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Attributes Influencing Effectiveness of Employees' Innovation in Telecommunication Industry in Tanzania

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ABSTRACT

This study aimed at examining attributes influencing the effectiveness of employees' innovation in telecommunication industry in Tanzania using Tigo as a reference. Specifically, the study focused on the assessment of the influence of personal competence, leadership styles, technology and financial resources on employees' innovation in terms of the number of employees' creative ideas and projects turned into innovation. The study employed a cross-sectional survey strategy to collect data from a sample of 78 employees and open-ended questionnaires to collect additional information from 5 key informants who were senior members of Tigo, Tanzania. Descriptive statistics and Multiple Linear Regression were used to analyse data and test formulated hypotheses respectively. The findings show that leadership styles and technology strongly influence employees' innovation in Telecommunication Companies. The study findings imply that it is very crucial for human resource directors to motivate staff to make them innovative. Also, ICT, research and development departments should be given more budgets and intensive trainings in order to build employees' innovative capacity. Therefore, it is recommended that technology and leadership style should be seriously considered by company's management when making strategies and plans for innovative growth in an organization particularly Telecommunication Industry.

Key words: Personal competence, Leadership style. Financial resource, Technology and Employee's innovation.

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1.0 Introduction

One way for organizations to become highly innovative is to capitalise on their employees' abilities to innovate (De Jong and Hartog, 2007; Alblooshi et al., 2021). Innovation in a telecommunication organization is the ability to frequently bring new ideas to enable the organizations excel in the market and their operations as a whole (Arena et al., 2017). This is where people produce valuable products, processes, methods including generating new ideas for the organizations' growth (Zhou and Shalley, 2003; Zhang and Wang, 2021). As Li and Yishuang (2014) posit, for acquiring and sustaining competitive advantage to survive and even excel during unexpected changes, the firm has to continuously innovate and therefore, employees are an important resource for companies, it is their competence that brings about innovation and performance to an organization (Hana, 2013). According to Mwakajila et al (2020), employees are to initiate creative ideas and turn them into innovation. Globally, the USA and the UK have been successful and are the leading countries with industries that turned creative ideas and projects into innovation, (Merigó et al, 2016). In Africa, most telecommunication companies are still in low level of innovation unlike countries in west Africa which are improving annually (Ajide, 2016). In the Tanzanian context, the challenges to innovation have been linked to the lack of strong political commitment to build research and innovation capacities among peoples and the lack of awareness of new sources of technology (Mahemba and Bruijn, 2003).

Various countries have been promoting innovation; for instance, China promoted innovation by establishing the policy of "indigenous innovation" which is organized into the national medium and the long-term plan for science and technology (Zheng and Yang 2021). The policy aimed to enable companies invest more in technology (Heredia et al, 2020). In Japan, the national innovation web was established to link the duties of industries, the government and universities in improving innovation at nationwide (Kwon & Motohashi, 2017). The policy directs the universities to impart innovation knowledge and behaviour to the youth and industries and create the environment of being the home of ideas generation and innovation. On the other hand, in Tanzania some of the measures to improve innovation have

been taken. For example, the government has disbursed money to various institutions to conduct research and development projects (Moldovan, 2021). Efforts have also been made to introduce innovation hub and incubation in universities and colleges (http://www.costech.or.tz/innovation-spaces, 2021); thus, colleges such as the Institute of Accountancy Arusha and Mbeya University of Science and Technology have innovation hubs and incubators.

