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STRATEGIC INNOVATION, A CONTEMPORARY MANAGEMENT PRACTICE ON PERFORMANCE OF TELECOMMUNICATION COMPANIES IN RWANDA

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Abstract: *The main objective of this study was designed to examine the influence of strategic innovation on the performance of telecommunication companies in Rwanda and to assess the moderating influence of legal and regulatory framework on the performance of Telecommunication industry in Rwanda. This study applied descriptive survey design and utilized both qualitative and quantitative data. The study population included the 133 Top and middle level, managers of mobile phone operator companies in Rwanda which comprised of MTN and Airtel company Headquarter and different branches within Kigali City from which a sample size of 100 respondents were calculated using the slovens formula which is commonly used for calculating sample size in research. Hence the distribution of questionnaires and interview was subjected to the top and middle level management teams of both MTN and Airtel as an efficient mechanism for collecting data that helped the researcher to arrive at reliable findings. The correlation results revealed that Strategic innovation positively correlates with Performance of Telecommunication industry ($r = 0.868^{**}$, $\rho<.05$). As revealed, Legal & regulatory framework ($r = 0.905^{**}$, $\rho<.05$) was positively associated with Performance of Telecommunication industry. The research managerial recommendations emphasized the need for telecom managers to build a strong bottom-up component in the strategic innovation structures to ensure that views, ideas and opinions of people across all levels of the organization are heard and that they are part of the plan and part of the process. Areas for further research should include other sectors of the economy such as; public transport, airlines and learning institutions in order to be studied on a much broader perspective.*

Keywords: *Strategic Innovation, Contemporary Management Practice, Performance of Telecommunication Industry in Rwanda*

Introduction

Survival of a company in the telecommunications industry depends of the contemporary tactics, techniques and strategies they apply in order to position themselves and differentiation from their rivals. According to Odunlami & Ogunsiji, (2011), postulated that in spite of the numerous management strategies and techniques available to many organizations, it is important to note that many telecommunication companies have not yet appreciated how to effectively and efficiently utilize these strategies and techniques in attempting to enhance their organizational performance. Firms in the telecommunication industry in Rwanda operate in an increasingly competitive, highly regulated and dynamic market and therefore they have to formulate strong strategic tools to ensure their survival (Odunlami & Ogunsiji , 2011). Wambua & Mulyungi (2019) conducted a study on the strategic quality management practices on organizational performance of telecommunications companies in Rwanda. The study concluded that, the commitment of top management, quality management

and customer focus plus ISO certification practices had been adopted in the MTN telecommunication company (Wambua & Mulyungi, 2019). It can be urged that, creating an effective management strategy in telecommunication services is vital however, all telecommunication companies provide nearly same products and services, which are easy to imitate. On the other hand, managers of MTN and Airtel in Rwanda used different premium models to reach out and gain new customers on in the telecommunication's market (Kwizera et al., 2018).

Namusonge et al., (2016) asserted that, innovation is a fundamental tool for entrepreneurs and the means through which entrepreneurs exploit change as a best opportunity for different businesses or other services. They propounded that, innovativeness is the most significant tendency of a growing organization to engage in and support new idea generation, experimentation and creative processes which may result into new products or services. Zhou & Wu (2010), stressed that innovation is very critical to enable firms to adapt to turbulent environments and achieve a sustainable competitive advantage. They further noted that whereas firms need a continuous innovation process to respond to the ever-fast changing environment conditions, the goal of sustainability requires new ways of doing business.

