

Constraints To Adoption of ICT by Human Resource Staff of Ghana Commercial Bank A Case of Tamale-Main, Aboabo and Hospital Road Branches

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Abstract

Adoption of ICT in organizational management in general and Human Resource Management (HRM) in Ghanaian banks in particular has so far made a very significant impact among HR functions. A sample seventy (70) respondents were selected from the targeted population using a simple random sampling strategy in order to meet the study's goal. Self-administered closed-ended questionnaire was used to collect primary data from the respondents. The collected data was analyzed using the SPSS software program and the results presented in tables. The study concluded that a higher proportion of junior staff members agreed with the statements regarding the lack of time and internal resources for implementing ICT projects, high financial expense, knowledge scarcity, and lack of support from upper management. The study recommends organizations consider improving the information and training provided to staff members on ICT projects, as a lack of information and understanding may be contributing to the high monetary cost and lack of time to implement ICT projects.

Keywords: Adoption, Constraints, Human Resource

INTRODUCTION

Since the origin of Industrial Revolution in the 18th century, going hand-in-hand with industrialization of agricultural societies and the birth of urbanization, the transcontinental railroad, electricity and other inventions permanently changed the society. The resultant effect of this change also altered administration of commerce and businesses to ensure that economies are stitched together for smooth distribution of goods and service. Emergence of competition among business organizations for raw materials and component parts and for customers also bring

about change in business strategies to increase market share and profit for growth or survival. For sure, businesses in the contemporary world face an intense competitive environment in which, according to Darwinian Theory of Natural Selection, a business' weaknesses will result in its extinction.

Agalamanyi, Eme and Ikechukwu (2012) argued that an excellent organizational structure that is alien to efficiently managed human resource does not warrant increased organizational performance and productivity; all of the logistic structures, capital status,

corporate image, and the rate of expansion of customers and profit are solely hinged on the well-managed human capital of the organization since the human resource are tasked for initiation and determination of the organizational activities; modern fixed capital such as plants, offices, computers, automated equipment and all else that a modern firm uses are futile unless with efficient human motivation and direction. The same way, a well-managed human resource without access to and skills for use of Information and Communication Technologies will still keep the organization going backward as the contemporary organizations are entangled with a very stern business environment in which the organizations will have to struggle survive or must die without accurately managed information.

This struggle for survival and success by businesses is making use of the information and communication technologies, which, according to many authors, is seen to be reliable as it fast-tracks data management, data security, and communication processes within and outside organizations.

Information and communication technology's (ICT) effects on the organization-wide performance cannot be overemphasized. In the human resource department, there is a significant positive relationship between the adoption of ICT in selection and recruitment, training and development, human resource planning, evaluation and compensation and human resource management efficiency (Piabuo, Piendiah, Njamnshi, & Tieguhong, 2017). In another study by Alshubiri, Jamil, & Elheddad (2019) into using fixed broadband and Internet users as proxies for ICT and domestic credit to the private sector as a percentage of gross domestic product (GDP) and broad money supply/GDP as two proxies

of the financial development index, they examined the effects of information and communication technology on the financial development index of six Gulf Cooperation Council (GCC) countries from 2000 to 2016. The results were reported in terms of both ICT. For both of the proxies for financial development, it was discovered that an increase in fixed broadband had a statistically significant and favorable impact. Broadband's beneficial impacts outweighed those of Internet service providers. In production and operations management, the use of modern information and communication technologies (ICT) have given rise to creation of up-to-date production and service operation innovations such as Internet based networked manufacturing, service-oriented manufacturing, platform-based operations, and sharing economy. In the security sector, the use of GPS to take coordinates of crime and accident scenes, tracking of snatched vehicles, and the use of drones to track criminals and transportation of blood in the health sector have given enough to be desired. These innovations have assisted the transformations of business processes in both service and manufacturing organizations; the use of internet and mobile phone technologies have laid the foundation for validating the role of information and communication technology in advancing the success of strategic, tactical, down to the shop floor of the organization and the total advancement of the society.