It is reported in that telecommunications industry in Tanzania is one of the most competitive sectors (https://www.export.gov, 2016). Furthermore, the Tanzania telecommunication Industry is among the largest telecommunication in East Africa with 79 per cent of penetration of the entire population in 2015 (Sedoyeka, 2017). This is attributed to an increase in telecommunication density at an annual average rate of 6 per cent for five years from 2011 to 2016. The penetration increased by 20 per cent from 59 per cent in 2011 to 79 per cent in 2015 and reached 80.2 per cent as of September 2016 with 40,110,187 subscribers. One of the drivers for such progress is the rivalry in the telecommunication sector, which necessitates inventions, growth and marketing to rise subscription base (https://www.export.gov, 2016). Various telecommunication companies have been registered in Tanzania and these include Tigo Tanzania, Vodacom Tanzania, Airtel, Zantel, Smart, TTCL. Due to stiff competition among telecommunication companies in Tanzania, managements of respective companies have been trying to insert in new ideas to produce new products in the market that will attract more customers who become loyal to the service companies. This is not a simple job, but rather, it needs creative personnel, technology, financial resources and good leadership styles to consistently have a new innovation to their work and ultimately to grab a large number of new customers.

Several studies conducted on employees' innovation did not focus on independent variables focused on this study. For example, De Jong and Den Hartog (2007) and Parzefall et al. (2008) looked on the kind of jobs as well as organization level and ignored other factors such as leaders' behaviour, involvement of employees in creating ideas, financial and technological resources which may be used by an organization to implement good leadership and acquire knowledge and competence. Smith et al (2008); Nijhof et al (2005)

and Murphy (2016) looked at the influence of knowledge and management on innovation creation focusing on corporate strategy, environment and planning. Similarly, Arena et al (2017) revealed that organization culture is very important in enhancing innovation. All these scholars disregarded technology and personal competence as variables that can influence innovation. Moreover, previous researches on telecommunication industry emphases on digital market development (Arnold, 2022) and established a number of mobile apps (Hellström and Tröften, 2010). These studies did not consider issues such as employees' awareness of technology and possession of genuine technology. In Tanzania, there is inadequate coverage of empirical studies on innovation especially in telecommunication industry compared to other countries especially the western countries (Mahemba and De Bruijn, 2003; Ndesaulwa and Kikula, 2016). The studies on innovation in telecommunication companies in Tanzania focused on the influence of innovation strategy (Dilunga, 2020) and digital and mobile marketing technology (Chille, 2018, Chille et al, 2021) on company's performance. These researches lacked a link with employee's innovation and thus implying that, little has been done to identify attributes influencing employees' innovation in Tanzania. The current study therefore intends to determine the extent to which employees' competence, leadership style, financial resources and technology influence employees' innovation in telecommunications industry in terms of the number of creative ideas and projects turned into innovation.

Two theories underpin this study, the first theory is Kirton's Adaptive-Innovative (KAI) Theory which originated in the idea that each person (employees) is innovative and solves problems (Kirton, 2003). It was developed in order to clarify cognitive tendencies and problem-solving styles. In explaining the theory, Kirton elaborates adaptors and innovators as key person(s) or things that leaders should know on how to differentiate to help them to better influence and manage teams of people who are diverse in their cognitive styles. Kirton (1976) describes adaptors as individuals who prefer to "do things better." They prefer to develop a team and or an organization within the existing framework (Cole, 2021; Kaufman, 2004). Innovators are referred to as people who prefer to do things differently. According to Kwang et al (2005) and Stum (2009), innovators have a tendency to renovate the entire work process and so the

two concepts overlap, adoptive behaviour depends on innovative behaviour. In this regard, KAI theory is used in this study to show the significance of people's competence and knowledge to creativity and innovativeness in the organization. This is because the organization (Tigo in our case) can adopt this theory to find out how people solve problems and eventually generate innovative ideas that will keep the organization into competitive advantage and win the market.