Qiuhong & Tiorini, (2009) state that, establishment of Strategic innovation practices entail the formulation of a workable system design, planning operational and resource implications of the system. In their findings, they noted that; there are other variables that specifically contribute to the performance of businesses (Qiuhong & Tiorini , 2009). Kithamba (2014) conducted a study on competitive business strategies adopted by mobile service providers in Kenya. He found out that the telecom companies employed cost leadership, price leadership and outsourcing strategies (Kithamba, 2014). There is still a remarkable scarcity of scientific knowledge that describes a more detailed representation of major roles of strategic innovation as the most imperative contemporary management practice and how it influences organizational performance. Although telecommunication companies in Rwanda have similar products and services, they all differ from one another based on the customer subscriber base and their visions and innovations differ significantly. The continued drop in profitability, sales volume shrinkage and loss of market share are part of the problems that saw the transfer of all shares of Millicom International Cellular Company Tigo Rwanda acquired by (BhartiAirtel, 2016). It is obvious that there is a growing need for researches giving understanding on the role of strategic innovation as a core management practice on the performance of the telecommunication companies in Rwanda. One can argue that the need for such information will become more important as the competition is becoming fiercer than before, due to many new mushrooming telecommunication companies in the country. Consequently, a better understanding of the influence of strategic innovation as a vital management practice on the performance of telecommunication companies especially in a Rwandan context is now indispensable. This study therefore, seeks to fill that gap by establishing the strategic practices applied by the telecommunication companies and how these management strategies influence performance of the entire telecommunication industry in Rwanda.

General Objective

1. To examine the influence of strategic innovation on the performance of Telecommunication industry in Rwanda.
2. To assess the moderating influence of legal and regulatory framework on the performance of Telecommunication industry in Rwanda

Literature Review

Strategic innovation Practice

The choice of the strategic innovation as an independent variable in this study draws its basis on the fact that; without innovation strategy, then the different parts of the telecommunication firms can easily shrink or end up pursuing different conflicting priorities even if there is a very clear business strategy. Innovation should cut across services innovation, process innovation and infrastructure innovation collectively. It is logical that this research investigates on the influence of strategic innovation on the performance of the telecommunication company to give re research a more logical and global touch. Performance of the telecommunication companies entirely dependent on whether or not strategic innovation is utilized in order to think through and allocate their resources and capabilities plus services to prevent their existing or new customers from defecting the rivals and ultimately achieve a sustainable competitive advantage. Capacity for innovation stems from an innovative system (Covey, 2015).

Jin, (2014), defines strategic innovation as a future-focused development framework that identifies breakthrough growth opportunities, accelerates business decisions and creates near-term, measurable impact within context of a large term vision for sustainable competitive advantage. Strategic innovation is one of the fundamental instruments of growth strategies to enter new markets, to increase the existing market share and to provide the telecommunication company with a competitive edge (Nybakk. E & Jenssen I, 2012). Motivated by the increasing competition in global markets, companies have started to grasp the importance of strategic innovation, since swiftly changing technologies and severe global competition rapidly erode the value added of existing products and services. Thus, strategic innovations constitute an indispensable component of the corporate strategies for several reasons such as to apply more productive processes, to perform better in the market, to seek positive reputation in customers' perception and as a result of gain sustainable competitive advantage. Innovations provide firms a strategic orientation to overcome the problems they encounter while striving to achieve sustainable competitive advantage (Hitt., Ireland, Camp & Sexton, 2001). Innovation strategy as a crucial strategy, promotes the development and implementation of the new products and services. Covey, (2015), claims that the origin of creativity and innovation lies in a share vision and mission which are focused on the future. Furthermore, the vision and mission of creativity and innovation Organization are also customer and market oriented, focusing on solving customer problems among other things. Aswani.S, (2013), underlined that strategic innovations vary in complexity and can range from small changes to existing products, processes, or services to breakthrough products, and to processes or services that introduce first-time features or exceptional performance.

Legal and Regulatory Framework

All regulatory outcomes including unbundling policies and mandated access prices are the effect of political and administrative processes, which can interact with the investment decisions of firms. This is crucial for the econometric modeling of the investments and known in the econometric literature as endogeneity problem. Recently, empirical studies established a close link between political and institutional factors and the design and the effectiveness of regulations. For instance, Bauer, (2010), show that political and institutional factors explain a substantial part of the variation in subsidy levels between various EU countries, the degree of deregulation achieved in various OCECD countries in the mobile telecommunication industry and price deregulation in the U.S. mobile industry, respectively. These political and institutional factors include governments' attitudes towards market regulations, electoral system, political systems (presidential vs parliamentary), accountabilities and independence of the regulatory agencies. One indication of the benefit of

telecommunication investment is the strong correlation between telecommunication development and overall economic development (Bauer, 2010).

