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Effect of Electronic Point of Sale System on Operational Efficiency of Hotels in Nakuru County

Lawi Kipng'etich Chirchir[1], Dr. Richard B. Nyaoga[2], Dr. John Tanui[3], Dr. Njenga Gitahi[4]

[1]Student, Master of Business Administration: Operations Management
[2]Faculty of Commerce: Department of Accounting, Finance & Management Science Egerton University- Kenya
[3]School of Business and Economics; Kabarak University- Kenya
[4]School of Business and Economics; Kabarak University- Kenya

ABSTRACT: The main aim of this study was to determine the effect of Electronic Point of Sale System on operational efficiency of Hotels within Nakuru County. Specifically, the study determined the effect of electronic Point of Sale System (EPOS) data processing, transactional tracking, transactional security and reporting systems on operational efficiency of hotels in Nakuru County. Descriptive research design was adopted. The target population of the study was 36 Hotels in Nakuru County with one respondent from each hotel who was the Operation Manager. A census survey was used to conduct the study targeting the entire first to fifth Star hotels in Nakuru County. Correlation results showed that a strong positive significant relationship existed between EPoS data processing speed and operational efficiency of Hotels in Nakuru County ($r = 0.528$; $p < 0.05$). This led to the rejection of the null hypothesis and subsequently the adoption of the view that EPoS data processing speed was instrumental in ensuring effective operational efficiency of Hotels in Nakuru County. Correlation analysis was also done to determine effect of EPoS transaction tracking speed on operational efficiency of the hotels in Nakuru County. The results showed a significant relationship existed ($r = 0.218$, $p < 0.05$) between the two variables. The degree of the association of the two variables was weak but positive suggesting that EPoS transaction tracking speed was not a strong factor in operational efficiency of the Hotels in Nakuru County. Correlation analysis showed that there was no significant relationship existing between EPoS transaction security and control on operational efficiency of the Hotels in Nakuru County ($r = 0.096$, $p = 0.386$). This result suggested that EPoS transaction security and control was not a priority to the hotels in Nakuru County. Finally, correlation analysis to determine whether EPoS reporting system affects operational efficiency of the hotels in Nakuru County indicated that the relationship is, in fact, significant ($r = 0.443$, $p < 0.05$). The first hypothesis was tested the test results showed that there exists a statistically significant correlation between EPoS data processing speed and operational efficiency ($\beta = 0.445$, $\rho = 0.000 < 0.05$). The result leads to the rejection of the null hypothesis, hence a conclusion that there exists a significant effect of EPoS data processing speed on operational efficiency of hotels in Nakuru County. The test results showed that there exists a statistically significant correlation between EPoS transaction tracking speed and operational efficiency ($\beta = 0.177$, $\rho = 0.001 < 0.05$). The result leads to the rejection of the null hypothesis, hence a conclusion that there exists a significant effect of EPoS transaction tracking speed on operational efficiency of Hotels in Nakuru County. Another test was done at a significant level 0.05. The test results show that there exists no correlation between EPoS transaction security and control and operational efficiency ($\beta = 0.060$, $\rho = 0.579 > 0.05$). This results in the failure to reject the null hypothesis, hence a conclusion that there is no significant effect of EPoS transaction security and control on operational efficiency of the Hotels in Nakuru County. Finally, hypothesis was tested at a significant level 0.05. The test results showed that there exists a statistically significant correlation between EPoS reporting system on operational efficiency ($\beta = 0.358$, $\rho = 0.000 < 0.05$). The result leads to the rejection of the null hypothesis, hence a conclusion that there exists a significant effect of EPoS reporting system on operational efficiency of Hotels in Nakuru County. From the descriptive results it can be concluded that the hotels have improved storage and processing of their customer data. In addition, through electronic point of sale storage of their room data have been enhanced. From the conclusions a recommendation can be made that the hotels should maintain improved storage and processing of their customer data. Further research on electronic Point of Sale System on operational efficiency should be carried out to identify other elements that appear to be critical to the success of operational efficiency