On the other hand, the key assumptions from KAI theory lacks some key concepts relating to the main variables of this study such as technology and financing. To supplement KAI theory, another theory namely Interactionist Model of Creativity (IMC) is introduced. This theory exposes the importance of business interactions among companies in acquiring finances for innovation projects (West and Bogers, 2014). Also, the theory assumes that through interactions, organizations will be able to learn and adopt technologies that will improve innovation in their organizations (Meneely and Portillo, 2005). Moreover, Woodman and Schoenfeldt (1990) proposed an interactionist model of creative behaviour at an individual level. According to them creativity is a complex product of people's behaviour in a given situation. They further observe that a person is influenced by various antecedent conditions and bears both cognitive and non-cognitive traits (Gupta and Banerjee, 2016; Lundvall, 2016). In terms of personal competence, the theory holds that cognitive and reasoning factors, inherent motivation and knowledge may make a person more innovative and creative (Hyland and Beckett, 2005; Haslam et al., 2017). The theory also elaborates other issues under group creativity (Hemlin et al., 2008), such as social connections and creativity training, resources, rewards, technology and strategy as issues that need to be considered when the organization wants to be innovative. Therefore, this theory is used in this study to indicate that interactions influence financing, technological and cognitive strategies in the organization.

From literature review, the study framework consists of the factors influencing innovation in telecommunication companies, namely, person competence, leadership style, technology and financial resources. These are considered as

independent variables in this study. On the other hand, employee innovation is considered as an dependent variable.

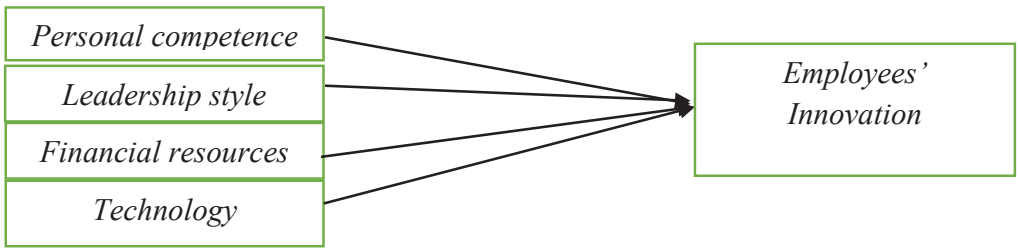

Figure 1: Conceptual framework for the study

The model presented in Figure 1 indicates the interrelation of independents and dependent variables. Independent variables are personal competence, leadership style, financial resource and technology. All these factors show what employees of Telecommunication Company (Tigo in our case) need in order to be more innovative. On the other hand, the dependent variable is employee's innovation. From the conceptual framework, the following hypotheses are formulated.

H1: Person competence has a positive influence on employees' innovation

H2: Leadership style has a positive influence on employees' innovation

H3: Financial resource has a positive influence on employees' innovation

H4: Technology has a positive influence on employees' innovation.

Therefore, to address personal competence, financing, technology and leadership styles the study is intended to: i) ascertain if personal competence influence employees' innovation in telecommunication industry; ii) determine the influence of leadership style on employees' innovation; iii) establish if financial resources influence on employees' innovation in an organization and iv) determine the extent to which technology influence employees'

innovation in a telecommunication company. The results in this study will have a significant contribution to policy makers because it will be a base and empirical reference for policy makers in building good policies and laws that will smoothly make people and organization innovative. Not only that, data and studies on innovation factors in the organization are important for the assessment and action taking. Also, it shows how employees in an organization behave on innovation and how they react and apply the new ideas introduced. Further, it will help other small organizations, even businesses that are not in the telecommunication industry to know how to influence employees and apply creative ideas for their business growth.