Kotakorpi, (2006), published evidence that shows that statistically, telecommunications investment causes growth in the financial sector hence GDP growth, due to the heavy revenue through taxes that the companies pay to the government. While the list of scholars, who seek to explain the regulatory policies, is much longer than the one cited here, the list of explanatory variables used typically includes the above variables. As also shown in the above-cited studies, one additional factor, which explains the regulatory policies, is the performance of the regulatory market itself.

Adegbie & Fankile, (2011), the more the citizen lack knowledge or education about taxation in the country, the greater the desire and opportunities for tax evasion, avoidance and non-compliance with relevant tax laws. In this respect, the country becomes more adversely affected due to absence of tax conscience by individuals, companies, and the failure of tax administration to recognize the importance of communication and dialogue between the citizens and tax-related matters (Adegbie, & Fankile , 2011). In the face resource efficiency in financing long-term development, developing countries like Rwanda resort to foreign capital such as, loans and grants as a primary means to achieve rapid economic growth. Consequently, this ends up accumulating huge external debts in relation to the Gross Domestic Product (GDP) and serious debt serving problems in terms of foreign exchange flow and as such, majority of the population ends up living in absolute poverty. To this effect, the government of Rwanda has expressed concern over these and has vowed to expand the tax revenue in order to meet its mandate and one greatest was industry that brings in revenue to the government is the telecommunication industry.

Organizational Performance

Chandler (2012), defined Organizational performance as the ability of an Organization to utilize its resources (e.g. knowledge, people and raw materials) to achieve Organizational goals in effective and efficient way. It is a set of financial and non-financial indicators, which offer information on the degree of achievement of objectives and results (Lebans & Euske, 2011). Performance is dynamic, requiring judgment and interpretation; performance may be illustrated by using a casual model that describes how current actions may affect future results.; performance may be understood differently depending on the person involved in the assessment of the Organizational performance (for example; performance can be understood differently from a person within the Organization compared to one form outside). To define the concept of performance is necessary to know its elements characteristic to each area of responsibility. To report an Organization's performance level, it is necessary to be able to qualify the results. Organizational performance comprises the actual output or results of an Organization as measured against its intended output. Organizational performance involves the recurring activities to establish organizational goals, monitor progress towards the goals and make adjustments to achieve those goals more effectively and efficiently. Organizational performance is an abstract concept and it is difficult for so many organizations to directly measure.

In general, the concept or Organizational performance based upon the idea that an Organization is the voluntary association of productive assets, including human, physical, and capital resources, for achieving a shared purpose. Those providing the assets will only commit them to Organization so long as they are satisfied with the value they receive in exchange, relative to alternative uses of the assets, (Lebans & Euske, 2011). Consequently, the essence of performance is the creation of value. So long as the value created by the use of the contributed assets is equal to or greater than the value expected by those contributing the assets, the assets will continue to be made available to the Organization and the Organization will continue to exist. Therefore,

value creation, as defined by the resource provider, is the essential overall performance criteria for any Organization. How that value is created is essence of most empirical research in management. Conversely, how that value is measured is the essence of this research (Carton, 2004). The telecommunication sector is emerging from a period of cost cutting and debt reduction. This is mainly because traditional fixed line carriers are losing market share in favor of mobile operators that are offering raising quantities of airtime in return for a flat monthly fee as well as advanced value-added services.

