and Development, Ministry of Trade and Industries, the Office of President and Cabinet, Ministry of Defense, the Department of Parks and Wildlife, the National Assembly (Parliament), Lilongwe City Council and Lilongwe District Council. Additionally, the study was also conducted at the following nine district councils: Neno, Mangochi, Mchinji, Dowa, Nkhotakota, Nkhata-Bay, Mzimba South, Karonga, and Chitipa. All these are Malawi Government Ministries, Departments, and Agencies that use IFMIS (the technology under assessment). Approval to collect data was granted from all these entities and 238 respondents were recruited through a non-probability sampling method, specifically, purposive sampling. Purposive sampling involves the identification and selection of individuals or groups of individuals that meet given criteria under interest such as knowledge and experience of the respondents about the research phenomenon (Etikan et al., 2016). Data cleaning revealed that 21 responses were incomplete and these were dropped leaving 217 responses which were analysed using Statistical Package for Social Science version 26.

Data Collection Procedure

The primary quantitative data were collected using a structured questionnaire. A structured questionnaire is a document with a collection of standardized questions with a predetermined answer scheme for respondents to choose from, making it easy for researchers to collect necessary data (Cheung, 2021). The questionnaire was administered to respondents in two formats: a printed hard copy for those who preferred this method, and an online version via Google Forms. The online form was accessible through a shared link, provided after respondents had given their consent to participate in the study.

Data Collection Instruments

The measures utilized in this study were all drawn from previous research. *Performance expectancy* was measured on a 7-point Likert-type scale between an interval of 1 to 7 where 1 stood for strongly disagree and 7 for strongly agree. The five items that were used to measure this variable were adopted

from Venkatesh & Davis, (2000). In principle, when a respondent selected 1 against a questionnaire item they meant they strongly-disagreed, 2 moderately disagreed, 3 somewhat disagreed, 4 were neutral (neither disagree nor agree), 5 somewhat agreed, 6 moderately agree, and if a respondent indicated 7 against a questionnaire item they meant they strongly agreed. *Effort expectancy* was also measured using five questionnaire items anchored on a seven-point Likert type scale ranging from strongly disagree to strongly agree. The five items used to measure effort expectancy were adopted from studies by Thompson (2010) and Venkatesh and Davis (2000) who also validated the instruments. *The Social Influence was* also measured on seven-point Likert-type scale on 1 to 7 intervals with 1 implying strongly disagree and 7 indicating strongly agree where the four questionnaire items that were used for this variable were adopted from Vannoy & Palvia, (2010). Lastly, the dependent variable *Technology Acceptance* was measured using five questionnaire items on a seven-point Likert scale, as was the case with the independent variables, and the questionnaire items were adapted from Davis's (1989).

Data Analysis

The data drawn from the questionnaire were used to generate the latent variables for both independent and dependent variables which were later analyzed with the aid of the IBM Statistical Package for Social Sciences software (SPSS) version 26. Multiple linear regression was carried out in SPSS to assess the direction and strength of the relationship between dependent and independent variables.

RESULTS

The results of this study are presented in two parts. The first part consists of the preliminary tests that were conducted to ascertain that the collected data was of robust quality. The second part consists of the linear regression analysis output that tested the study's three main hypotheses. The results are all based on tests that utilized a data set consisting of 217 respondents as summarized in Table 1.

Table 1: Demographic Characteristics of the Participants

	Variables	**Frequency**	**Percentage**
Gender	Male	140	65%
	Female	77	35%
Age	18 to 25 years	18	8%
	26 to 33 years	53	24%
	34 to 41 years	59	27%
	42 to 50 years	47	22%
	Above 50 years	40	18%
Tenure	0 to 4 years	72	33%
	5 to 9 years	25	12%
	10 to 14 years	33	15%
	15 to 19 years	23	11%
	20 to 24 years	22	10%
	25 or more years	42	19%
Task Nature	Routine	186	86%
	Non-routine	31	14%
Voluntariness	Mandatory	149	69%
	Partly Mandatory	55	25%
	Completely Optional	13	6%
Total		217	100%

The Demographic data in Table 1 shows that the majority of the participants were male (65%, n=140) against the female statistics at 35%. The respondents were distributed in five age brackets with the 34-41 bracket having the most respondents (275, n=59), the least being the 18-25 bracket (8%, n=18). On the same note, the data indicates that the majority of the public servants is within 34-50 age group (27%+22%, n=59+47=106). In terms of tenure, most of the respondents have been in the public service for at most 4 years (33%, n=72),

suggesting that the majority are fairly new to the public service. Further, the data shows that most of the tasks performed using IFMIS are routine (86%, n=186). Lastly, 69% (n=149) of the respondents indicated that usage of IFMIS is mandatory with 25% (n=55) indicating that usage of IFMIS is partly mandatory, suggesting some degree of freedom of choice to use the technology or not.

