

## Innovation Culture and Performance of Veterinary Companies in Kenya: A Case Study of UEAL

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### ABSTRACT

*The study sought to determine the innovation culture, market innovation, and technological innovation culture on the performance of the veterinary companies in Kenya using UEAL as the study case. The anchor theory was Diffusion of Innovation Theory supported by Goal-Setting Theory and Institutional Theory. A descriptive research design was adopted. 121 respondents participated and a census was used in the study. The questionnaire was used in data collection, and they were piloted. The analysis was done using descriptive statistics and inferential statistics using spreadsheets and SPSS version 26.0. The study outcome indicated that the predictor variables market and technological innovation have a significant positive impact on the performance of the veterinary companies. The results indicated that there is a significant relationship between innovation culture (market and technological innovation) and performance of the veterinary companies;  $p < 0.05$  ( $P = 0.01$ ). thus, the values of predictor variables are statistically significant with  $p < .05$  which means an increase in the mean index of predictor variables should increase the performance of the veterinary companies. The model shows that market innovation was the predictor variable that highly affected the performance of the veterinary companies, followed by technological innovation. The study recommends that there should be more research on innovation culture and organizational performance using a case-by-case analysis of other sector players such as insurance firms, manufacturing firms, and blue-chip organizations to validate the findings of this study.*

**Keywords:** Market Innovation, Technological Innovation, Innovation Culture, Performance and Veterinary Companies in Kenya

## **INTRODUCTION**

The future of organizations is determined and sustained by an innovation process that is the introduction of much more improved products or introducing new better products in the market (Darawong, Dynamic capabilities of new product development teams in performing radical innovation projects, 2018). Innovation culture can be seen to be the successful introduction of specific, and different, products or services in the marketplace. According to Huesing and Endres (2018), the process of innovation entails an organization working on new creative knowledge in developing services or products that will sustain the organization's competitive advantage.

Organization innovation culture describes the work of innovation and invention that gives the direction for their implementation (Huesig & Endres, Exploring the digital innovation process the role of functionality for adoption of innovation management software by innovation managers. , 2018). However, the role of innovation in assisting corporations in meeting their mission as well as short and long-term objectives. According to Sarwar, Imran, Anjum, and Zahid (2020) innovation culture have a determination on organization creativity, and competitive advantage, because it defines the main factors that influence performance they include clients, staff, partners, and competition and how they interact with the organization. Organizations that engage in numerous types of innovation engage in both product and process innovation as well as technological innovation. Product innovation aims at satisfying the customer's need while process innovation aims at increasing an organization's efficiency in operations (Sarwar, Imran, Anjum, & Zahid, 2020). According to Aboramadan, Albashiti, Alharazin, and Zaidoune (2019) market and technological innovation are key to determining the success of an organization.

According to National Trends and International Comparison Survey (2015) shows that worldwide innovations expenditure is estimated at \$2.5 billion by 2013. And the US is ranked as the largest investment in innovation, and this has risen sharply in other parts of the world as well, Japanese spending on innovation has surged from 2.9% of the gross domestic product in 2010 to 3.6% in 2012. While India has doubled spending

on innovation to \$8.7 billion annually. South Korea has boosted innovation by an average of ten percent by 2012. In South American, Brazil has tripled innovation expenditure since 2008 that is estimated at \$24.4 billion, while in Europe countries like Finland have boosted innovation spending to 3.9 of the GDP. In Africa, South Africa Innovation Survey (2014) showed that 34.6 % of organizations reported no innovation activities at all, while in East Africa Mpesa has been a success in both Kenya and Tanzania representing a mobile money penetration rate of over 31% (Wanja, 2018). While there are many theories and articles on innovation culture, some organizations experience dwindling growth as an outcome of ignoring or failing to develop and implement an innovation strategy that suits customer demand and new market trends. The term culture infers something having potential and a huge effect on the organization (Darawong, 2018).

### **Organization Performance**

Organizational performance can be measured in different ways and the unit of measurement used should be taken in aggregation. Items that are used for measurement include revenue from operations, operating income, total unit sales, profitability, debt repayment capacity, liquidity, solvency, and financial efficiency of the institution. Internal and external forces affect organizational performance. The external forces that influence performance include competition, technology, and the working environment while the internal forces are ability, motivation levels, skills, and knowledge (Liu, Ma, & Huang, 2015). Organizational performance is described as the degree of attainment of job mission as a measurement in terms of job findings, customer link, quality service, and intangible findings (Saeed, Jiao, Zahid, Tabassum, & Nauman, 2020).