Key words: *Electronic Point of Sales Systems, Computer Application, Operation Management, Operational Efficiency*

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I. Background of the Study

To remain competitive in today's global economy, it is essential for companies to boost their operational efficiency where ever possible. There are several strategies firms use to enhance their operation efficiency, one of which is the use of Electronic Point of Sales systems (EPOS). The main role of operations is to ensure the efficient delivery of the goods and services without interruptions. Operational performance is defined as the firm's performance measured against standard or prescribed indicators of effectiveness, efficiency and environmental responsibility (Hsieh & Lin, 2010). This is done by reviewing and optimizing the operations of the business units, through dedicated information technology solutions. According to Porter and Tanner (2012), Operational performance of a firm is measured against standards or prescribed indicators of effectiveness, efficiency and environmental responsibility for example cycle time, productivity, waste reduction and regulatory compliance.

Operational performance management is defined as the alignment of the various business units within a company in order to ensure that the units are helping the organization achieve a global strategy and attain a set of centralized goals (Rummler & Brache, 2012). Operational performance includes guidance on achieving effectiveness and efficiency in the delivery and support of services so as to ensure value for the customer (Neely, Gregory & Platts, 1995). Key operational performance measures used to assess the success of operations in a firm are; Efficiency, degree of responsiveness, flexibility and quality. Strategic objectives are ultimately realized through service operations efficiency, therefore making IT a critical capability (Inman, Sale, Green & Whitten, 2011). Operational performance management helps maintain stability in service operations, allowing for changes in design, scale, scope and service levels (Jacobs & Swink, 2011).

Information technology supports the primary objective of operational performance that is to ensure uninterrupted business operations, delivery of agreed services, cost efficiency and operations quality efficiency (Davenport, 2013). Information technology plays a major role in tourism, travel and hospitality industry. The integration of ICT in the hospitality industry is essential for the success of tourism enterprises. IT facilitates an individual to access the products information from anywhere any time, can also reach the targeted customers across the globe in a single click on the keypad through the use of mobile computers and web technologies (Bethapudi, 2013).

1.2 Statement of the problem

It is the concern of the firms that their operations management practices help them achieve; product and service design, process design, facility layout, inventory control, planning and control, people and job design, facilities improvements and organization for quality. Operation efficiency on the other hand contributes to performance, which is the capability of an enterprise to deliver products or services to its customers in the most cost-effective manner. Information Technology (IT) is an enhancer to efficient delivery of services to customers which is associated with the expected operation efficiency. Information Technology attempts to improve the quality of goods and services offered, through cost management, time service delivery and improve processes and procedures. According to Porter and Tanner (2012) the development of IT has had profound effects on goods and services marketing. Adeoti and Oshotimehin (2012) reported that despite the general increase on the rate of adoption of e-payment instruments in Nigeria, the rate of adoption and use of POS is low compared to the rest of the e-payment system. Hospitality sector is one of the sectors where customers pay for the value of the services offered, of which such services should be delivered in packages of high level efficiency, where Information Technology converges with operations management to achieve this goal. Some of the benefits of EPOS include real time and up-to-date monitoring of utilization of resources within in the process of providing services. EPOS System is also good in checking for any obsolescence or expired stock that needs to be disposed. One other advantage of EPOS System is its ability to help business achieve detailed real-time resource level information. In spite of the benefits of EPOS, most hotels are still facing the challenges of reaping from the benefits because of inadequate readdress of EPOS in their operations.

PwC asserts that whereas visitor numbers to Kenya fell after the national elections in August 2017, the market saw these numbers recover in December with a 9.9-percent increase in visitor numbers. The increase, though, was not enough to boost rooms' revenue, which fell 13.5 per cent. Tourism in Kenya is expected to increase 6.9 percent to 2.06 million in 2022 from the 1.47 million recorded in 2017. These numbers and associated revenues have the potential to propel hotel investors to success. A key component of this success would be the enhancement of efficiency. Despite hotels in the recent past adopting Electronic Point of Sales to enhance their operational efficiency, little is known how the various

aspects of an EPOS system have enhanced the expected efficiency. This has necessitated the current study that will assess the effect of electronic Point of Sale System on operational efficiency of Hotels in Nakuru County.