Preliminary data analysis

In this chapter, the findings of the study are presented and discussed. Several statistical tests were conducted as follows. Firstly, the preliminary statistical tests that included, Kaiser Meyer Olkin (KMO) and Bartlett's test to confirm sampling adequacy, Cronbach alpha test to establish internal consistency in the measurement instruments, Harman's Single Factor test to diagnose common methods variance, Factor Loadings to measure validity, and Variance Inflation Factor and Correlation Matrix test were carried out to diagnose multi-collinearity.

KMO and Bartlett's Test

KMO and Bartlett's tests were carried out and used to provide statistical evidence regarding the suitability of the data before further analyses could be conducted (Napitupulu et al., 2017). KMO takes values that range from 0 to 1, and values above 0.5 show the suitability of the data for further analyses in cases where the sample size is at least 100 (Shrestha, 2021). While Bartlett's test result needs to be significant at any *p-value* less than 0.05 for the data to be considered to be feasible for further analysis. The KMO and Bartlett's tests were carried out on SPSS for all the variables and the results are shown in Table 3 below.

Table 2: KMO and Bartlett's Test

Variable	KMO Value	Bartlett's Measure of Sphericity	Significance Level
Performance Expectancy	0.826	546.462	0.000
Effort Expectancy	0.852	437.214	0.000
Social Influence	0.786	294.94	0.000
IFMIS Technology User Acceptancy	0.633	109.11	0.000

As can be seen from Table 3 above, the KMO results for each and every variable is acceptable considering that the sample size is at least 200 (Shrestha, 2021). Bartlett's tests of sphericity results for all the variables are equally significant at p-values of below 0.05. This being the case, the data was suitable and justified to be used in factor analyses since the data met the adequacy and significance conditions to allow it to be used for further analysis.

Reliability Analysis

Cronbach's Alpha test is used to ascertain the reliability or internal consistency of the questionnaire items. Assessment of the questionnaire items which make up individual constructs is done on a scale of 0 to 1 and only Cronbach's alpha results which are at least 0.7 are considered to be indicative of internal consistency between the questionnaire items that are making up a scale for an individual construct (Taber, 2018). However, Ursachi et al. (2015) suggested that the generally accepted rule is Cronbach's alpha from at least 0.6 and that Cronbach's alpha greater than 0.95 could indicate redundancy in the items. As reported in Table 3, this study Cronbach's alpha ranged from 0.617 to 0.869 and this is a satisfactory measure of reliability Acceptance) were satisfactory indicators of internal consistence (Bland & Altman, 1997; Robertson & Evans, 2020; Ursachi et al., 2015).

Table 3: Reliability Statistics

Variable	Cronbach Alpha	Number of items
Performance Expectancy	0.869	4
Effort Expectancy	0.854	5
Social Influence	0.817	4
Technology Acceptancy	0.617	4

Common Method Bias

This study adopted the cross-sectional research design and cross-sectional studies are known to commonly be subjected to Common Method Variance (CMV) also called Common Method Bias (CMB) (Podsakoff et al., 2012). Richardson et al. (2009) and Tehseen et al. (2017) observed that CMV has a detrimental impact on the correctness of the conclusions made from the research findings in situations where CMV is feared to be present. Harman's Single-Factor analysis value of at least 50% signifies presence of CMV

(Eichhom, 2014; Tehseen et al., 2017). In this study, Harman's single factor test showed that no single factor was attributed to more than 50% of the variance, hence it was concluded that CMV was not present in the data set.

Factor Loadings

Factor loadings analysis is used to explain the extent to which the measurement instrument items correlate with the latent variables they are designed to measure through the extraction of component(s) or factor(s) that are meaningfully associated with the variance in the latent variables (Field, 2018). According to Peterson (2000), the acceptance threshold for factor loadings in empirical studies is the absolute value of 0.32. In this study, the 'within-construct factor analysis' method was adopted whereby factor analyses were conducted for each latent variable independently (Guérin et al., 2003; Segars & Grover, 1993).

Table 4: Factor Loadings

Variable	**Items**	**Factor Loadings**
Performance Expectancy	PE2	0.898
	PE5	0.881
	PE3	0.841
	PE1	0.778
Effort Expectancy	EE3	0.827
	EE5	0.815
	EE2	0.798
	EE4	0.786
	EE1	0.755
Social Influence	SI3	0.847
	SI1	0.812
	SI4	0.788
	SI2	0.773
Technology Acceptance	TA2	0.78
	TA1	0.753
	TA3	0.731

Note: The correlations generated from factor loadings analysis are all satisfactory indicators of the items contributing to the total explained variances in the corresponding latent variables (Peterson, 2000).