Thanks to the role of ICT in the advancement of the society, the questions relating to levels and rates of and factors influencing the adoption of ICT innovations still linger in academic literature, measuring the extent to which the innovations' characteristics, socioeconomic and institutional factors of a social system influence acceptance and use of ICT (Alam, Masum, Beh, & Hong, 2016;

Lwanga, 2015; Weber & Kauffman, 2011; Lapiere. & Denier, 2005). In this same context, the ICT innovation' characteristics, socioeconomic and institutional factors contravening successful adoption of ICT are enveloped into the hallmark of constraints to ICT adoption, as evidenced in the study by England, Stewart, and Walker (2000), examining factors constraining information technology (IT) adoption among health sector staff in Australia. Their study revealed that complexity of health organisations and poor coordination among the internal organizational structures negatively affect health staffs' ability to adopt the information and communication technology. Factors constraining adoption of ICT among HR staff among financial institutions in Ghana continuously affect quality of work performance among employees. This study, therefore, was carried out to investigate the factors militating adoption of ICT among HR staff in Ghana Commercial Bank branches in the Tamale Metropolis in the Northern Region, Ghana so that the results of the study could help provide policy recommendations for facilitating efficient performance of HR functions in the said population.

Problem Statement

In development literature, levels of education of both providers and beneficiaries of development programmes continuously impact positively on how quick and effective the programmes yield returns on investment. So, technology adoption studies provide up-to-date information across the globe on best practices for development, thereby providing alternatives for choice, acceptance, and adoption. Adoption of ICT in organizational management in general and Human Resource Management (HRM) in Ghanaian banks in particular has so far made a very significant impact among HR functions. Yet some

literature has revealed that technology-based solutions are not necessarily a panacea for HR managers efforts to exploit HR technology as it has resulted in limited or moderate success (Chapman & Webster, 2003). Several studies in Ghana have focused on e-banking in general (Mandichie, Hinson, & Salifu, 2009; Ackah & Agbonyi, 2014;), looking into the extent to which ICT has been adopted and its associated challenges in promoting banking businesses to the clientele, losing effective touch with Human Resource division specifically; meanwhile the quality of banking staff is heavily hinged on the human resource functions such as recruitment, selection, training, employees' work evaluation, and compensation. This study, therefore, redirected focus on ICT adoption by human resource staff with special attention on its adoption challenges.

LITERATURE REVIEW

Theoretical Framework

In determining the constraints to adoption of ICT innovations in financial institutions, Rogers' (1983) diffusion of innovations theory was the premise of this study.

Everett Rogers established the diffusion of innovations theory, which aims to clarify how, why, and how quickly new concepts and technologies proliferate. According to Rogers, the process of diffusion is how an invention spreads through time among the members of a social system. For Rogers (2003), adoption (acceptance and use) is a decision of "full use of an innovation as the best course of action available" and rejection is a decision "not to adopt an innovation". Rogers defines diffusion as "the process in which an innovation is communicated thorough certain channels over time among the members of a social system". This concept identifies the four main factors that influence the dissemination of innovations as invention,

communication channels, time, and social system. Why? The characteristics of an innovation, the time allowed for the innovation's diffusion, the structures of the medium through which it is diffused, and the nature of communicators and recipients of the innovation, all affect the success of adoption of technological innovation.

Rogers (2003) noted that not all individuals exert an equal amount of influence over others. Because they have more exposure to the media, are more cosmopolitan, come into contact with change agents more frequently, have more social experience, and have a higher socioeconomic status, opinion leaders in the social system, for instance, are influential in disseminating information about innovations, whether it be favourable or unfavourable.

Using this theory in the context of this research is based on the conviction that when ICT (innovation) is delivered to banking sector employees (members), certain obstacles in the beneficiary organization (social system) militate against the success of the ICT innovation's spread. Members within the organization, its internal structure, and the clientele it serves affects the success of innovation that is introduced into it. These obstacles serve as constraints to the adoption of the ICT innovations.