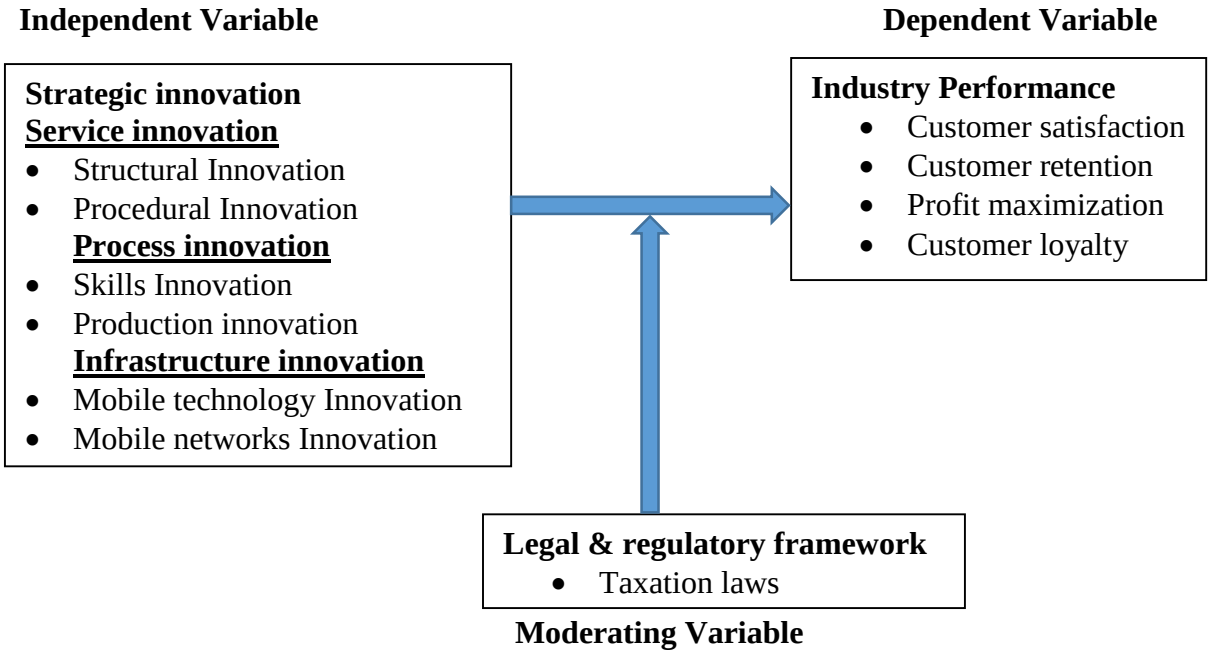

Figure 1: The Conceptual framework

Critique of Existing Literature Related to the Study

Many writers on Strategic management area confirm that lack of superior management strategies in any institute diminish performance at all stages of operation. Nonetheless, a few authors have been found trying to relate management strategies to determining whether results were as required. Inkonya, (2015), carried out a study about business strategies on the performance of telecommunication companies in Kenya but did not dig deep into the modern sophisticated practices like strategic innovation and strategic alliance. Gitonga, (2003), whose focus shifted to innovation processes and the perceived role of the Chief Executive Officer (CEO) in the telecommunication industry didn't give any clear knowledge about the influence of strategic management practices that are applied by the Chief Executive Officer in the execution of his management roles (Inkonya, 2015). Namusonge et al., (2016), conducted a study on the role of innovation on the performance of firms in the Nigeria Stock Exchange. They postulated that innovation is a specific entrepreneur's tool and the channel for change exploitation as an outstanding prospect in different business service. The research however did not provide empirical evidence on the answers for the potential challenges facing innovation specifically in the telecommunication industry. For that reason, the innovative as one of the firm's strategic management practices should always be solution-oriented and spearheaded towards creation of new potential advantages that lead to customer satisfaction

Another research conducted by Analoui & Karami, (2003), postulated that in spite of the numeral strategic management practices available to many organizations, it is important to note that many organizations have not yet appreciated how to effectively and efficiently utilize these strategies and techniques in attempting to

enhance their organizational performance. They however did not point out which particular management practices would most probably be best suited in the modern changing telecommunication industry(Analoui & Karami , 2003).

A study carried by Akingbade (2015), focused on the analysis of business strategies and performance in selected Nigeria telecommunication companies. Empirical studies on consumer oriented Strategic management essence utilized a diverse array of approaches based on consumer perception towards Strategic management practices adopted by companies in the telecommunication sector. The studies carried out were hinged on consumer perception of the organization during services delivery and few have focused on the performance of the telecommunication after the sales. The literature, only addresses specific aspects of telecommunications but does not provide an overall understanding of the dynamics of the strategic innovation practice and its influence on the general company performance. Motivated by the increasing competition in global markets, research has to shift focus to grasp the importance of strategic innovation, since suddenly changing technologies and severe global competition rapidly erode the value added of existing services in the telecommunication industry.