Multi-collinearity Assessment

Multi-collinearity assessment was conducted in SPSS focusing on correlation coefficients among the three main independent variables (Performance Expectancy, Effort Expectancy, and Social Influence). Multi-collinearity signifies the existence of perfect correlation (±1) between independent variables a thing that casts doubt on the reliability or generalizability of the research findings (Shrestha, 2020). The two aspects of multi-collinearity assessment under consideration in this study were the Tolerance and the Variable Inflation Factors (VIF). Menard (2002) argued that tolerance of less than 0.2 in multi-collinearity assessment is a cause for concern as it is evidence enough to highlight that the independent variables are reporting the same level of variance as the dependent variable. In the case of VIF, measures ≥ 10 signal high multi-collinearity and that the most safe zone is within VIF values below 5 (Srivastava et al., 2010). For this study, the results of multi-collinearity assessment showed that there was no tolerance measure which was below 0.2 where the minimum tolerance was 0.375 and the maximum tolerance was 0.538. Regarding VIF, all values were within the recommended threshold with minimum VIF being 1.858 while the maximum being 2.663. These results showed that there was no undue multi-collinearity among the independent variables.

Correlation Matrix

Correlation Matrix displays the correlations between one or more variables (Friendly, 2002). It mainly shows the strength and direction of the relationship between independent variables as well as the relationship the dependent variable has with each independent variable as it responds to the variation in the independent variable(s). The correlation matrix also helps in laying bare issues regarding independent variables reporting the same magnitude of variability in the dependent variable (Warner, 2013). Correlations between the main independent variables and the dependent variable are within range with none being above 0.8 to fear the presence of multi-collinearity and inconsistencies in the (Menard, 2002; Srivastava et al., 2010).

Table 6: Correlation Matrix

Variables	Tenure	Voluntary	Task Nature	Performance Expectance	Effort Expectancy	Social Influence	Technology Acceptancy
4. Tenure	1						
6. Voluntariness	.158*	1					
7. Task nature	0.05	.209**	1				
8. Performance Expectancy	0.05	-0.12	0.01	1			
9. Effort Expectancy	0.01	-0.06	0.05	.729**	1		
10. Social Influence	0.02	-.143*	0.1	.668**	.572**	1	
11. IFMIS Technology Acceptance	0.05	-.178**	0.01	.605**	.677**	.447**	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Findings and Discussion

Investment in technologies in the public service has been widely recommended because of numerous benefits associated with it, as argued in earlier sections (Nkohkwo & Islam, 2013b; World Bank, 2017b). In Malawi, public service has failed to fully leverage investment in IFMIS technology due to slow adoption of the technology (IMF, 2021; Machika, 2021; Mwafulirwa, 2019b; O'Neil et al., 2014b). Hence, this study examined the determinants of IFMIS technology acceptance in the Malawi public service based on TAM Technology acceptance model 2 (TAM2) variables, performance expectancy, efforts expectancy, and social influence, significantly impact technology adoption (Jared et al., 2017; Venkatesh & Davis, 2000a). Multiple linear regression analysis was carried out to examine determinants of IFMIS technology acceptance in the Malawian context based on TAM2. Findings reveal that Performance Expectancy (PE) and Effort Expectancy (EE) have a significant positive impact on technology acceptance in the Malawi public service. However, Social Influence (SI) emerged as a non-significant predictor of technology adoption and this is contrary to TAM2-based empirical studies in which SI proved to be a significant determinant of technology acceptance. Further analysis reveals that voluntariness significantly influence IFMIS acceptance in a negative manner.

Hypothesis 1 predicted that performance expectancy has a positive significant impact on IFMIS technology acceptance. The study confirms this with regression coefficients ($\beta = 0.222;\ \text{p value} = 0.006$) on IFMIS technology acceptance, and this aligns with TAM2 theoretical framework (Al-Gahtani, 2010; McCoy et al., 2007; Venkatesh et al., 2003) to explain technology acceptance in the Malawi public service context. The positive β score at 0.222 entails that a unit increase in public servants' perception of IFMIS technology performance instrumentality results to a corresponding 0.22 units in increase in IFMIS technology acceptance. This suggests that the more users of IFMIS perceived it to enhance their productivity and effectiveness at work, the more they will adopt its usage. This underscores the importance of the increased performance expectancy among public servants in Malawi in relation to IFMIS technology acceptance.

Hypothesis 2 predicted that effort expectancy has a positive significant impact on IFMIS technology acceptance. This was supported by the results ($\beta = .516;\ \text{p value} = .000$). This suggests that a unit increase in users' perception of the level of effort expectancy of IFMIS technology leads to a 0.516 corresponding increase in IFMIS technology acceptance. This implies that the more users of IFMIS see it to be easy to use the more they will accept to use it. This again, reinforces the TAM2 theory as regards the explanation of technology acceptance (Mokmin & Neoh, 2023; Pontoh, 2017; Venkatesh & Davis, 2000a).