Research Hypothesis
H_{01}: EPoS data processing does not have any significant effects on operational efficiency of Hotels in Nakuru County
H_{02}: EPoS transaction tracking speed does not significantly affect operational efficiency of Hotels in Nakuru County
H_{03}: EPoS transaction security and Control does not significantly affect operational efficiency of Hotels in Nakuru County
H_{04}: EPoS reporting system does not significantly affect operational efficiency of Hotels in Nakuru County

II. LITERATURE REVIEW

2.2 Theoretical Framework
In order to explore the effect of electronic point of sale system on operational performance of hotels in Nakuru County, the study adopts two theories; Technology Acceptance Model, Synergy Theory and Convention Economic Efficiency Theory.

2.2.1 Technological Acceptance Theory
This study adopted the theoretical extension of Technology Acceptance Model (TAM2) introduced by Venkatesh and Davis (2000). Original TAM was developed by Davis (1986) to explain why users adopt or reject an innovative information system. It offers a powerful explanation for user acceptance and usage behaviour of information technology. TAM theorizes that an individual's behavioral intention to adopt a system is determined by two beliefs, perceived usefulness (PU) and perceived ease of use (PEOU). TAM2 extended the constructs of TAM and included additional determinants of TAM's PU and usage intention constructs. This model helps to understand how the effects of these determinants change with increasing user experience over time with the target system. TAM2 incorporates additional theoretical constructs spanning social influence processes and cognitive instrumental processes and explained that the additional constructs - social influence processes (subjective norm, voluntariness, and image) and cognitive instrumental processes (job relevance, output quality and result demonstrability) significantly influenced user acceptance. The level of Technology acceptance will influence the operational efficiency of any organization. Technology is a major driving force of organizational efficiency hence performance. The Utilization of modern ICT technologies significantly improve and organization's efficiency and effectiveness which in the long run reduces operational costs which attracts new client and hence affecting the operational efficiency.

2.2.2 The Synergy Theory
The second theory adopted by the study is the Synergy Theory by Chatterjee (1986). The Synergy Theory stipulates that the "amount of the resources held by the firm, relative to the total amount present in the economy and the availability of opportunities to utilize this resource" determine the amount of created value (Chatterjee, 1986; Krishnan et al., 2009). Therefore, "resources contribute to the advantage of one firm over another" (Krishnan et al., 2009). The literature includes different definitions of the term "resource" such as "inputs to the production process" or "stocks of available factors that are owned or controlled by the firm". Frequently, it is described that resources can be categorized as tangible resources like capital and buildings and intangible resources like skills and competencies. It has to be considered that this resource-based view is also criticized, because it focuses on the company's internal potential as a source of competiveness and neglects "the need for external market orientation to achieve competitive success" (Broderick et al., 1998).

2.2.3 Convention Economic Efficiency Theory
The conventional economic efficiency theory formed the basis of the present studies on efficiency performance of hotels. According to Aly et.al, (1990), the theory stipulates that companies should achieve their output at the lowest possible cost per unit produced. Based on the theory, optimal production can be achieved by economies of scale, and a perceptible benefit is repeatedly counteracted by more costs associated with overstressing the existing systems. In the short run, the situation of maximum operational efficiency is attained at the level of output at which all accessible economies of scale are taking advantage of such efficiency. In the long run, lifting the capacity of existing systems can increase the optimal level of productive efficiency (Zerbe, 2001). The conventional economic efficiency theory is decomposed into allocative (price) efficiency criteria and the productive (technical) efficiency criteria.