Research gap

Several studies given above have failed to establish the link between strategic innovation practice and performance in the telecommunication industry. Most of these studies have focused on either of the two being either an independent variable of another variable or a dependent variable of another. Namusonge, Muturi & Olaniran (2016), investigated the role of innovation on performance of firms on the Nigerian stock exchange. They found out that, innovation was still at infancy level as it had a negative relationship between the returns on assets and returns on equity (Namusonge, Muturi & Olaniran, 2016). The need to investigate the holistic role of the core strategic innovation practice remained still lacking.

Ali, (2013), did a study on Innovation strategy and business performance in telecommunication industry case study Somalia they found out that impact of innovation strategy on business performance was great and there was a positive correlation between innovation and performance. But this was just one aspect of the strategic management practices whose finding could not establish the overall influence of the most contemporary management practices which constitute an indispensable component of the corporate strategies which are responsive to the high-speed changing technological environment in the telecommunication industry (Ali, 2013).

Research study by Lumpkin, (2013), missed to assess the link between strategic innovation practice and performance of the telecommunication company because it did not provide comprehensive knowledge that calls for integration of current strategies that would help the telecommunication industry to define its business today and tomorrow, and determine the industries to compete because the Rwandan market, demands that the telecommunication company operators combine and integrate their strategy with other secondary strategies to become successful (Lumpkin, 2013). They cannot, as Porter says, only depend on one strategy. The researcher identified this area as deserving attention since none of the studies directly addressed the influence of strategic innovation practice on the performance of the telecommunication industry in Rwanda.

Methodology

This study applied descriptive survey design by collecting general information through administering questionnaire to the selected sample of respondents. The study comprised of 133 Top and middle level, managers of mobile phone operator companies in Rwanda, from which a sample size of 100 respondents was

calculated using the slovens formula which is commonly used for calculating sample size in research. Hence the distribution of questionnaires and interview was subjected to the top and middle level management teams of both MTN and Airtel as an efficient mechanism for collecting data that helped the researcher to arrive at reliable findings.

Analysis and Findings

Total Variance Explained for performance

Explained variance sometimes referred to as explained variation is used in research to measure the inconsistency and discrepancy between the said model and the actual data. Actually, it is part of the model's total variance that is explained by the different factors which are essentially present and are not caused by the error variance. The higher percentage of explained variance indicates a strong strength of association. In essence, the percentage of the variance Colum gives the ratio that is expressed as a percentage of the variance accounted for by each component to the total variance among all the variables. This therefore implies that better predictions were made (Rosenthal & Rosenthal, 2011).

Total Variance Explained for performance

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.302	61.456	61.456	4.302	61.456	61.456
2	.732	10.463	71.920			
3	.533	7.612	79.532			
4	.438	6.251	85.783			
5	.413	5.906	91.689			
6	.350	4.997	96.686			
7	.232	3.314	100.000			

Extraction Method: Principal Component Analysis.

Further, the high factor loading scores showed that all the items explained Performance of Telecommunication industry. The EFA extracted 1 factor with an Eigen value of 4.302 which is above the accepted value of 1 and cumulative extracted variance of 61.456 %. Thus, none of the seven items was dropped (Yong & Pearce, 2013).

Strategic Innovation Total Variance Explained

The higher percentage of explained variance indicated a strong strength of association. In essence, the percentage of the variance Colum gave the ratio that was expressed as a percentage of the variance accounted for by each component to the total variance among all the variables. This therefore implies that better predictions were made (Rosenthal & Rosenthal, 2011).

Strategic Innovation Total Variance Explained

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.478	63.976	63.976	4.478	63.976	63.976
2	0.708	10.108	74.084			
3	0.486	6.947	81.031			
4	0.407	5.808	86.838			
5	0.385	5.494	92.332			
6	0.324	4.629	96.961			

Extraction Method: Principal Component Analysis.