Comparatively, this study finds effort expectancy to be the most critical predictor of IFMIS technology acceptance if compared with performance expectancy. This is

consistent with previous TAM model based studies that reported effort expectancy to be the most significant determinant of technology (Mokmin & Neoh, 2023; Wicaksono & Maharani, 2020).

Hypothesis 3 predicted that social influence has a positive impact on IFMIS technology acceptance. The results from this study did not support the hypothesis with a negative non-significant standard beta ($\beta = -.019;\ p - value = 0.782$). This challenges the theoretical framework and literature at large (Venkatesh & Davis, 2000a; Ziba & Kang, 2020b) that empirically claimed that social influence positively and significantly explains technology acceptance. The findings reinforce Yang & Choi (2001) claim that social influence impact on technology acceptance is dependent on whether the technology in question is social or not in nature. By design, IFMIS is a non-social-based technology (Graf-Vlachy et al., 2018), such that its usage does not involve social interface and interaction among users, consequently affecting social influence impact on IFMIS technology acceptance.

Further analysis involved examination of control variables (Tenure, Voluntariness, and Task Nature) on IFMIS acceptance. Only voluntariness out of the three control variables was significant in predicting IFMIS technology acceptance in the Malawian context ($(= -0.135 \text{ and } p - value = 0.009)$. The implication of the negative beta value is that there is a negative relationship between voluntariness and IFMIS technology acceptance. Thus, as usage of IFMIS technology becomes voluntary, acceptance of the technology declines. This, therefore, suggests that IFMIS usage in the Malawi public service has to be mandatory and enforced to enhance its acceptance. By this, this study extends the TAM2 model to suggest the usefulness of voluntariness in determining technology acceptance in public services.

This study has contextualized TAM2 in the public sector with IFMIS under consideration where it has reinforced the robustness of effort expectancy and performance expectancy in predicting technology acceptance. It has, however, challenged the assumption that social influence is always a significant determinant of technology acceptance but that relevance of social influence is subject to the nature of the technology in use (social vs non-social technologies). Finally, the study has revealed the negative significant interaction between voluntariness and IFMIS technology acceptance in the public service. Findings of the study have reinforced TAM2 validity.

CONCLUSION AND RECOMMENDATIONS

Usage of technology in public service in key areas such as public finance management is associated with several benefits to the public service that come in form of reduction in public service delivery costs, enhancement in transparency and accountability, and speed and ease in task performance (Nkohkwo & Islam, 2013; World Bank, 2017). Malawi Public Service procured and implemented IFMIS to enhance efficiencies in the public finance management system from around the year 2005, but acceptance of

the technology has been slow. To that effect, this study assessed the determinants of technology acceptance in the Malawi Public Service by applying TAM2 model on IFMIS acceptance to generate information about issues surrounding technology acceptance in the Malawi Public Service.

The findings from this study reinforce the validity of TAM2 model in the Malawian context, where it has shown that effort expectancy and performance expectancy significantly predict IFMIS technology acceptance in the Malawi public service. However, the findings challenge the position of social influence in TAM2 as applied to IFMIS technology based on the study findings, which have shown that social influence is an insignificant predictor of IFMIS technology acceptance. Finally, the study extends TAM2 model by showing the efficacy voluntariness as another variable that demonstrates influence in IFMIS technology acceptancy in the Malawi public service.

Recommendations

Firstly, the study has shown that effort expectancy has the strongest impact on IFMI's technology acceptance in the Malawi public service. Managers in the Malawi public service can promote technology acceptance by ensuring that technologies are easy to use. They can achieve this by focusing on training users or would be users of technologies. Secondly, the study has shown that performance expectancy impacts on IFMIS technology in the Malawi public service. Consequently, managers in Malawi public service may benefit from promoting perception of instrumentality of IFMIS technology among users. Finally, with significancy of voluntariness as shown in the study, management in Malawi public service should work on strategies to enforce mandatory usage of IFMIS technology to enhance its acceptance and usage among public servants.

REFERENCES

Adamolekun, Kulemeka, N., & Laleye, M. (1997). Political Transition, Economization and Civil Service Reforms in Malawi. *Public Administration and Development The International Journal of Management Research and Practice*, *17*(2), 209–222.

Al-Gahtani, S. (2010). Testing for the Applicability of the TAM Model in the Arabic Context: Exploring an Extended TAM with Three Moderating Factors. In *Global, Social, and Organisational Implications of Emerging Information Resources Management: Concepts and Applications* (pp. 177–201). IGI Global.

Alraja, M. N. (2016). The Effect of Social Influence and Facilitating Conditions on E-governement Acceptance From the Individual Employees' Perspective. *Polish Journal of Management Studies*, *14*(2), 18–27.

Ambler, K., Godlonton, S., & Recalde, M. (2021). "Follow the Leader? A Field Experiment on Social Influence. *Journal of Economic Behavior, 188*, 1280–1297.