2.3 Conceptual Framework

This is a hypothesized model identifying the concepts or variables under the study and their relationships. It is a scheme of concepts (variables), which the researcher will operationalize in order to achieve the set objectives. The purpose of the conceptual model is to help the researcher to relate the proposed relationships.
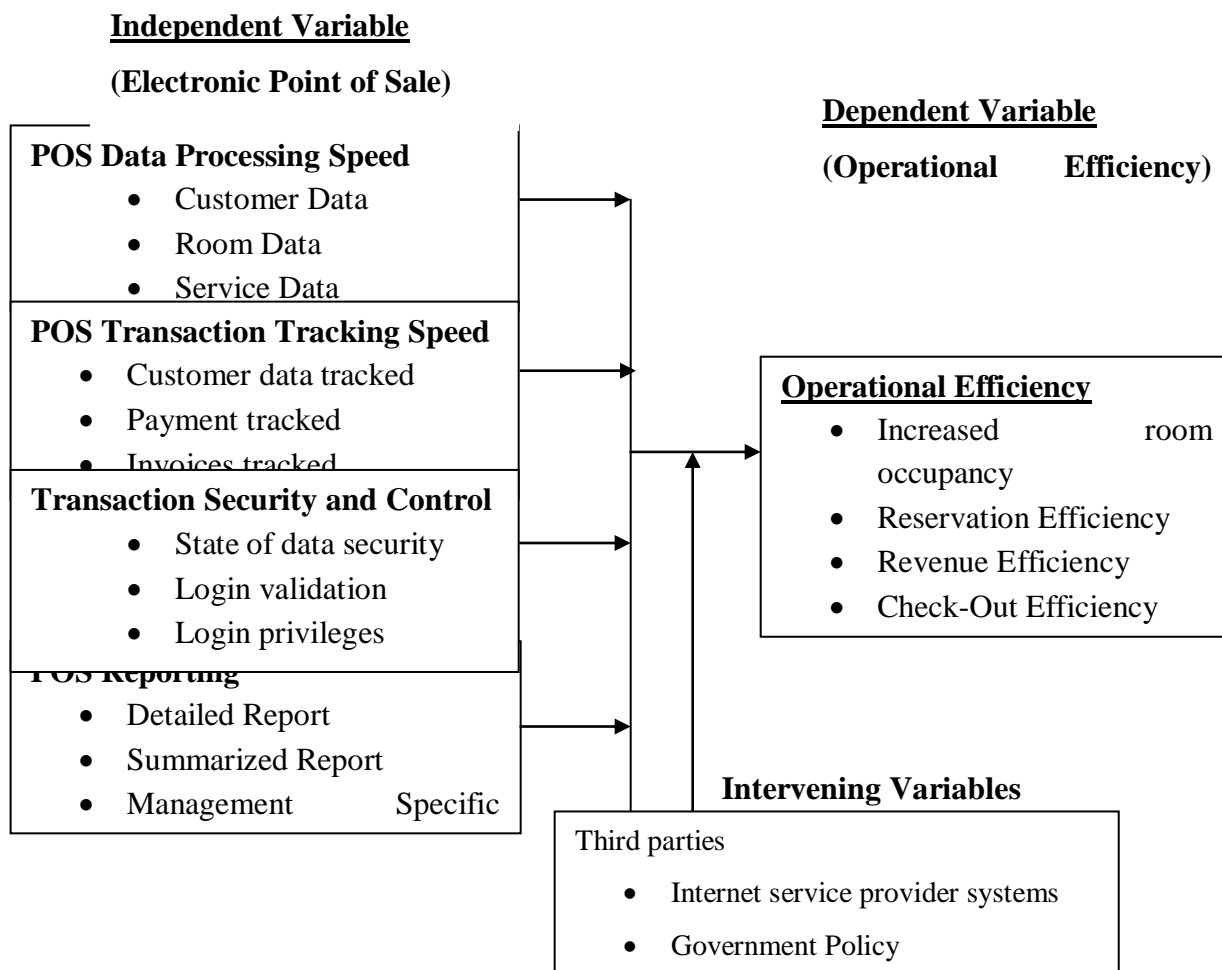
Independent Variable

(Electronic Point of Sale)

Dependent Variable

(Operational   Efficiency)

POS Data Processing Speed
- Customer Data
- Room Data
- Service Data

POS Transaction Tracking Speed
- Customer data tracked
- Payment tracked
- Invoices tracked