Further, the high factor loading scores showed that all the items explained strategic innovation. The EFA extracted 1 factor with an Eigen value of 4.478 which is above the accepted value of 1 and cumulative extracted variance of 63.976 % (Yong & Pearce, 2013). Thus, none of the seven items was dropped.

Legal & Regulatory Framework Total Variance Explained

It is part of the model's total variance that is explained by the different factors which are essentially present and are not caused by the error variance. The higher percentage of explained variance indicates a strong strength of association. In essence, the percentage of the variance Colum gives the ratio that is expressed as a percentage of the variance accounted for by each component to the total variance among all the variables. This therefore implies that better predictions were made (Rosenthal & Rosenthal, 2011).

Legal & Regulatory Framework Total Variance

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.089	61.781	61.781	3.089	61.781	61.781
2	.722	14.440	76.220			
3	.486	9.716	85.936			
4	.416	8.323	94.260			
5	.287	5.740	100.000			

Extraction Method: Principal Component Analysis.

Further, the high factor loading scores showed that all the items explained strategic planning. The EFA extracted 1 factor with an Eigen value of 3.089 which is above the accepted value of 1 and cumulative extracted variance of 61.781 % (Yong & Pearce, 2013). Thus, none of the seven items was dropped.

Correlation Results

Accordingly, bivariate correlation analyses were performed and Pearson correlation coefficients were generated to measure the strength of the link between the study variables (Field, 2000).

Correlation Results

		Performance	Strategic innovation	Legal and regulatory
Performance	Pearson Correlation	1		
	p-value			
Strategic innovation	Pearson Correlation	0.868**	1	
	p-value	.000		
Legal and regulatory	Pearson Correlation	0.905**	.779**	1
	p-value	.000	.000	

From the results on table 4.37 above, there is a positive and significant correlation between the independent variables and Performance of Telecommunication industry. Notably, strategic innovation positively correlates with Performance of Telecommunication industry (r =0.868**, ρ<.05). Moreover, the moderating variables showed a positive and significant correlation with Performance of Telecommunication industry. As revealed,

Legal & regulatory framework (r =0.905**, ρ<.05) is positively associated with Performance of Telecommunication industry. Based on the above results there is an indication of the linear relationship between all predictors on performance, hence the need to perform a more sophisticated model such as multiple regression model to show a cause-effect relationship.

Strategic innovation Linearity Test

In this section, linearity test was conducted to determine the relationship between the independent variable (strategic innovation) and the dependent variable (performance of telecommunication industry) and whether the dependent variable is linear or not. This was a requirement for further correlation and further regression analysis. The decision-making process in the linearity test would base on the value of significance deviation from linearity >0.05, then the relationship between strategic innovation and performance of the telecommunication industry are linearly dependent. And if the opposite is <.0.05 then the relationship between strategic innovation and performance of the telecommunication industry is not linear. This is displayed in table below:

Strategic innovation Linearity Test

		Performance
Performance	Pearson Correlation	1
	p-value	
Strategic innovation	Pearson Correlation	0.868**
	p-value	.000

Table above presents the results on linearity test for Strategic innovation. From the results the level of linear association was found to be 0.868 which was also positive and greater than the p value >0.05. This shows that, there is sufficient evidence to draw conclusion that there is a significant linear relationship between the two variables of strategic innovation and performance of the telecommunication industry because the linear association was positive and statistically significant.

Hypothesis Testing

H1: Strategic innovation and performance of telecommunication industry in Rwanda

Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.868	0.753	0.750	.50022192

From table above, the combined prediction of all the variables accounted for approximately 75.0% of the total variation in Performance of Telecommunication industry (R2 = .753 and Adjusted R2 = .750) as depicted in Table above. Thus, the model was fit to predict Performance of Telecommunication industry using Strategic Innovation.

Analysis of Variance

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	64.731	1	64.731	258.695	0.000[b]
	Residual	21.269	85	.250		
	Total	86.000	86			

The results in Table 4.50 indicates that the overall models were a good fit since the variables; Strategic Innovation, were found to have a value of F-statistic of 258.695 and the p-value was found to be 0.000 which is less than the critical value of 0.05.