Anders, G., Kanyongolo, F. E., & Seim, B. (2020). Corruption and the Impact of Law Enforcement: Insights from a Mixed-Method Study in Malawi. *Journal of Modern Afrrican Studies*, *58*(3), 315–336.

Banik, D., & Chasukwa, M. (2016). The Impact of Emerging Donors on Development and Poverty Reduction. In *Political Transition and Inclusive Development in Malawi* (pp. 147–168). Routledge.

Basu, P., & Milner, C. (1997). Structural Adjustment and Fiscal Reforms in Malawi: An Assessment. In *Fiscal Reforms in Least Developed Countries* (pp. 78–107). Edward Elgar.

Beldad, A. D., & Hegner, S. M. (2018). Expanding the Technology Acceptance Model with the Inclusion of Trust, Social Influence, and Health Valuation to Determine the Predictors of German Users' Willingness to Continue Using a Fitness App: A Structural Equation Modeling Approach. *International Journal of Human-Computer Interation*, *34*(9), 882–893.

Billanes, J., & Enevoldsen, P. (2021). *A Critical Analysis of Ten Influential Factors of Energy Technology Acceptance and Adoption* (No. 7; pp. 6899–6907).

Biru, A., Gilbert, D., & Arenious, P. (2020). Unhelpful Help: The State of Support Programmes and the Dynamics of Entrepreneurship Ecosystems in Ethiopia. *Entrepreneurship & Regional Development*, 130–152.

Bland, M. J., & Altman, D. G. (1997). Statistics notes: Cronbach's Alpha. *BMJ*, *314*.

Brown, E. R. (2008). *Integrated Financial Management Systems: A Practical Guide*. USAID.

Cheung, A. K. (2021). Structured Questionnaires. In *Encyclopedia of Quality of Life and Well-being Research* (pp. 1–3). Springer International Publishing.

Chiweza, A. L. (2010). Public-Sector Reforms and Decentralization of Services: Lessons From Malawi (1994-2006). In *Reforming The Malawi Public Sector: Retrospective And Prospective* (pp. 29–55). Council The Development of Social Research In Africa.

Davis, F. D. (1989a). Perceived usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, *13*(3), 319–340.

Davis, F. D. (1989b). Perceived usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, *13*(3), Article 3.

De Franco, A., Bruni, R., & Delli, P. (2017). Why Quantitative Research? An Essential Guide for Understanding Quantitative Research in Management. *European Journal of Business and Management*, *9*(4), 1–9.

Dzimbiri, L. B. (2016). Politics and the Public Service. In *Political Transition and Inclusive Development in Malawi* (pp. 75–94). Routledge.

Eichhom, B. R. (2014). Common Method Variance Techniques. *Cleveland State University, Department of Operations & Supply Chain Management*, *1*(11), Article 11.

Etikan, I., Musa, A. S., & Alkanssim, R. S. (2016). Comparison of Convenience Sampling and Purposive Sampling. *American Journal of Theoretical and Applied Statistics*, *5*(1), Article 1.

Faust, J. (2008). Are More Democratic Donor Countries More Development Oriented? Domestic Institutions and External Development Promotion in OECD Countries. *World Development*, *36*(3), 383–398.

Feng, G. C., Su, X., Lin, Z., Luo, N., & Zhang, Y. (2021). Determinants of Technology Acceptance: Two Model Based Meta-Analytic Reviews. *Journalism & Mass Communication Quarterly*, *98*(1), 83–104.

Field, A. (2018). *Discovering Statistics Using IBM SPSS Statistics* (5th ed.). Sage edge.

Friendly, M. (2002). Exploratory Display for Correlation Matrices. *The American Statistician*, *56*(4), 316–324.

GIZ PFEM. (2022, May). *Malawi: Strengthening Public Finance and Economic Management: Supporting Development financing by improving budget excution, contract management and tax administration*. Deutsche Gesellschaft fur.

GoM. (2018a). Malawi Public Service Management Policy 2018 to 2022. *Government of Malawi*.

GoM. (2018b). *The Malawi National Public Sector Reforms Policy: Making Malawi Work (period: 2018-2022)*. Government of Malawi.

Graf-Vlachy, L., Buhtz, K., & Konig, A. (2018). Social Influence in Technology Adoption: Taking Stock and Moving Forward. *Management Review Quarterly*, *68*, 37–76.

Hafkin, N. J. (2009). *E-government in Africa: An Overview of Progress Made and Challenges Ahead*. Building Capacity in Knowledge Management through Partnership.

Hangala, S. (2023). International Donors, Domestic Politics, and the Expansion of Social Cash Transfers in Malawi. *Development Policy Review*, *1*, 12660.

IMF. (2021). *2021 Article IV Consultation-Press Release;Staff Report; And Statement of the Executive Director for Malawi* (IMF Country Report No. 21/269). International Monetary Fund.