2.0 Methodology

The study was conducted at Tigo, Tanzania Headquarters located in Dar es Salaam region. The area was selected because the headquarters is where educated and experienced personnel in telecommunication industry is located and therefore reliable information from the selected respondents was expected to be accessed to help in drawing pertinent conclusion for this study. Tigo has been the company of its own creativity and innovation amongst the telecommunication industries in Tanzania with more than 400 employees (https://www.datanyze.com, 2012; http://www.tigo.co.tz/). This is confirmed by a variety of its products such as Tigo Pesa App, "Halichachi", "Jaza ujazwe." and "wajiftishe" offered to customers. Through this, the number of customers has been increasing in recent years reaching over nine million (TCRA, 2015; https://www.export.gov, 2016). The research adopted a cross-section survey strategy using quantitative approach. A cross-sectional survey helps researchers to collect data at one point in time (Zumkeller and Ottmann, 2009). Questionnaires were used to collect quantitative data which were analysed in order to facilitate generalization (Apuke, 2017). The target population for this study was all employees from Tigo offices in Tanzania but only 82 employees from the headquarters in Dar es Salaam were randomly selected. The sample of 82 employees was obtained by using the rule of thumb highlighted by Philemon and Kessy (2015). The rule requires that the sample should be greater or equal to 50 plus the product of 8 and a number of independent variables. In this study, the independent variables were 4, so by multiplying

with 8 results in 32 plus 50 brings a sample of 82 (i.e n≥50+8*4). However, only 78 respondents returned the questionnaires. To resolve the sample limitation, researchers requested 5 key informants to narrate and give out their views on the studied factors. Therefore, the open-ended questionnaire was given to the Chief Commercial Officer (CCO), the Chief Technology and Information Officer (CTIO), the Director of Special Project (DSP), the Chief Human Resource Officer (CHRO) and the Chief Finance Officer (CFO) for in-depth information about the topic. Furthermore, data in this study were collected through close-ended questionnaires measured in five points Likert scale (strongly agree, agree, neutral, disagree, and strongly disagree). The questionnaire was in two parts: the first part was the respondents' demographic information and the second part encompassed information on key independent variables with reference to employees' innovation that were measured by the number of ideas turned into innovation (Ramamoorthy et al, 2005; Bauernschuster and Falck, 2009; BEIS, 2018; Dostie, 2018) and the number of teams and employees who submitted new project products (European Commission, 2019; González et al., 2016) in the organization. From the questionnaire, the statements gather respondents' opinions on independent variables was formulated by the guidance from previous researches and literatures. Data were analysed using descriptive statistics including mean and standard deviations to support the analysis. Furthermore, Multiple Linear Regression and multicollinearity test were conducted to establish the relationship between independent variables and to determine whether the collected data supports or rejects the research hypotheses. Multiple Linear Regression was used because employees' innovation is a continuous variable measured by referring to several of creative ideas and projects converted into innovation (Fang & Lahdelma, 2016). The multiple linear regression model is presented as follows:

$$Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

From the model; Y = Employees' innovation; X_1 = Personal competence; X_2 = Leadership styles; X_3= Financial resources; X_4= Technology and ε = A disturbance term whereas β0, β1, β2, β3 and β4 are coefficient values that may be positive or negative.

To ensure validity, piloting technique was employed, the pilot test with a sample of five respondents from Tigo Tanzania was done, the respondents of the test pilot were not included in the final study sample. Piloting helped the researcher to check the clarity of instruction and the sequences of the items in the research instruments (Bowden et al., 2002).

Reliability is the type of research design that measures consistence, the degree to which an instrument measures the same way each time it is used under the same condition with the same subjects (Hair et al., 2010). In terms of reliability, a genuine data collection technique was used in this study. The data were collected through survey, and a Cronbach alpha coefficient test was used for analysis. According to Hair et al (2010), Cronbach's Alpha reliability coefficient is required to be greater than or equal to 0.7. The reliability of all variables was established using Cronbach's Alpha from SPSS 20, whose results showed that all variables ranged from 0.701 to 0.846. The results of reliability statistics are shown in Table 1.