Empirical Findings on Technology Adoption

Technology adoption is not alien to one particular field of study since innovations to improve productivity and enhance service delivery is a competitive weapon for the survival of any organization both profit and non-profit. In agricultural technology adoption literature (as in the case of Hassan and Hamza, 2018 in Ghana; Simtowe, Asfaw

and Abate, 2016 in Malawi; Afolami, Obayelu and Vaughan 2015 in Nigeria, Asfaw, Shiferaw, Simtowe, and Haile, 2011 in Ethiopia etc.), for instance, the disparities in the rate of agricultural technology adoption are closely linked with the differences in returns on investment in technology and arguably linked with differences in the characteristics of the technology itself, gender, socioeconomic, and institutional disparities in the social systems in which the technology is diffused. Rosenzweig and Foster (2010), too, noted that the differences in technology levels across the globe account for a large international difference in wages and per-capita GDP. In their micro studies examining the factors affecting technology adoption in low-income countries, Rosenzweig and Foster (2010) found that financial and nonfinancial returns to adoption, one's own learning and social learning, technological externalities, scale economies, level of education, credit constraints, risk and incomplete insurance, and departure from behavioural rules implied by simple models of rationality significantly influence technology adoption.

Technology adoption studies are also of greater importance to the success of healthcare delivery. Almeida, Farias, and Carlalho (2017) conducted studies into the drivers of technology adoption in healthcare in Brazil in order to propose a framework for studying diffusion of ICT in management and assistance services among public hospital managers and to determine the applicability of such framework. They found that available drivers of resources, felt needs or problems, innovativeness, internal IT resources, level of the patient demand, norms of the social systems, organizational leaders, and previous practices greatly influence adoption of healthcare technologies in the population under study. Hu, et al. (1999) also assessed

Technology Acceptance Model (TAM) with the use of Physician Acceptance of Telemedicine Technology among public tertiary hospitals in Hong Kong. Technology Acceptance Model (TAM) in the study depicted physicians' intention to use telemedicine technology. They found Perceived usefulness as a significant factor influencing physicians' attitude towards telemedicine technology and intention to use the technology. Alrabi, Khan and Hussain (2019) explored the facilitators of adoption of Information technology in healthcare in the United Arab Emirate (UAE) based on a two-step exploratory methodology. Ranked in descending order of importance, government support, knowledge sharing, infrastructure, green management, lean management, internal/external environment, and social sustainability were motivators of ICT adoption in healthcare in the study area. In another study, Phichitchaisopa and Naenna, (2013) examined determinants of adoption of healthcare Information Technology (IT) services among physicians, nurses, and hospital staff members in Thailand. They found that performance expectancy, effort expectancy and facilitating conditions significantly influence the respondents' behavioral intention to use healthcare information technology.

Not only in healthcare sector, but also in national security such as defence, interior and forensics, technology adoption studies continue to feed the sector with up-to-date information on how to improve national and social security delivery to efficiently fulfil the social contract they swore an oath to deliver to their clients. As advancement of technology is redesigning nearly how crime is committed, law enforcement agencies have to adopt high-tech systems and logistics to enhance public safety, apprehend criminals

and save lives. Drones, body-worn cameras, facial recognition software, artificial intelligence (robotics), in addition to DNA and other biometric devices for voice recognition, palmprints, wrist veins, iris recognition, heart beats and gait analysis are some of the information technologies used by the police in their day-to-day professional activities (Fritsvold, 2019); yet adoption of these technologies has been a challenge to different departments and ranks of police officers for which essence studies have to be carried out to discover ways of facilitating adoption of these technologies. A research about the impact of technology on policing strategy in the 21st century was conducted by Strom (2016) in Washington DC to determine why police select, implement, integrate new technology; how such new technology is being used; and also to verify whether a new technology improves policing meaningfully for both police and the community. Strom (2016) found that a greater proportion of large agencies accept and use the technology than those from the entire sample under study while, on the contrary, large agencies were less likely to use some technological devices (body-worn cameras) in the past two years before data collection. Findings also indicated how technology differed from agency to agency. He also found that the success or failure of technology was so multidimensional that it could rarely be traced to a single issue; rather, technology identification and adoption involved complex processes, so determinants of technology success or either could be equally diverse. Not only in the security services, adoption of technological innovations is also of greater worth to businesses and management and for that matter research in that sector can help in discovery of new technologies and ways of improving adoption of those technologies. Sargent, Hyland, and Sawang (2012), for