While Borman and Schmit (2012) define an organization's performance as a multidimensional paradigm whose analysis is of several factors. This study adopted the definition by Aguinis and Kraiger (2016) that describes organization performance concerning organization mission, job findings, customer link, quality service, and intangible findings that were operationalized by measuring revenue growth, customer satisfaction, employee satisfaction, and organization expansion. Employees'

ability to establish the effectiveness of performance is crucial for survival, and employees who are motivated and possess the right knowledge and sufficient skills will remain relevant hence increased out-put (Hasani & O'Reilly, 2020).

Hasani and O'Reilly (2020) categorized performance into business performance, financial performance, and organizational effectiveness. The financial performance focuses on findings based on new product development, market share, and innovation. Performance measurement of overall organization effectiveness reflects a broader conceptualization that provides for the achievement of organizational goals, organization reputation, organization survival, a perceived overall performance about competitors, and seen as an overall performance (Liu, Ma, & Huang, 2015).

### **Technological Innovation**

The accomplishment of technological innovation is not about the technological capabilities of the organization but other crucial abilities in the organization, resource allocation, technological innovation culture, manufacturing, and marketing (Zhu, Wang, & Wang, A comparative study of the effects of different factors on firm technological innovation performance in different high-tech organizations. , 2018). Technological innovation in organizations is adopted to assist the organization to meet clients' demands and generate more revenues for the firm. Performance in the organization is determined by the efficiency of the technology used in the production and operations process that why an organization that needs to remain relevant in the market must invest in technology now and again. When organizations adopt a new system such as an enterprise resource planning system, the process of production is enhanced. Such systems improve the firm's activities through the automation of services (Milewski, Fernandes, & Mount, 2017).

There are four types of abilities for the sustenance of technological innovation namely manufacturing capability that is superior, development of new products, and flexibility. An investigation into whether or not all new products are successful while others have been unsuccessful has been credited to judicious induction practices. These probes have isolated an array of success drivers such as developing various products with different persuasive values, developing products with customer

specifications, provision of adequate resources, and dependable employees, cross-functional, and efficient (Taleget, 2018).

### **Market Innovation**

Marketing innovation is achieved when an organization implements better market strategies to acquire and reach a broader market. Marketing innovation is also incremental and focuses on improvements in product placement, pricing or promotion, packaging, and design (Nadoo, 2018). Market innovation is linked to the organization adopting new marketing strategies and approaches that include changes in product pricing, promotional strategy, product repackaging, product redesign, and placement. The justification for market innovation is to help the firm to grow in market share, increase product sales, and concurring new markets. The peculiar difference between marketing innovation and other innovation strategies used in an organization is influenced by when a company decides to use a new strategy in market innovation that the firm has never used before (Nguyen & Harrison, 2018). A range of criteria exists including objectives criterion and segmenting based on interpretations of the lifestyle of business and consumer buying trends as well as behavior. The main objective of firms adopting market innovation is the realization of basic entrepreneurial values such as growth and revenue. The aim of marketing innovation to organization customer value and performance has been acknowledged in the literature (Varadarajan, 2017).

### **Veterinary companies in East Africa**

Veterinary products and services are required to be administered by veterinarians or paraprofessional trained veterinary officers as according to the Veterinary Board of East Africa. The board regulates the delivery of livestock health products as well as services and also supervise and check if unregistered products are being sold in the market, and arrest the unlicensed person or people selling or distributing livestock products. In Africa countries like Ethiopia and Somalia don't have a veterinary board and this has been the major challenge that faces the Veterinary Board of East Africa, especially for the countries that surround them such as Kenya. The Veterinary Board of East Africa and the government of Kenya work hand in hand to provide subsidized

vaccines to mitigate trans-boundary livestock diseases. Innovation culture in UEAL can be seen to be the successful introduction of specific, and different, products or services in the marketplace. At UEAL the process of innovation entails an organization working on new creative knowledge in developing services or products that will sustain the organization's competitive advantage. UEAL engage in numerous types of innovation in both product and process innovation as well as technological innovation.

### **Profile of UEAL**

UEAL was established in the year 2000, a Kenyan firm that supplies farmers with agrochemicals, planting seeds, veterinary animal health, and hygiene product services. The organization operates in three countries in Africa that is Kenya, Tanzania, Zambia, and Uganda. The organization is driven by the vision to be the leader in the provision of the most innovative agro-science technology to farmers. To the organization, the customer is of paramount importance, and that's the reason the organization offers the best quality products to farmers and also provide farmers with various training that include field days' dairy seminars, farm visit professional training, poultry seminars, among others.