Table 1: Reliability Statistics of variables

Variables	No of Items	Cronbach's Alpha	Remarks
Personal Competence	5	0.701	Reliable
Leadership styles	4	0.778	Reliable
Financial Resources	6	0.846	Reliable
Technology	5	0.799	Reliable

Source: Author computation (2021)

3.0 Results and Discussion

3.1 Respondents' Characteristics

The respondents' characteristics were categorized into different categories namely, gender, age, education level, and area of specialisation to determine their influence on issues such as participation and acceptance of changes in work organization. As for gender the findings in Table 2 reveal male and female respondents were equally distributed involving 39 each, representing 50 percent for each participating group. In terms of age, 53 (68%) of the

respondents were between 20 to 30 years of age. This is followed by 25 respondents (32%) belonging to the age group of 31 to 45 years of years, no respondents above years of age. The findings indicate that most respondents were between 18 to 45 years of age. This implies that people of this age group are more active than other age groups in innovation in an organization. Also, as for education level, the findings reveal that , 55 respondents (71%) out of 78 respondents had bachelor degrees, 12 (15%) had diploma and 11 (14%) had postgraduate. This means that most respondents in this study were educated.

Table 2: Respondents information

Variable	Frequency	Percentage
Gender		
Female	39	50
Male	39	50
Age		
20 to 30 Years	53	68
31 to 45 Years	25	32
46 to 55 Years	-	-
56 to 65 Years	-	-
Education levels		
Bachelor degree	55	71
Diploma	12	15
Postgraduate	11	14
Specialization area		
Marketing	26	33
Accounting	14	18
Human resource	10	13
Information technology	07	09
Project management	05	06
Other specialization	16	21
Working experience		
Less than three years	39	50
Four to ten years	36	46
More than ten years	03	04

Source: Author computation (2021)

Area of specialization of the respondents was considered in this study because it was deemed to have significance in the analysis as staff at Tigo were envisaged to specialise in various fields including information technology, financial resource, human resource and marketing, which were among the independent variables of the study. Thus, the staff specialized in these areas were expected to be highly active in innovation pertaining to the company's mission and vision. Thus as for the areas of specialisation the results show that 26 respondents, which is 33 percent were specialized in marketing, 14 (18%) were in accounting, 10 (13%) were in human resource, 7 (9%) were in information technology, 5 (6%) in project management and 16 (21%) were found to specialize in other fields such as planning and management. The working experience information from the respondents was required in this study to determine the respondents experience in executing innovation in the organization. The results under this category revealed that 39 (50%) had experience of less than three years, 36 (46%) had four to ten years of experience and only 3 (4%) had experience of more than ten years.

3.2.1 Personal competence and employees' innovation

The first objective of this study sought to examine the influence of personal competence on employees' innovation. Five questions were asked to the respondents regarding the level of specialized skills, the level of knowledge, attitude, experience and personal competence. The results show that specialized skills had a mean score (M=4.05), the level of knowledge (M=4.17), attitude (M=4.18), experience (M= 3.47) and personal competence (M=4.24).

Table 3: Descriptive statistics on influencing attributes

Variables	N	Mean	Std. Deviation
Personal Competence			
Level of specialized skills	78	4.05	.952
Level of knowledge	78	4.17	.959
Attitude	78	4.18	1.003
Person experience	78	3.47	.963
Personal competence	78	4.24	.759
Leadership Styles			
Involvement of employees in decision making	78	4.42	.845
Innovative behaviour amongst leaders	78	4.29	.824
Delegation of authority	78	4.18	.864
Flexibility of leadership	78	4.14	.817
Financial Resources			
Supportive financial resources	78	3.59	1.098
Financial support in research and development	78	4.13	.812
Financial support to implement idea	78	4.13	.779
Financial support for brainstorming	78	3.63	1.021
Financial rewards	78	4.09	.996
Financial resources enable staff to develop innovative behaviour	78	4.00	.897
Technology			
Employee's awareness on ICT	78	4.27	.681
The use of technology in generate new ideas	78	3.97	.760
Accessibility to varied technology	78	4.17	.733
Adoptability of technological change	78	4.12	.648
Good and genuine technology influence innovation	78	4.06	.767

From the findings, the majority of the respondents agreed that competence of an employee has some influence on their effectiveness on innovation in their organization. This result concurs with the results from a study by Alblooshi et al (2021) and Mahemba and De Bruijin (2003) who studied the relationship between innovation and growth performance. The study revealed that knowledge and skills enable innovation activities in an organization. The finding is also consistent with the findings in a study by Papa et al., (2018) who revealed that personal knowledge and competence are factors that influence knowledge creation and innovation in an organization. Furthermore, the results are linked with interactionist theory of creativity by Woodman and Schoenfeldt (1990) who revealed that individual creativity is a function of personal knowledge and abilities. According to Harrington (1990), innovative organization will basically include understanding the creative process, product and creative person.