instance, studied factors influencing adoption of information technology in a construction business in order to understand what influence individuals' intentions to utilize technologies so that managers could be informed how to implement strategies to improve technology adoption. They found that effort expectancy, internal facilitating conditions and top management support significantly influence individuals' intentions to use information technology. Results also showed that resistance to change does not play a role in technology adoption. In another study by Au and Enderwick, (2000) into the cognitive process influencing attitude towards technology adoption, compatibility; enhanced value; perceived benefits; adaptive experiences; perceived difficulty; and suppliers' commitment were found to significantly influence technology adoption. Individual external environmental forces were insignificant to explain the formation of a behavioural intention to accept and use the technology.

Also, in the field of education, technology adoption studies have shaped educational policies, updated teaching methods that result in high calibre of employees to feed the manufacturing and service industry. E – Learning which is currently propagated amidst COVID 19 pandemic to substitute for on-campus learning cannot be overemphasized. Hospitals, through the mobile phone technology, provide prenatal, perinatal and post-natal education to households on how to manage conditions challenging their state. The internet, the television and radio continuously influence civic education, politics, classroom lessons delivery.

Constraints to Adoption of ICT

Among the major roles of ICT is careful information handling. Data collection is often

the stage of research process that requires huge expenditure and for that matter the information got from processed data needs to be properly handled for current and future use. The information expert must handle information carefully since it is a resource. The primary goal of good information handling, according to Angela (1996) is to ensure that accurate and reliable information is acquired at minimum cost and available to the right recipients at the right time so as to enable the users take reliable information base decisions, formulate dependable policies or communicate effectively. ICT tools are meant for use in generation, storage, processing, retrieval and dissemination of the right information to users; meanwhile, without the right ICT personnel, including other factors, the main purpose of ICT cannot be achieved. For instance, using a descriptive survey in investigating the usage of databases for data storage and retrieval at a few chosen banks in Nigeria's Delta state, The lack of e-banking services in Delta State's remote and rural areas, the absence of inter-bank deposit clearing, the high cost of computers, internet access, and other ICTs, some staff members' lack of ICT knowledge and skills, and staff members' aversion to using ICT facilities were all discovered by Rexwhite, Doreen, and Akpovoka (2013), insecurity in Banks, bank network/systems breakdown, and epileptic electricity supply continuously constrained effective ICT use in information handling among the selected banks in Nigeria; they, therefore, recommended that frequent and a well-equipped IT department will help in the management of information, while timely database upgrades that incorporate new innovations and techniques in application in banking services and financial information management, effective time management that will yield better results in managing information, bandwidth that will

accommodate the number of bank staff and customers, and constant anti-virus upgrade to protect against virus attack.

Conceptual Framework

(Challenges/Constraints to ICT adoption)

- Lack of Necessary Internal Skills
- Lack of Time to Implement ICT Project
- High Monetary Cost