Coefficients

Model		Coefficients		Standardized Coefficients	t-statistics	p-value
		Beta	Std. Error	Beta		
	(Constant)	4.672E-017	.054		0.000	1.000
	Strategic innovation	.868	.054	.868	16.084	0.000

H_{01} proposed that there is no significant effect of Strategic Innovation on Performance of Telecommunication industry. However, the results showed a positive and significant relationship between Strategic Innovation and Performance of Telecommunication industry (β = .868, ρ< .05). Thus, the hypothesis was rejected. This means that if the level of Strategic Innovation is enhanced, there is a high chance that he or she will set strategies that will increase the performance of telecommunication industry in Rwanda. These results support the opinions of (Zhou & Wu, 2010 and Mwania & Muganda 2011) who concluded that innovations have a significant contribution to performance. They state further that innovation is usually as a result of employees' creativity in a firm and that it should always be targeted at consumers to bring an added value. They summarize by stating that it is therefore very necessary to acknowledge that the most inventive part of innovation is based on people's skills, knowledge and experience. Organizations can benefit more if they develop, embrace and communicate an innovation orientation. Innovation oriented organizations have a better chance of succeeding financially.

H2: Strategic innovation*regulatory framework and performance of telecommunication industry in Rwanda

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
	.950[a]	.902	.898	.31913554	2.382

From table above, the combined prediction of all the variables accounted for approximately 90 % of the total variation in Performance of Telecommunication industry (R2 = 0.902 and Adjusted R2 = 0.898) as depicted in table above. Thus, the model was fit to predict Performance of Telecommunication industry using Strategic Innovation.

Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	77.547	3	25.849	253.800	.000[b]
	Residual	8.453	83	.102		
	Total	86.000	86			

The results in Table above indicates that the overall models were a good fit since the variables; Strategic Innovation, were found to have a value of F-statistic of 253.800 and the p-value was found to be 0.000 which is less than the critical value of 0.05.

Coefficients

Model	Coefficients		t	Sig.	Collinearity Statistics	
	B	Std. Error			Tolerance	VIF
(Constant)	.076	.040	1.903	.061		
Strategic Innovation	.425	.055	7.743	.000	.392	2.548
Regulatory framework	.563	.055	10.221	.000	.390	2.563
Strategic Innovation*Regulatory framework	.099	.027	3.637	.000	.990	1.010

H_{02} proposed that there is no significant effect of Strategic Innovation on Performance of Telecommunication industry. However, the results showed a positive and significant relationship between Strategic Innovation and Performance of Telecommunication industry (β = 0.425, $\rho <$ .05). Thus, the hypothesis was rejected. This means that if the level of Strategic Innovation is enhanced, there is a high chance that he or she will set strategies that will increase the performance of telecommunication industry in Rwanda. These results support the opinions of (Zhou & Wu, 2010); Mwania & Muganda (2011), who concluded that innovations have a significant contribution to performance. They state further that innovation is usually as a result of employees' creativity in a firm and that it should always be targeted at consumers to bring an added value. They summarize by stating that it is therefore very necessary to acknowledge that the most inventive part of innovation is based on people's skills, knowledge and experience. Organizations can benefit more if they develop, embrace and communicate an innovation orientation. Innovation oriented organizations have a better chance of succeeding financially.

Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
	.985[a]	.970	.967	.18170547	2.360

A multiple linear regression analysis was performed to regress control and independent variables with Performance of Telecommunication industry. The combined prediction of all the variables accounted for approximately 97 % of the total variation in Performance of Telecommunication industry (R2 = 0.970, Adjusted R2 = 0.967) as depicted in Table above. Thus, the model was fit to predict Performance of Telecommunication industry using Strategic Innovation and Legal and regulatory as an independent model as well as moderator.

Analysis of variance

Model		Sum of Squares	df	Mean Square	F-statistics	p-value
	Regression	83.458	9	9.273	280.859	0.000
	Residual	2.542	77	.033		
	Total	86.000	86			

The results in Table above indicates that the overall models were a good fit since the variables; Strategic Innovation, Legal and regulatory framework and their associated interaction terms as were found to have a

value of F-statistic of 280.859 and the p-value was found to be 0.000 which is less than the critical value of 0.05.