The Chief Human Resource Officer (CHRO) Tigo, revealed that competency of a staff matters a lot in making him or her innovative.

> "…This is because through having competency, staff believe in him or herself and trust on whatever she/he is doing."

3.2.2 Leadership styles and employees' innovation

The second objective of this study sought to ascertain the relationship between leadership style and employees' innovation. Five questions were asked regarding the involvement of employees in decision making, innovative behaviour amongst leaders, delegation of authority and flexibility of leadership. The findings in Table 3 show the components of leadership styles in influencing employees' innovation. The statement on involvement of employees in decision-making had a (M= 4.42). Innovative behaviour amongst leaders had a (M= 4.29), delegation of authority (M=4.18) and flexibility of leadership (M= 4.14). The findings indicate that respondents' mean score is above 4, implying that the respondents strongly agreed that leaders' styles in an organization have a positive influence on employees' innovative ability. A similar study by Alblooshi et al (2021) and De Jong and Den Hartog (2007) looked at leadership styles and behaviours such as delegation, recognition and support

of innovation as factors that stimulates employees' generation of ideas in an organization. Similar findings are reported in other studies (i.e., Zhang and Wang, 2021; Nijhof et al., 2005) which revealed that leadership is an influential factor of knowledge creation and innovation. The findings are consistent with the notions of the Adaptive-Innovative Theory constructed by Kirton, (2003) who indicates that in order to manage diversity a company of cognitive styles, a leader must maintain the capacity to benefit from the creativity of the teams in solving organisational problems. The theory supported the notion that organizing team work helps the people to be creative. Moreover, The CHRO concurred with the nation by saying,

> "… Leadership styles especially the kind of leader who is friendly and good in assisting his or her subordinates usually makes innovate ideas easier at the working place."

3.2.3 Financial resources and employees' innovation

The aim of the third objective was to determine if financial resources have any influence on employees' innovation in an organization. From this objective, six relevant statements were made for the respondents to indicate their responses. The findings in Table 3 show that (M=3.59) agreed with the statement that employees create new ideas because of enough financial resources and (M=4.13) were undecided as to whether or not financial support in research matters in innovation. About (M= 4.13) indicated that financial support to implement idea encourages innovation. About (M= 3.63) indicated that financial support for brainstorming matters in innovation. This is good but it is low rate, which means that factors other than financial are needed for employees to brainstorm on innovation related matter. About (M= 4.09) were undecided on whether or not financial reward encourages innovation, and (M=4) supported the statement that financial resources enable staff to develop innovative behaviour.

The findings revealed further that the mean score of above 3.6 which is 61.8 per cent of the respondents agreed that having financial resources in an organization has some influence on employees' ability to be innovative. The findings are consistent with the findings in other studies (i.e., Ahmed et al.,

2018; Li and Yishuang, 2014), which revealed that financial resources (capital) is the factor that influence on employees' innovation in the organization. The study findings are also consistent with interactionist theory used in this study, which reveals that financial resources, rewards and technology are issues that need to be considered when the organization wants to be innovative. In this respect, the Chief Finance Officer had this to say,

> "… Some innovations involve genuine projects and very fortunately these projects need funds to facilitate." It is through this reason that financial resource is a factor that influences innovation of employees in the organization.