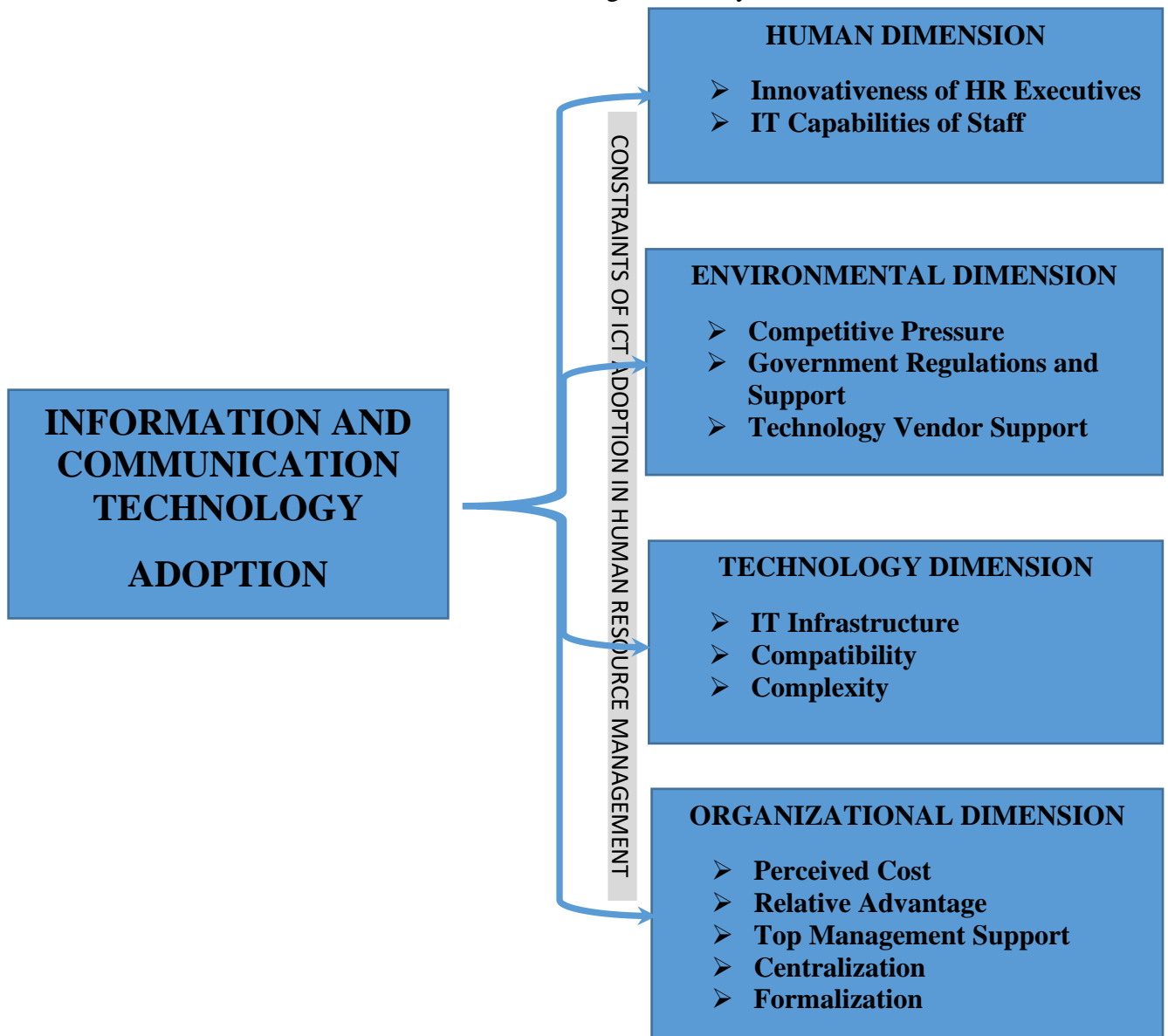


Figure 1: The Conceptual Framework of ICT in Human Resource Management

Source: Tornatzky LG, Fleischer M. (1990) Processes of technological innovation model

- Lack of availability of Information
- Government Regulation
- Lack of top Management support
- Bad experience in the past
- Competitive Pressure
- Number of employees served

Employee's Personal Characteristics

Gender

Age

Qualification (Certificate, Bachelor, Masters, PHD)

Length of Service

Number of ICT training attended within last year

METHODOLOGY

The Study Area (brief history, mission and vision, staff composition)

The Study Area

Ghana Commercial Bank (GCB) is one of the largest commercial banks in Ghana, with a long and rich history that dates back to 1953. The bank was established as the Bank of the Gold Coast, a subsidiary of the Bank of West Africa, to provide banking services to the newly independent country of Ghana.

In 1957, when Ghana gained independence, the Bank of the Gold Coast was renamed the Ghana Commercial Bank and became fully Ghanaian-owned. The bank played an important role in the economic progress of the country, providing loans and other financial services to both individuals and businesses.

Over the years, GCB has expanded its operations and services, opening new branches across Ghana and offering a wide range of financial products and services, including personal banking, business banking, investment banking, and more. Today, GCB is a leading financial institution in Ghana, with a strong reputation for stability and reliability.

In 2013, GCB celebrated its 60th anniversary, marking six decades of service to the people of Ghana. The bank has continued to innovate and adapt to changing market conditions, while maintaining its commitment to customer service and financial excellence.