IMF. (2022). *Request for Disbursement Undert the Rapid Credit Facility and Request for a Staff Monitored Program with Executive Board Involvement-Press Release; Staff Report; and Statement by the Executive Director for Malawi* (IFM Country Report No. 22/352; pp. 1–72).

Implementation Completion and Results Report (TF Number: TF-13825) (No. ICR00004541; pp. 1–62). (2018). World Bank.

Jared, O. O., Migiro, S., & Mutambara, E. (2017). Integrated Financial Mangement Information System: A Conceptual Frameworkd for Migori County, Kenya. *Public and Municipal Finance*, *6*(1), 37–45.

Johnson, R. B., & Onweugbuzie, A. J. (2004). Mixed Methods Research: A Research Paradigm Whose Time Has Come. *Educational Researcher*, *33*(7), 14–26.

Kayuni, H., & Chasukwa, M. (2020). Examining Transformation of the Public Machinery in the Context of Public Ethical Values in Malawi Reforms or Deforms? In *Transformation of Public Administration in Africa* (pp. 54–71). African Association for Public Administration and Management.

Lawson, A. (2012). *Evaluation of PUblic Financial Management Reform: Burkina Faso, Ghana and Malawi 2001-2010. Final Synthesis Report* (No. 7; pp. 1–126). SIDA, DANIDA and AfDB.

Lee, B. C., Cho, J., & Hwang, D. (2013). An Integration of Social Captial and Tourism Technology Adoption-A Case of Convention and Visitors Bureaus. *Tourism and Hospitality Research*, *13*(3), 149–165.

Ly, K. T. (2019). *Unified Theory of Accetptance and Use of Technology to Inform Health Technology Assessment*. Alberta.

Machika, P. (2021, May 13). *2021 IFMIS Capacity Building Program: Malawi Integrated Financial Management Information System*. 2021 IFMIS Capacity Building Program on IFMIS Trends and Brain Experience.

Mailizar, M., Almanthari, A., & Mauina, S. (2021). Examining Teachers'Behavioural Intention to use E-Learninng in Teaching Mathematics: An extended TAM Model. *Contemporary Education Technology*, *13*(2), ep289.

Mangani, R. (2021). On Fiscal Dominance in Malawi. *Review of Economics and Finance*, *13*(1), 29–53.

McCoy, S., Galletta, D. F., & King, W. R. (2007). Applying TAM Accross Cultures: The Need for Caution. *European Journal of Information Systems*, *16*(1), 81–90.

Menard, S. (2002). *Applied Logistic Regression Analysis* (2nd ed.). Sage Publications.

Mendez-Rivera, C. A., Patino-Toro, O. N., Valencia-Arias, A., & Arango-Botero, D. M. (2023). Factors Influencing the Adoption of E-Government Services: A study Among University Students. *Economies*, *11*(9), 225.

Mohajan, H. K. (2020). Quantitative Research: A Successful Investigation in Natrual and Social Sciences. *Journal of Economic Development, Environment and People*, *9*(4).

Mokmin, N. A. M., & Neoh, Y. T. (2023). A Study of Perceived Ease of Use, Perceived Usefulness and Self-Efficacy Among Mature-Aged Workers'

Behavioural Intention on Using the Online Training Portal in Manufacturing Industry. *Research Square*.

Morgner, M., & Chene, M. (2014). *Public Financial Management Topic Guide*. Transparency International, The global Coalition Against Corruption.

Mwafulirwa, W. C. K. (2019a). *Computerised and (not) Corrupt Government? Assessing the Effectiveness of E-Governance as An Antidote to Corruption in Public Service* [Master]. International Anti-Corruption Academy.

Mwafulirwa, W. C. K. (2019b). *Computerised and (not) Corrupt Government? Assessing the Effectiveness of E-Governance as An Antidote to Corruption in Public Service* [Master]. International Anti-Corruption Academy.

Napitupulu, D., Abdel Kadar, J., & Kartika Jati, R. (2017). Validity Testing of Technology Acceptance Model Based on Factor Analysis Approach. *Indonesian Journal of Electrical Engineering and Computer Science*, *5*(3), 697. https://doi.org/10.11591/ijeecs.v5.i3.pp697-704

National Planning Commission. (2020). *Malawi's Vision 2063: An Inclusively Wealthy and Self-Reliant Nation*. NPC.

National Statistical Office. (2022). *The Second Malawi Multidimensional Poverty Index* (No. 2). National Statistical Office.

Nkohkwo, Q. N., & Islam, M. S. (2013a). Challenges to the Succesful Implementation of E-Government Initiatives in Sub-Saharan Africa: Literature Review. *Electronic Journal of E-Government*, *11*(1), 252–266.

Nkohkwo, Q. N., & Islam, M. S. (2013b). Challenges to the Successful Implementation of E-Government Initiatives in Sub-Saharan Africa: Literature Review. *Electronic Journal of E-Government*, *11*(1), Article 1.