### **Statement of the problem**

A subjective measure of how well an institution can use assets from its business model to generate revenues is referred to as organizational performance and it is a general measure of overall financial capacity over a given period. Organizational innovation culture can be proven by the number of new products released in the market every time, improvement of existing products, improved marketing strategies, and also improved management tactics employed. The motive behind these numerous innovation activities is to improve organization performance in various aspects like increase of profits, increase market share, and reducing production cost. Organizational innovation culture is evident in nearly all organizations and veterinary organizations are not an exception. Veterinary service providers are under considerable pressure to deliver positive results to investors and shareholders and

organization innovation culture is viewed as a strategic function working to improve organization profitability.

Economic Survey (2019) shows that livestock economy employs 50 percent of the entire workforce in the agriculture sector, this is a justification of higher demand for veterinary products. According to the Agrochemicals Association of Kenya (AKK) Report (2019), two thousand registered organizations supply and distribute veterinary services and products. This means there is stiff competition among several pharmaceutical organizations that compete for the same customer. An organization such as UEAL operates in a dynamic and tumultuous business environment, that is also constantly changing, sometimes at a mind-boggling pace. That is also connected with changing customer behavior, globalization, investor demands, deregulation of markets and increased competition are some of the market characteristics. There is a need for UEAL to move beyond solving the existing problems and improve changing conditions that it faces that the changing business environment continuously brings about. In 2020 as a result of Covid-19 several multinationals and local organizations have shut down due to poor financial performance, which is also associated with stiff competition among the organizations. However, the environment poses challenges that cannot be easily resolved, due to their complexities. This has made organizations such as UEAL develop and innovative approaches to deal with changing needs.

This research focused on the relationship between innovation culture and performance of the veterinary companies in Kenya using UEAL as the study case study. Pointing to a contextual and conceptual difference hence a gap in the study is identified. However, none of the previous studies have specifically focused on UEAL. Therefore, the purpose of the study is to fill the knowledge gap by examining the innovation culture, and performance of the veterinary companies in Kenya concerning UEAL. And the study was answering the following questions; what is the relationship between innovation culture and performance of UEAL?

### **Specific Objectives**

- i. To establish the relationship between technological innovation and the performance of the veterinary companies at UEAL

- ii. To establish the relationship between market innovation and performance of the veterinary companies at UEAL

## **THEORETICAL LITERATURE REVIEW**

### **Diffusion of Innovation Theory**

This Theory is adopted as the study's leading and anchor theory. The theory was invented by Everett Rogers in 1955; The theorist is a proponent of spreading of innovation, concepts of the invention as well as technology through culture. According to Diffusion Theory, humans have qualities that make them adopt or reject innovations. Diffusion Theory indicates that there are five stages of adopting an innovation. The beginning stage is when an individual knows of innovation but has no knowledge about it. The second phase is persuasion where an individual is interested in establishing knowledge about the innovation, while the third stage is decision-making where an individual compares the merits and demerits of innovation and makes a decision to adopt it or not. After the decision is made, the execution, in which the person adopts and uses it. Confirmation is the final phase. Here the person makes a final decision on whether to continue using the innovation based on experience (Dearing & Cox, 2018).

These stages apply to varying extent to individuals, groups, and in addition to other persons. The study adopted this theory because the simplicity of use is always a major factor that affects the adoption of innovations, which it supports. Human beings naturally are hesitant to adopt innovation no matter how good and effective it can be. The important aspect of innovation is that when a person appreciates and realizes its goodness one finds it difficult to work without it and this is the most significant characteristic of diffusion theory (Van der Veer Martens, 2006). The study adopted this theory because is concerned with the extent to which business innovations are being developed, it explains that some people adopt an innovation instantly while others take time and will continue to use old technology. The rate of adoption is dependent on various issues. In most organizations, people tend to give an innovation poor appraisal while others are likely to reject it. The theory supports study variables

(technological innovation, and market innovations) which is why the study adopted this theory.

### **Resource-based Theory**

This theory was developed in 1930 by scholar Wernerfelt. B. Resource-based method has been applied from early 1930, and in 1990 the theory was reengineered by Jay Barney on his study on organization resources and sustainable advantage. According to the theory how comes to some organizations perform better than others in the same sector, it associates this to available internal resources that are used in the innovation process to sustain competitive advantage. For an organization to achieve the position of its ability to create above-normal profits, the resources must be inimitable, valuable, non-substitutable, and non-transferable (Bipp & Kleingeld, 2011).