3.2.4 Technology and employees' innovation

The last objective of this study intended to determine the level in which technology relates to employees' innovation in an organization. Five questions were asked to respondents. The study findings on technology are presented in Table 3. The findings reveal that (M= 4.27) were undecided as to whether or not employees' awareness on ICT influences innovation. About (M= 3.97) agreed with the statement that employees generate new ideas because of technology available in organization. Also, about (M= 4.17) supported the statement that accessibility to varied technology influences innovative behaviour and(M= 4.12 indicated that adoptability of technological change influences innovative behaviour. Lastly, (M= 4.06)) supported the statement innovation is high because of good and genuine technology available. The rates in each variable show that technology significantly influences innovation on telecommunication companies such as Tigo. Therefore, companies must make sure that employees are aware of the ICT issues for them to be greatly innovative.

The findings from Table 3 indicate that the mean score for all the statements on technology was above 3.9, indicating that the respondents strongly agreed that technology positively influences employees' innovation in an organization. These findings are consistent with the findings in a study by Smith (2008) who revealed that technology is a very crucial factor that influences organization's ability to manage innovation. The theory of creativity as used in this study

also helps to support this factor pointing out that technology is important in improving innovation in an organization.

3.3 Inferential statistics

To supplement the descriptive findings in the foregoing sections, the study performed multiple regression analysis to test the hypotheses. However, before the regression analysis it was deemed necessary to check multicollinearity and model of fitness. These analyses are explained as follows.

3.3.1 Multicollinearity test

Multicollinearity is tested to check the correlation between independent variables (Mitchell and Jolley, 2010). A high correlation between variables suggest the presence of multicollinearity. Multicollinearity in a regression analysis refers to how strongly interrelated the independent variables in a model are. According to Bordens and Abbott (2011), if two variables are highly correlated, they may be measuring the same thing. To test multicollinearity, the Variable Inflation Factor (VIF) was used.

Table 4: Collinearity Statistics

Variables	Personal Competence	Leadership styles	Financial Resources	Technology
Tolerance	.716	.801	.737	.700
VIF	1.396	1.248	1.357	1.429

Source: Author computation (2021)

The findings from Table 4 indicate that VIF measured the problem of multicollinearity at 1.396, 1.248, 1.357 and 1.429 for personal competence, leadership styles, financial resources and technology respectively. The values signify that the signalled multicollinearity in the correlations analysis of these four independent variables was too low to have any influence on employees' innovation. Therefore, the VIF values fall within tolerable level since they are below 5 (Salmerón et al., 2020). On the other hand, tolerance values are all above the range of 0.10 as the value should not fall below 0.10 (Salmerón et al., 2020) hence there is no problem of multicollinearity.

3.3.2 Model fitness test

Table 5 shows the results on the test of model fitness in this study. The test of model fitness comprised the F-test, which tested whether or not R^2 is significantly different from zero. The model explained 29 percent variation of employees' innovation as explained by the four predictors, namely, Technology, Leadership styles, Financial Resources, Personal Competence.

Table 5: Model Fitness Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	P-value
1	.159[a]	.253	.29	.559	4.671	.008***

a. Predictors: (Constant), Technology, Leadership styles, Financial Resources, Personal Competence

b. Dependent Variable: Employees Innovation ***p<0.01

Source: Author computation (2021)

The model of fitness of the four independent variables proved to be good at 5 per cent significance level. The results were statistically significant taking into account the sample size and the number of independent variables (Hair et. al., 2010). The F value of 4.671 for the model verifies that the model is fit at the 5 per cent significance level. The standard error of estimates points out how much the regression coefficient will vary between samples of the same taken from the same population (Hair et. al., 2010). The small value of the standard error implies that the results are reliable and valid.

3.3.3 Multiple regression results

Multiple regression is used when the researcher wants to predict the value of a variable based on the value of two or more other variables (Mitchell and Jolley 2010). It is a kind of technique, which is also used to test hypotheses of the study (Zikmund & Babin, 2007).