OECD. (2005a). *Modernising Government: The Way Forward-Organising for Economic Co-operation and Development*. Organisationf For Economic Co-operation And Development.

OECD. (2005b). *Modernising Government: The Way Forward-Organising for Economic Co-operation and Development*. Organisation For Economic Co-operation And Development.

Omollo, B. (2018). Public Financial Management Reforms and Fiscal Policy-A Qualitative Content Analysis of the IMpact of PFM Reforms on Country Budget Income in Sub-Sahara Africa: A Case for Kenya and Rwanda. *Journal on Budgeting*, *18*(1), 167–201.

O'Neil, T., Cammack, D., Kanyongolo, E., Mkandawire, M. W., Mwalyambwire, T., Welham, B., & Wild, L. (2014a). *Fragmented Governance and Local Service Delivery In Malawi* (pp. 1–88). Overseas Development Institute.

O'Neil, T., Cammack, D., Kanyongolo, E., Mkandawire, M. W., Mwalyambwire, T., Welham, B., & Wild, L. (2014b). *Fragmented Governance and Local Service Delivery in Malawi* (pp. 1–88). Overseas Development Institute.

Peng, G., Dey, D., & Lahiri, A. (2014). Healthcare IT Adoption: An Analysis of Knowledge Transfer in Socialeconomic Networks. *Journal of Management Information Systems*, *31*(3), 7–34.

Peters, G. B. (2001). *The Politics of Bureaucracy* (5th ed.). Routledge.

Peterson, R. A. (2000). A Meta-Analysis of Variance Accounted for and Factor Loadings in Exploratory Factor Analysis. *Kluwer Academic Publishers*, *11*(3), 261–275.

Podsakoff, P., MacKenzie, S., & Podsakoff, N. (2012). Sources of Method Bias in Social Science Reserach and Reommendationon How to Control It. *Annual Review Psychology*, *63*(1), Article 1.

Ponto, J. (2015). Understanding and Evaluating Survey Research. *Journal of the Advanced Practitioner In Oncology*, *6*(2), 168–171.

Pontoh, grace T. (2017). The Influence of Technology Acceptance, Social Influence, Facilitating Condition, and Computer Self-Efficacy on E-office Utilizatin in Immigration Office Classs I Makassar. *The Business & Management Review*, *9*(2), 213–218.

Prakash, T., & Cabezon, E. R. (2008). *Public Financial Management and Fiscal Outcomes in Sub-Saharan African Heavily-Indebted Poor Countries*. International Monetary Fund.

Public Service Act (1994), Pub. L. No. 19 (1994).

Public Service Reform Commission. (2015). *The Public Service Reform Commission: Making Malawi Work-Final Report*. Malawi Government.

Queiros, A., Faria, D., & Almeida, F. (2017). Strengths and Limitations of Qualitative and Quantitative Research Methods. *Euorpean Journal of Education Studies*, *3*(9), 369–387.

Richardson, H. A., Simmering, M. J., & Sturman, M. C. (2009). A tale of three Perspectives Examining Post-hoc Statistical Techniques for Detection and Correction of Common Method Variance. *Organizational Research Methods*, *12*(1), 762–800.

Robertson, O., & Evans, M. scott. (2020, June). Just How Reliable is Your Internal Reliability-An Overview of Cronbach's Alpha. *Psychology Postgraduate Affiars Group*, *115*, 23–27.

Rogers, E. M. (1995). Diffusion of Innovatio: Modifications of a Model for Telecommunications. *Die Diffussion von Innovation in der Telekommunikation*, 25–38.

Rondan-Cataluna, F. J., Arenas-Gaitan, J., & Ramirez-Correa, P. E. (2015). A Comparison of the Different Versions of Popular Technology Acceptance Models: A Non-linear Perspective. *Kybernetes*, *44*, 788–805.

Sharifzadeh, M. S., Damalas, C. A., Abdollahzadeh, G., & Ahmadi-Gorgi, H. (2017). Predicting Adoption of Biologyical Control Among Iranian Rice Farmers: An Application of the Extended Technology Acceptance Model (TAM2). *Crop Protection*, *96*, 88–96.

Shrestha, N. (2020). Detecting Multicollinearity in Regression Analysis. *American Journal of Applied Mathematics and Statistics*, *8*(2), 39–42.

Shrestha, N. (2021). Factor Analysis as a Tool for Survey Analysis. *American Journal of Applied Mathematics and Statistics*, *9*(1), 4–11.

Sikwese, L. K. (2013). *Public Sector Reforms In Malawi: How to Support Successful mplementation of the Economic Recovery Plan*. Government of Malawi.

Spicker, P. (2009). The Nature of a Public Service. *International Journal of Public Administration*, *32*(11), 970–991.