The theory focuses on how superior performance, innovation process, competitive advantage are strategic choices for organizational leadership. Firms and institutions combine various resources available to the organization to achieve an innovation culture. Each organization poses different capabilities and resources, and the way a company uses its resources will lead to superior innovations inventions, and excellent organizational performance. Resources of an organization constitute tangible assets, external assets, and intangible assets (Deschamps & Mattijs, 2017). The theory has been criticized by several scholars such as Barney (1991), Priem and Butler (2001), and Sanchez (2008). Barney (1991) indicated that the theory does not provide an adequate conceptual basis for identifying valuable resources; that constitutes the greatest stumbling block in the development of theory as a scientific theory. While Priem and Butler (2001) and Sanchez (2008) in their respective criticism they describe the theory to be a profound logical problem, that the theory only suggests what additional characteristics that the organization resources must have if they are to generate sustained competitive advantage.

According to Sanchez (2008) the failure of the theory to provide a conceptual basis as meet a basic first basis of building a scientific theory about resources. The study adopted this theory because it shows the relationship between organizational performance, innovation culture, and organizational resources that are required to

implement, technological innovation, and market innovations that is why the study adopted this theory.

### Research Hypothesis

**Ho1:** There is no significant relationship between technological innovation and the performance of the veterinary companies at UEAL.

**Ho2:** There is no significant relationship between market innovation and the performance of the veterinary companies at UEAL.

### Conceptual Model

The research was guided by a conceptual structure that presents and defines the viewpoints that attempt to explain the research problem under the study.

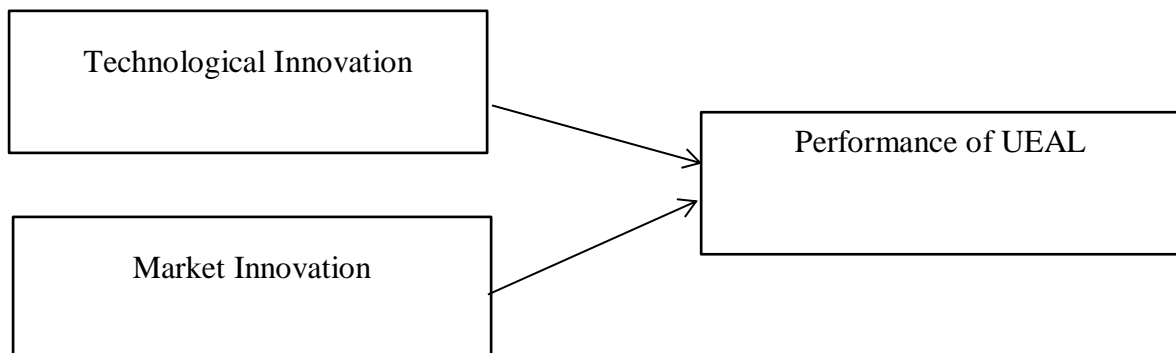
#### Independent Variables

Technological Innovation

Market Innovation

#### Dependent Variable

Performance of UEAL



**Figure 1: Conceptual model**

## METHODOLOGY

### Research Design

The study adopted a descriptive research design that is described by Cooper and Schindler (2018) as a way of answering how and where the event transpired. The researcher adopted a descriptive research design in obtaining the most relevant, recent, and in-depth information on the study area. According to Kothari and Garg (2015), research design focuses on transforming research questions or hypotheses into the research project. The unit of analysis was the staff at UEAL.

### Target Population

The study targeted 121 (senior managers, middle-level managers, and non-management) as the study target population. Sampling involves selecting individual units from a larger population (Thornhill, Lewis, & Saunders, 2019). In this context, the researcher used and adopted the census for the study due to a limited number of employees. Census is a way of gathering information from every member of the group (Easterby-Smith, Thorpe, Jackson, & Jaspersen, 2018). This method is suitable as it provides an opportunity for all respondents to participate in the study.

### Data Collection Instruments

This research study used questionnaires. The questionnaire contained closed-ended questions using scaled questions. The questionnaire in the study is preferred based on other researchers who have used it in the same subject area. This research study used questionnaires as the main data collection tool. A pilot study will conduct to validate the study questionnaire. The supervisor will play a very important part in this section.