Table 6: Variables Coefficients

Model B		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		Std. Error	Beta			
1	(Constant)	4.072	.700		5.819	.000
	Personal Competence	.175	.148	.162	1.180	.15
	Leadership styles	-.125	.150	-.108	-.832	.002
	Financial Resources	.074	.109	.092	-.679	.18
	Technology	.035	.145	.033	.239	.003

a. Dependent Variable: Employees Innovation

Source: Author computation (2021)

The study hypothesized that Personal Competence (H1), Leadership Style (H2), Financial Resources (H3), and Technology (H4) positively influence employees' innovation. In statistics, particularly in this study, the independent variable is a good predictor of the dependent variable if its significance level is below 0.05 (5%).

As shown in Table 6, the results of regression analysis revealed that Leadership styles, which has (β= -.108; p= .002) has a significance negative influence on the number of creative ideas and the projects submitted among employees. This implies that, on average, a one unit increase in leadership style will improve employee's innovation by reducing the rate of 10 percent. Thus, leadership styles can be used to advance employees' innovation. Greg and Anne (1996) carried out a study on Employees' Creativity: Personal and Contextual Factors at Work. The study by Greg and Anne (ibid.) reached similar conclusions as the ones reached in this study in that leadership styles, especially controlling and supportive supervision styles have a positive influence on employee's creative performance. In contrast, Al Khajeh (2018) concluded that leadership styles sometimes hinder employee's creativity and innovation within an organization.

Furthermore, Technology was found to have a positive and significance influence (β= .033; p= .003) on employees' innovation. The finding implies that on average, one unit increase in technology expands employees' innovation by increasing the rate of 33 per cent. Thus, for employees to

generate a greater number of new creative ideas and projects the company has to extremely consider the use of technology. Mhagama (2015) studied on factors influencing employees' performance in higher learning institutions in Tanzania and revealed that technology is among the working environmental factors that help employees gain more knowledge and information to make them innovative in organizations.

On the other hand, Personal competence (β= .162; p= .15) has positive but insignificant influence on employees' innovation. This means that Personal competence is not a good influencing factor in making employees innovative in the Telecommunication Companies in this study. However, Nijhof et al (2005) on the other hand found that personal knowledge and competence are factors that influence knowledge creation and innovation in an organization.

Financial resource (β= .092; p= .18) also has positive but insignificant influence on employees' innovation implying that it is not a good influencing factor in this study in making employees innovative in the Telecommunication Companies. However, Li and Yishuang (2014) on the other hand revealed that financial resources is a factor that influences employees' innovation in an organization.

4. 0 Conclusion and Recommendations

The study findings revealed that employees' innovation in a telecommunication industry is influenced by technology and leadership style. This implies that when the company adopts genuine technologies to implement projects relating to products then more projects will be introduced in the company and more ideas will be generated and turned in to innovation by employees. Also, the findings imply that if the management impart to the employees the spirit that engender independent creative ideas and innovative behaviour then employee innovation is likely to improve in an organisation.

Based on the study findings it is recommended that in designing the company strategy, telecommunication companies should consider enabling employees to be highly innovative by considering factors such as leadership styles and technology infrastructure. Moreover, in order to maximize effectiveness and performance of the company, managers of telecommunication companies

must consider competence of a person and prepare enough financial resource when planning for growth in the market. In addition, due to the fact that technology is growing fast in this current world, technology must be taken first so as to win the market of telecommunication.

It is also recommended that leadership styles and technology should be greatly used in appraising employees' innovativeness during the year. These factors should be used as the criteria of assessing innovation effectiveness of employees in the organization. Furthermore, further studies on employees' innovativeness in Telecommunication Company should be conducted to assess employees' performance and operation through innovative ideas. Studies may also be conducted in other telecommunication companies in Tanzania to reveal the situation of employees profiles in different telecommunication companies in terms of innovation. Finally, policy makers in Tanzania specifically the Tanzania Communication Regulatory Authority and the Parliament of Tanzania should formulate relevant policies, laws and regulations that are environmentally friendly for smooth innovation and creativity.

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