The mission statement of Ghana Commercial Bank (GCB)

"To be the leading and preferred Bank in Ghana providing excellent banking experience through customer-centricity, innovation and technology."

This mission statement emphasizes GCB's commitment to providing exceptional customer service, embracing innovation and technology, and becoming the top choice for banking services in Ghana.

The vision statement of Ghana Commercial Bank

"To be a world-class Bank providing superior shareholder value, excellent customer service and innovative banking solutions. "This vision statement highlights GCB's goal of becoming a world-class financial institution, focused on delivering value to its shareholders, providing outstanding customer service, and leveraging innovative banking solutions to achieve its goals.

The study used Tamale main branch, Tamale Hospital Road, and Aboabo branches of Ghana commercial Bank with staff composition ranging from contract staff, junior to senior staffs

Methods of Data Collection

To attain the objective of the study, data was amassed from HR staff of 3 branches: Tamale-Main, Aboabo, Hospital Road branches of GCB within the Tamale Township in the Northern Region through a structured questionnaire. The respondents were carefully chosen by simple random

sampling technique. Questions were asked on demographic characteristics of the population under study. Variables in the conceptual framework were also asked to respondents in 5-point likert scale was used (1 = strongly disagree...5 = strongly agree). Following Slovins' sample size determination formular, a sample 70 respondents was drawn to get information

from all the categories of the work force of the three branches of bank. The sample size was proportionally allocated among senior, Junior and contract staff. The senior staff account for 26% and junior staff account 64% while contract staff make up 10 of the sample. The Table 1 below shows the distribution of the population by staff category.

Table 1: Distribution of sample size by staff category

Staff Category	Frequency	Percentage (%)
Senior	18	26
Junior	45	64
Contract	7	10
Total	70	100

RESULTS AND DISCUSSION

Demographic characteristics of respondents

Table 2 shows the results of the demographic characteristics of respondents. Out of 70 respondents, 30% were from Aboabo Branch, 27.1% were from Hospital Road Branch and 42.9% were from Tamale Main Branch. Majority of the sampled respondents were male 55.7% and the remaining been female 44.3%. Most of the respondents were within the age group of 40-49 years

representing 35.7% and the least age group (50 years and above) constituted 7.1% of the sampled population. The highest level of qualification among the population was a Bachelor's degree, with 51 respondents (72.9%) having that qualification and only 2.9% have qualification of PhD. Most of the respondents (64.3%) were junior staff while a least of 10% were Contract staff. Majority of the respondents (40%) have working experience from 5-6 years and few (7.1%) have 1-2 years working experience. Out of 70 respondents, majority (48.6%) did not attend any ICT training and few (21.4%) attended twice.

Table 2: Descriptive statistics of respondents' demographic characteristics

Variables	Frequency	Percentage (%)
Branch		
Aboabo	21	30.0
Hospital Road	19	27.1
Tamale Main	30	42.9
Gender		
Female	31	44.3

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Male	39	55.7
Age		
20-29	16	22.9
30-39	24	34.3
40-49	25	35.7
50+	5	7.1
Qualification		
Bachelor	51	72.9
Certificate	5	7.1
Masters	12	17.1
PhD	2	2.9
Category of staff		
Contract	7	10.0
Junior staff	45	64.3
Senior staff	18	25.7
Length of service		
Less than a year	7	10.0
1-2yearas	5	7.1
3-4years	12	17.1
5-6 years	28	40.0
7 years and Above	18	25.7
Number of ICT training attended within last year		
None	34	48.6
Once	21	30.0
Twice	15	21.4

Constraints to ICT adoption of respondents

The results shown in Table 3 reveal that there is a significant relationship between each of the variables and the staff categories (p -value < 0.05). Specifically, the results indicate that a higher proportion of junior staff members agreed with the statement that there is absence of essential interior skills, inadequate time to implement ICT projects, a high monetary cost, inadequate availability of information, and a lack of top management support. On the other hand, a higher proportion of senior staff members disagreed with the statement that there is

absence of top management support and had a bad experience in the past.