### Data Analysis and Presentation

The study generated quantitative data. Model analysis was originally developed by Kothari and Garg (2015). The qualitative data were analyzed using simple statistics and SPSS. Analysis of data was done using descriptive statistics. Specifically, means, averages, and percentages were used in the study. Inferential statistics (correlation and regression analysis) was applied in the study to show how variables are related, study used the Pearson correlation matrix which was used. Pearson correlation helped in predicting and describing the association between the variables in terms of magnitude and direction. The correlation test was fixed at the 5% level of significance using a 2-tailed test. Therefore, the significance critical value of 0.025 is deemed insignificant and vice versa within the association.

The analysis of variance (ANOVA) was tested to disclose the overall significance of the model. A critical p-value of 0.05 was used to determine whether the overall model was significant or not. A regression model was adopted to show the significance and influence of study variables. To assessment the model of the composite index of the performance of veterinary companies 'extent,  $\alpha$  is a regression constant,  $\beta_{1-3}$  is the

regression coefficient. EE represents the composite score of performance and is the independent variable.

JRA represents the other variables' composite index. The composite score of technological innovation, and market innovation  $\epsilon_1$  is the random error term that explains the practicability of the performance of the veterinary companies that cannot be explained by the linear effect of the predictor variables.

The overall multiple linear regression models are as laid below.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + e$$

Y = Performance of Veterinary Companies

( $\beta_i$ ;  $i=1, 2, 3, 4$ ) = various coefficients for the independent variables

$X_i$  for;

$X_1$  = Technological innovation

$X_2$  = Market innovation

## **FINDINGS**

The sample population of the study was 121, to which the researcher distributed the questionnaire as indicated in Table 4 and the results obtained by the study findings show that a total of 115 respondents filled the questionnaire representing a 95% response rate while 25 or 18% of the respondents failed to return or fill the questionnaire. The research study response rate was excellent.

### **The relationship between technological innovation and the performance of the veterinary companies**

**TABLE 1: MODEL SUMMARY FOR TECHNOLOGICAL INNOVATION**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.557 <sup>a</sup>	0.310	0.304	0.65296

a. Predictors: (Constant), Technological Innovation

The values of  $F = 50.702$  show that technological innovation statistically and significantly affects the performance of the veterinary companies which means the regression model is a good fit for the data and that technological innovation significantly influences the performance of the veterinary companies in Kenya. The level of significance is 0.000 which is less than 0.05 hence the regression model

significantly predicts the dependent variable. The results were enumerated as seen in Table 2.

**TABLE 2: ANOVA<sup>A</sup> RESULTS FOR TECHNOLOGICAL INNOVATION**

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	21.617	1	21.617	50.702	.000 <sup>b</sup>
1 Residual	48.179	113	0.371		
Total	69.796	114			

a. Dependent Variable: Performance of the veterinary companies

b. Predictors: (Constant), Technological Innovation

The study outcome indicated that the addition of technological innovation to the performance of the veterinary companies has a significant positive impact on performance. The results indicate that there is a significant relationship between technological innovation and the performance of the veterinary companies;  $p < 0.05$  ( $P = 0.01$ ). Thus, the values of product innovation are statistically significant ( $t = 7.121, p < .05$ ) which means an increase in the mean index of technological innovation should increase the performance of the veterinary companies by a positive unit mean index value of 0.688 (68.8 percent). The regression model explaining the results enumerated in Table 3 is given by: performance of the veterinary companies = 1.620 + 0.586 (technological innovation). The model shows that technological innovation positively influences the performance of veterinary companies.

**TABLE 3: REGRESSION COEFFICIENTS<sup>A</sup> FOR TECHNOLOGICAL INNOVATION**

Model	Unstandardized Coefficients		Standardized Coefficient	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error				Lower Bound	Upper Bound
(Constant)	1.620	0.329		4.926	0.000	0.969	2.727

Technological Innovation	0.586	0.082	0.557	7.121	0.000	0.423	0.749
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a. Dependent Variable: Technological Innovation

Performance of the veterinary companies = 1.620 + 0.586 (Technology Innovation)

### The relationship between market innovation and performance of the veterinary companies

The study sought to investigate the relationship between market innovation and the performance of veterinary companies. Regression analysis was done with the performance of the veterinary companies as the dependent variable and market innovation as the predictor factor. The regression analysis revealed a relationship  $R = 0.575$  which showed a strong positive correlation and revealed that market innovation and performance of the veterinary companies are fundamentally related, and  $R^2 = 0.331$  which meant that 33.1% of the variation in organizational performance can be explained by a unit change in market innovation. The results were enumerated as seen in Table 4.