Coefficient Table

Model		Coefficients		t	Sig.	Collinearity Statistics	
		B	Std. Error			Tolerance	VIF
1	(Constant)	.006	.024	.261	.795		
	Strategic innovation	.223	.048	4.640	.000	.166	6.022
	Legal and regulatory framework	.214	.042	5.118	.000	.219	4.573
	Strategic innovation*Legal and regulatory framework	.094	.035	2.686	.008	.201	4.969

H_{05a} predicted that Legal & regulatory framework does not significantly moderate the relationship between Strategic Innovation and Performance of Telecommunication industry. The results indicated that Legal & regulatory framework positively and significantly moderate the link between Strategic Innovation and Performance of Telecommunication industry (β = 0.223, ρ< .05). Consequently, the hypothesis was rejected. Thus, firms with optimistic Legal & regulatory framework are likely to strengthen the Strategic Innovation influence on Performance of Telecommunication industries in Rwanda. These results support the opinions of (Zhou & Wu, 2010 and Mwania & Muganda 2011) who concluded that innovations have a significant contribution to performance. They state further that innovation is usually as a result of employees' creativity in a firm and that it should always be targeted at consumers to bring an added value.

Moderator Direct effect

The regression results show a positive and significant association between Legal and regulatory framework and Performance of Telecommunication industry (β = 0.214, ρ< .05). So, the hypothesis was not supported. This connoted that increased level of strategic innovation create value to the firm in the form of Performance of Telecommunication industries in Rwanda.

Hypothesis summary

No	Null Hypothesis	Decision criteria	Conclusion
1	**H_1:** There is no significant relationship between strategic innovation and performance of telecommunication industry in Rwanda	Reject the null hypothesis if p<0.05	The null was rejected since p-value was found to be < 0.05
2	**H_2:** There is no significant moderation effect of legal and regulatory framework on the relationship between strategic management practices and the performance of Telecommunication industry in Rwanda	Reject the null hypothesis if p<0.05	The null was rejected since p-value was found to be < 0.05

Conclusion

The study conclude that strategic innovation measurers had strong effect on the performance of telecommunication firms in Rwanda. The company is always looking for innovative ways to improve on the Service delivered to our customers, The company has a process of introducing new and cost effective ways of doing things that create new demands and new market space , The company is always investing in new and modern infrastructures to improve on the Service delivered to our customers, The firm is quick to adopt new Technological advancements in the market, The company always use internet and social media platforms to

attract potential innovative man power in the firm and A plan made by an organization to encourage advancements in either technology or service usually by investing in research and development activities. The results showed a positive and significant relationship between Strategic Innovation and Performance of Telecommunication industry (β = .868, ρ< .05). Thus, the hypothesis was rejected. This means that if the level of Strategic Innovation is enhanced, there is a high chance that the set strategies definitely will increase the performance of telecommunication industry in Rwanda.

The indicators for legal and regulatory framework include; taxation laws and investment regulations Regression results showed a positive and significant association between Legal and regulatory framework and Performance of Telecommunication industry (β = .235, ρ< .05). This connoted that increased level of strategic innovation create value to the firm in the form of Performance of Telecommunication industries in Rwanda. There are various regulations that can hinder successful management of the various business strategies especially with regards to industries that fall under government regulatory authorities such as the telecommunication industry. (Oglietti & Pontarollo, 2003), asserted that government licensing can often force significant changes in industry practices as well as strategic innovation approaches.

The study recommended that management decisions in the telecom industry should focus on creation of innovation-oriented business culture across the telecommunications industry to dramatically promote the development of new improvement ideas, products, services and make huge digital transformations. This should be best done through regularly innovative workshops and where new ideas regarding products and new services can be developed. The company should hire competent personnel with innovative mindset who want to bring change to the company and work on building teams of creative thinkers with diverse backgrounds and motivate them regularly towards new innovation and change. The companies benefit tremendously when the strategic innovation is taken into account for the efficient performance.

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