According to the results, a higher proportion of junior staff members agreed with statements such as absence of required interior skills, inadequate time to implement ICT projects, a high monetary cost, and inadequate availability of information. This suggests that the junior staff members face more difficulties in implementing ICT projects compared to senior staff members. Additionally, a higher proportion of junior staff members agreed that there is a lack of top

management support, which could indicate that they feel unsupported in their work.

On the other hand, a higher proportion of senior staff members disagreed with the statement that there is a lack of top management support, which suggests that they feel more supported by the top management. They also had a higher proportion of members who had a bad experience in the past, which could mean that they have faced difficulties in

implementing ICT projects in the past and are more experienced in dealing with these issues.

These results highlight the differences in the experiences and perceptions of junior and senior staff members, and can be used to address the concerns of each group and improve the implementation of ICT projects. It is important to understand the perspectives of both groups in order to find solutions that work for everyone.

Table3: Constraints to adoption of ICT by respondents

Variables	Staff Category			Test Statistic χ^2 (p-value)
	Contract	Junior staff	Senior staff	
	N(%)	N(%)	N(%)	
Lack of Necessary Internal Skills				46.121(0.00)
Agree	7(10.0)	45(64.3)	5(7.1)	
Disagree	0(0.0)	0(0.0)	13(18.6)	
Lack of Time to Implement ICT Project				59.918(0.00)
Agree	7(10.0)	45(64.3)	2(2.9)	
Disagree	0(0.0)	0(0.0)	16(22.9)	
High Monetary Cost				46.121(0.00)
Agree	7(10.0)	45(64.3)	5(7.1)	
Disagree	0(0.0)	0(0.0)	13(18.6)	
Lack of availability of Information				59.918(0.00)
Agree	7(10.0)	45(64.3)	2(2.9)	
Disagree	0(0.0)	0(0.0)	16(22.9)	
Government Regulation				24.074(0.00)
Agree	7(10.0)	14(20.0)	0(0.0)	
Disagree	0(0.0)	31(44.3)	18(25.7)	
Lack of top Management support				64.864(0.00)
Agree	7(10.0)	45(64.3)	1(1.4)	
Disagree	0(0.0)	0(0.0)	17(24.3)	
Bad experience in the past				22.980(0.00)
Agree	7(10.0)	19(27.1)	0(0.0)	
Disagree	0(0.0)	26(37.1)	18(25.7)	
Competitive Pressure				24.607(0.00)
Agree	7(10.0)	24(34.3)	0(0.0)	

Disagree	0(0.0)	21(30.0)	18(25.7)	
Number of employees served				56.667(0.00)
Agree	7(10.0)	42(60.0)	0(0.0)	
Disagree	0(0.0)	3(4.3)	18(25.7)	

CONCLUSION AND RECOMMENDATION

Based on the results of the survey, the following conclusions can be drawn:

The findings revealed a significant relationship between each of the variables and the staff categories, indicating that there are differences in opinions among the staff categories on the factors affecting the implementation of ICT projects.

A higher proportion of junior staff members agreed with the statements regarding the absence of the required interior skills, inadequate time to implement ICT projects, high monetary cost, inadequate availability of information, and absence of top management support.

Senior staff members are more likely to disagree with the statement that there is a lack of top management support and have had bad experiences in the past.

Based on these conclusions, the following recommendations can be made:

The organization should focus on addressing the concerns of junior staff members, particularly in terms of internal skills development and the allocation of time and resources for ICT projects.

Top management should also prioritize providing support for ICT projects, as this is seen as a major concern among junior staff members.

The organization could also consider improving the information and training provided to staff members on ICT projects, as a lack of information and understanding may be contributing to the high monetary cost and lack of time to implement ICT projects.

To address the concerns of senior staff members regarding past bad experiences, the organization could consider conducting an evaluation of past ICT projects and identify areas of improvement.

It may be beneficial for the organization to establish a system of continuous learning and skill development, particularly in the area of ICT, to ensure that staff members are equipped with the necessary skills to effectively implement ICT projects.

Further research could be conducted to gain a deeper understanding of the differences between junior and senior staff members and how these differences impact the implementation of ICT projects.

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