**TABLE 4: MODEL SUMMARY FOR MARKET INNOVATION**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.575 <sup>a</sup>	.331	.325	.64274

a. Predictors: (Constant), Market Innovation

The values of  $F = 55.950$  show that market innovation statistically and significantly affects the performance of the veterinary companies which means the regression model is a good fit for the data and that market innovation significantly influences the performance of the veterinary companies in Kenya. The level of significance is 0.000 which is less than 0.05 hence the regression model significantly predicts the dependent variable. The results were enumerated as seen in Table 5.

**TABLE 5: ANOVA<sup>A</sup> RESULTS FOR MARKET INNOVATION**

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	23.114	1	23.114	55.950	0.000 <sup>b</sup>
1 Residual	46.682	113	0.431		
Total	69.796	114			

a. Dependent Variable: performance of the veterinary companies

b. Predictors: (Constant), Market Innovation

The study outcome indicated that the addition of market innovation to the performance of the veterinary companies has a significant positive impact on the performance of the veterinary companies. The results indicate that there is a significant relationship between market innovation and the performance of the veterinary companies;  $p < 0.05$  ( $P = 0.01$ ). Thus, the values of product innovation are statistically significant ( $t = 7.480$ ,  $p < .05$ ) which means an increase in the mean index of market innovation should increase performance by a positive unit mean index value of .644 (64.4%). The regression model explaining the results enumerated in Table 6 is given by: performance of the veterinary companies =  $1.379 + 0.644$  (Market innovation). The model shows that Market innovation positively affects the performance of veterinary companies.

**TABLE 6: REGRESSION COEFFICIENTS<sup>A</sup> FOR MARKET INNOVATION**

Model	Unstandardized		Standardized	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error				Beta	Lower Bound
(Constant)	1.379	.345		3.993	.000	.695	2.063
Market Innovation	.644	.086	.575	7.480	.000	.473	.814

a. Dependent Variable: performance of the veterinary company's performance of the veterinary companies =  $1.379 + .644$  (Market Innovation)

### Multivariate Analysis

The study applied regression with the performance of the veterinary companies as the dependent variable and innovation culture as the predictor factor. Data from 115 respondents were tested. The regression analysis shows an overall relationship of  $R = 0.684$  and  $R^2 = 0.468$  which meant that 46.8% of the variation in performance of the veterinary companies can be explained by a change in all the predictor factors. The results were enumerated as seen in Table 7.

**TABLE 7: MODEL SUMMARY MULTIVARIATE ANALYSIS**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.684 <sup>a</sup>	.468	.449	.58089

a. Predictors: (Constant), Market Innovation, and Technological Innovation

The values of  $F = 24.210$  show that all the predictor factors statistically and significantly affect organizational performance which means the regression model is a good fit for the data and innovation culture significantly influences the performance of the veterinary companies in Kenya. The level of significance is 0.000 which is less than 0.05 hence the overall regression model significantly predicts the dependent variable. The results were enumerated as seen in Table 8

**TABLE 8: ANOVA<sup>A</sup> RESULTS FOR MODEL SUMMARY**

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	32.678	5	8.169	24.210	.000 <sup>b</sup>
Residual	37.118	110	.337		
Total	69.796	115			

a. Dependent Variable: performance of the veterinary companies

b. Predictors: (Constant), Market Innovation, Technological Innovation,

The study outcome indicated that the predictor variables have a significant positive impact on the performance of the veterinary companies. The results indicate that there is a significant relationship between innovation culture and performance of the veterinary companies;  $p < 0.05$  ( $P = 0.01$ ). Thus, the values of predictor variables are statistically significant with  $p < .05$  which means an increase in the mean index of

predictor variables should increase the performance of the veterinary companies. The results were enumerated as seen in Table 9.

**TABLE 9: REGRESSION COEFFICIENTS<sup>A</sup> FOR MULTIVARIATE ANALYSIS**

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error				Lower Bound	Upper Bound
(Constant)	.552	.367		1.504	.136	-.176	1.281
Market Innovation	.307	.114	.274	2.697	.008	.081	.532
Technological Innovation	.246	.106	.233	2.323	.022	.036	.455

a. Dependent Variable: performance of the veterinary companies

Therefore, the optimal regression model for the study is:  $Y = \beta_0 + \beta_1X_1 + \beta_2X_2$

Performance of the veterinary companies = 0.307 (market innovation) + 0.246 (technology innovation). The model shows that product innovation was the predictor variable that highly affected the performance of the veterinary companies, followed by market innovation and technological innovation. Process innovation had the least effect on the performance of the veterinary companies.