Srivastava, S. C., Teo, T. S. H., & Mohapatra, P. S. (2010). Is Information System (IS) Offshoring an Extension of IS Outsourcing?: Concept, Definition and Determinants. In *Globa, Social and Organisational Implication of Emerging Information Resource Management: Concepts and Applications* (pp. 101–117). IGI Global.

Stiglitz, J. E., & Rosengard, J. K. (2015). *Economics of the Public Sector* (Fourth). W. W. Norton & Company, Inc.

Taber, K. S. (2018). The Use of Cronbach's Alpha when Developing and Reporting Research Instruments in Science Education. *Research in Science Education*, *48*, 1273–1296.

Tehseen, S., Ramayah, T., & Sajilan, S. (2017). Testing and Controlling for Common Method Variance: A review of Available Methods. *Journal of Management Sciences*, *4*(2), 146–175.

Thompson, T. I. (2010). *Assessing the Determinants of Information Technology Adoption in Jamaica's Public Sector Using The Technology Acceptance Model* [Doctoral Thesis]. Prescott Valley.

Tubaishat, A. (2018). Perceived Usefulness and Perceived Ease of Use of Electronic Health Records Among Nurses: Application of Technology Acceptance Model. *Informatics for Health and Social Care*, *43*(4), 379–389.

UNDP. (2023). *Global Multidimensional Poverty Index 2023- Unstacking global poverty: Data for High Impact Action*. United Nation Development Programme and Oxford Poverty and Human Development Initiative.

Ursachi, G., Horodnic, I. A., & Zait, A. (2015). *How Reliable are Measurement Scales? External Factors with Indrect Influence on Reliability Estimators*. *20*, 679–686.

USAID. (2017). *Malawi Local Government Acountability and Performance* (pp. 1–59) [Annunal Report Fiscal Year 2017]. USAID.Gov.

Vannoy, S. A., & Palvia, P. (2010a). The Social Influence Model of Technology Adoption. *Communications of the ACM*, 149–153.

Vannoy, S. A., & Palvia, P. (2010b). The Social Influence Model of TechnologyAdoption. *Communications of the ACM*, 149–153.

Venkatesh, V., & Davis, F. D. (2000a). Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science*, *46*(2), 186–204.

Venkatesh, V., & Davis, F. D. (2000b). Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science*, *46*(2), Article 2.

Venkatesh, V., & Davis, F. D. (2000c). Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science*, *46*(2), Article 2.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, *27*(3), 425–478.

Venter, P., Van Rensburg, M. J., & Davis, A. (2021). Drivers of Learning Management System Use in a South African Open and Distance learning Institution. *Australasian Journal of Educataional Technology*, *28*(2), 183–198.

Wahdain, E. A., Ahmad, M. N., & Zakaria, N. H. (2014). Using TAM to study the User Acceptance of IT in the Yemeni Public Sector. *International Journal of Computer and Communication Engineering*, *3*(3), 160–165.

Warner, R. M. (2013). *Applied Statistics From Bivariate Through Multivariate Techniques* (2nd ed.). Sage.

Wicaksono, A., & Maharani, A. (2020). The Effect of Perceived Usefulness and Perceived Ease of Use on the Technology Acceptance Model to use Online Travel Agency. *Journal of Business and Management Review*, *1*(5), 313–328.

Wickramasinghe, V., & Wickramasekara, J. (2022). Putting Public Services Into Enterprise System-Predicting Employees Acceptance of Transformational Government Technolog in an Expanded Technology Acceptance Model. *Public Organization Review*, *22*(2), 345–365.

World Bank. (2017a). *Malawi Public Administration Modernization Project (P164961)* (No. P164961).

World Bank. (2017b). *Malawi Public Administration Modernization Project (P164961)* (No. P164961; Issue P164961).

World Bank. (2019). *Malawi Economic Monitor, June 2019 Charting a New Course*. World Bank.

Yang, H.-D., & Choi, I. (2001). Revisiting Technology Acceptance Model with Social Influence Factors. *PACIS2001 Proceedings*.

Yoon, H. y. (2016). User Acceptance of Mobile Library Application in Academic Libriaries: An Application of the Technology Acceptance Model. *The Journal of Academic Librarianship*, *42*, 67–693.

Zhai, X., & Shi, L. (2020). Understanding How the Perceived Usefulness of Mobile Technology Impacts Physical Learning Achievement: A Pedagogical Perspective. *Journal Of Science Education and Technology*, *29*, 743–757.

Ziba, P. W., & Kang, J. (2020a). Factors Affecting the Intention to Adopt E-government Services in Malawi and the Role Played by Donors. *Information Development*, *36*(3), 369–389.

Ziba, P. W., & Kang, J. (2020b). Factors Affecting the Intention to Adopt E-government Services in Malawi and the Role Played by Donors. *Information Development*, *36*(3), Article 3.