**Conclusion and Recommendation**

The study reaffirmed that there is a positive and significant relationship between technology, and market innovation, and the performance of veterinary companies. The study, therefore, concludes that there is a positive and significant effect of technology innovation and performance in the veterinary companies in Kenya. The study further concludes that among the innovation culture included in the study, technological innovation had the most influence on the performance of the veterinary companies. The study affirmed that market innovation had a significant effect on performance. The study also concludes that there is a positive and significant effect of market innovation on performance in the veterinary companies in Kenya. The study concludes that market innovation was being also a significant innovation strategy to affect performance in the veterinary companies.

UEAL management should know that the superior performance of the veterinary companies requires the latest technology that should be adopted in operations and link different departments for effective operationalization of organization processes and activities. Considering that other firms are in the rush to acquire technology, which helps to reduce workload and promote efficiency. Adequate funds should be set aside on the organization's budget to meet the needs of changing IT landscape. The IT department at UEAL should be tasked with ensuring regular training of the employees to equip them with the necessary skills for their operations. On a day-to-day basis, the officer should update the system, to be up to date to avoid wrong delivery of information from the systems.

The study recommends that the performance of the veterinary companies should continuously engage in product innovation to enhance the competitive advantage they possess against other players in the veterinary companies. This can be achieved by conducting market research among veterinary company's clients and identifying products that they can introduce into their catalog that will not only attract new clients but also retain old customers. The study recommends that to increase the number of customers and for businesses to grow further management of UEAL should invest more in consumers' preferred vet products. UEAL management should embrace market innovation by taking advantage of the numerous communication technologies and mediums to reach a larger audience. The study recommends that there should be more research on innovation culture and organizational performance using a case-by-case analysis of other sector players such as insurance firms, manufacturing firms, and blue-chip organizations to validate the findings of this study.

## **REFERENCES**

- Aboramadan, M., Albashiti, B., Alharazin, H., & Zaidoune, S. (2019). Organizational culture, innovation, and performance: a study from a non-western context. *Journal of Management Development, Vol. 39(4), 437-451.*
- Agrochemicals Association Of Kenya. (2020). *Agrochemicals Association Of Kenya Annual Report 2019.* Nairobi: AAK.

- Akbari, M., Khodayari, M., Khaleghi, A., Danesh, M., & Padash, H. (2020). Technological innovation. research in the last six decades: a bibliometric analysis. *European Journal of Innovation Management*, Vol. 24(1).
- Bickman, L., & Rog, D. (2017). *Applied research design: A practical approach*. Thousand Oaks: Sage Publishers.
- Bipp, T., & Kleingeld, A. (2011). Goal-setting in practice: The effects of personality and perceptions of the goal-setting process on job satisfaction and goal commitment. *Personnel Review*, Vol. 40(3), 306-323.
- Bordens, K., & Abbott, B. B. (2017). *Research Design and Methods: A Process Approach 10th Edition*. London: McGraw-Hill Education.
- Cooper, D., & Schindler, P. (2018). *Business Research Methods*. New Delhi: McGraw Hill.
- Darawong, C. (2018). Dynamic capabilities of new product development teams in performing radical innovation projects. *International Journal of Innovation Science* vol. 10 (3), 333 - 349.
- Dearing, J., & Cox, J. (2018). Diffusion of Innovations Theory, Practice and Principles. *Journal of Health Affairs* vol. 32 (2), 183- 190.
- Dunaetz, D. A. (2020). *Research Methods and Survey Applications: Outlines and Activities*. New York: Martel Press.
- Easterby-Smith, M., Thorpe, R., Jackson, P. R., & Jaspersen, L. J. (2018). *Management and Business Research 6th Edition*. London: SAGE Publications Ltd.
- Hasani, T., & O'Reilly, N. (2020). Analyzing antecedents affecting the organizational performance of start-up businesses. *Journal of Entrepreneurship in Emerging Economies*, Vol. 13 (1), 107-130.
- Huesig, S., & Endres, H. (2018). Exploring the digital innovation process the role of functionality for the adoption of innovation management software by innovation managers. *European Journal of Innovation Management* vol.10, 824-839.
- Johannessen, J., Olsen, B., & Lumpkin, G. (2017). Innovation as newness: what is new, how new and to whom. *Journal of innovation management* volume 4 (1), 20-31.
- Jose, S., Cabanelas, P., Lampon, J. F., & Tania, E. G. (2018). The impact on marketing innovation using customer value creation through competitiveness and

- relationship capabilities. *Journal of Business and industrial marketing* vol. 13 (5), 253- 265.
- Ko, W., Chen, C.-H., Liu, G., Nguyen, B., & Takeda, S. (2020). IT-based product innovation for small firms. *Information Technology & People, Vol. 33(6)*, 1489-1514.
- Leeuwen, G., Polder, M., Raymond, W., & Mohnen, P. (2017). Product, Process and Organizational Innovation: Drivers, Complementarity and Productivity Effects. *Scientific Series* vol 13 (8), 2-26.
- Liu, D., & Zeinaly, S. (2020). A new model for investigating the role of IT-based innovation in the pharmaceutical knowledge-sharing attitude: A study of marketing biotechnology firms. *The international journal of cybernetics, systems and management sciences* vol. 19(13), 412-426.
- Milewski, S., Fernandes, K. J., & Mount, P. M. (2017). Exploring technological process innovation from a lifecycle perspective. . *Journal of Operations and Production Management* vol 35 (9), 1312 - 1331.
- Mudogo, E. K. (2019). *Technological innovation and performance of telecommunications sectors in Kenya*. Nairobi: MBA Thesis UoN.
- Nadoo, V. (2018). Firm survival through a crisis: the influence of marketing orientation, innovation, and business strategy. *Industrial Marketing Management Journal* vol. 39(8), 1311 - 1320.
- Nguyen, H., & Harrison, N. (2018). Leveraging customer knowledge to enhance process innovation as a moderating effect from market dynamics. . *Business Process Management Journal* vol 6 (2), 366-379.
- Persaud, A., Wang, S., & Schillo, S. (2021). Assessing firm's differences using multi-level modeling in marketing innovation. *Journal of Business & Industrial Marketing, Vol 36(1)*.
- Radnejad, A., Osiyevskyy, O., & Vredenburg, H. (2020). Barriers to radical process innovation: a case of environmental technology in the oil industry. *Journal of Strategy and Management, Vol. 13 (4)*, 453-476.
- Remirez, F. J., Parrra-Requena, G., Ruiz-Ortega, J. M., & Pedro, M. G. (2018). From external information to marketing innovation: the mediating role of product

- and organization innovation. . *Journal of Business and Industrial marketing* vol. 33 (5), 695 - 70.
- Sanchez, J. (2008). The resource-based view of the firm: some stumbling blocks on the road to understanding sustainable competitive advantage. *Journal of European Industrial Training*, vol. 24 (2), 94-104.
- Sarwar, A., Imran, M., Anjum, Z., & Zahid, U. (2020). How innovative climate leads to project success: the moderating role of gender and work culture. *Innovation & Management Review*, Vol. 17 (4), 413-430.
- Saunders, M., Lewis, P., & Thornhill, A. (2018). *Research Methods for Business Students*. London: Financial Times.
- Taleget, S. (2018). Innovation and barriers to innovation. . *Journal of Small Business and Entrepreneurship development* vol. 2 (1), 83-106.
- Thornhill, A., Lewis, P., & Saunders, M. (2019). *Research Methods For Business Students*. London: Pearson Education.
- Ultravetis. (2019). The VET At Ten. *Vet Magazine July - December Issue 20*, 1-8.
- Ulusoy, D., Kilic, W., Alpkan, W., & Gudday, T. (2015). Effects of Innovation Types of organization performance. *Management Journal* vol. 2, 2 - 43.
- Van der Veer Martens, B. (2006). Theories in Practice: Theory functions and Diffusion of Innovation", Garten, E.D., Williams, D.E. and Nyce, J.M. (Ed.) *Advances in Library Administration and Organization*, Vol. 23, 1-57.
- Varadarajan, R. (2017). Strategic Marketing and Marketing Strategy: Domain, definition, fundamental issues and foundations premises. . *Journal of the Academy of Marketing Science* vol. 38 (2), 119 - 121.
- Wanja, N. E. (2018). *The influence of innovation practices on the performance of Small and Medium Manufacturing Enterprises (SMMEs) in Kenya*. Ph.D. thesis Jomo Kenyatta University of Agriculture and Technology.
- Zhu, J., Wang, Y., & Wang, C. (2018). A comparative study of the effects of different factors on firm technological innovation performance in different high-tech organizations. . *Chinese Management Studies* vol. 9 (2), 235-251.