Transaction Security and Control
- State of data security
- Login validation
- Login privileges

POS Reporting
- Detailed Report
- Summarized Report
- Management   Specific

Operational Efficiency
- Increased   room occupancy
- Reservation Efficiency
- Revenue Efficiency
- Check-Out Efficiency

Intervening Variables

Third parties
- Internet service provider systems
- Government Policy

Figure 2. 1: Conceptual Framework

Source: (Researcher, 2019)

The independent variables are POS data processing speed, POS transaction tracking speed, transaction security and control and POS reporting. The dependent variable is Operational efficiency. The extraneous variable is Third party internet service providers. When hotels have effective POS data processing speed, POS Transaction tracking speed, transaction security and control and POS reporting then the operational efficiency in terms of reservation, revenue and check-out will improve and vice versa.

RESEARCH METHODOLOGY

3.1 Research Design

This study adopted descriptive research design. Information was collected from respondents about their experiences and opinions in order to generalize the findings to the population that the sample is intended to represent (Gall, Borg & Gall, 1996). This method is the most appropriate for obtaining factual and attitudinal information or for research questions about self-reported beliefs, opinion, characteristics and present or past behavior (David & Sutton, 2004).

3.2 Study Area

The study was conducted in first to fifth star hotels in Nakuru County. Nakuru County has many hotels by its comparative advantage of having Three National Parks (Lake Nakuru National Park, Hells Gate National Park, and Mount Longonot National Park) and several other tourist attraction sites like Hyrax Pre-Historic Site. The hotels are spread out in different locations in the County, majority of which are in Naivasha and Nakuru Sub-Counties.

3.3 Population of the Study

The target population was all the 36 hotels in Nakuru County (see appendix III). This population is appropriate because of their ability to observe the effect of EPOS on operation efficiency of the hotels. This population is relevant to the study because their involvement in hotel operation, ICT and strategic leadership. A census survey was used to conduct the study targeting the entire first to five Star hotels in Nakuru County. Gupta, (2003) argued that when the population is small, a census is appropriate. The respondents of this study were the operations managers from the hotels in Nakuru County.

3.4 Instrumentation

Data was collected using structured questionnaires administered to the selected respondents. The first part of the questionnaire is structured in terms of managers' characteristics which include; gender, age, level of education and experience. The second part of the questionnaire deals with the use of EPOS in running hotel operation presented in terms of Likert-Scale (5- Strongly Agree to 1 – Strongly Disagree). The third part of the questionnaire deals with operation efficiency of the hotels measured in terms of reservation, revenue and check-out efficiencies. The structured questionnaires are preferred because their wordings and sequence are fixed, predetermined and identical for all the respondents (Mugenda & Mugenda, 1991). This has the advantage of eliciting standard answers to questions, making it possible for comparisons to be made between data sets. The questionnaire consists of mainly closed-ended items. The questionnaire has various items seeking different information on various aspects of EPOS and operation efficiency. All the items in the questionnaires are aimed at addressing the hypotheses of the study and majority are in the form of a Likert-Scale.

3.4 Validity of Research Instrument

Validity refers to the degree to which an instrument measures what it is intended to measure (Kathuli & Pals 1993). In order for an instrument to be valid, it should cover the content of the study. All aspects of validity: content validity, construct validity and logical validity was appropriately covered as they are important in a research instrument. The instruments validated by three experts in operation management. A pilot study was conducted in 5 hotels of the same star in Laikipia County. Results from the pilot study were used to improve the instrument. Laikipia County was chosen because of the significant number of rated hotels in the county. The five hotels selected represented each star rating category from first to fifth.

3.4.1 Reliability of the Instrument

Reliability is the measure of the degree to which a research yields consistent results or data after repeated trials. It is the degree of consistency that the research instruments or procedures demonstrate. Poor reliability degrades the precision of a single measurement and reduces the ability to track changes in measurement in a study (Mugenda and Mugenda 2003). A reliable instrument consistently produces the expected results when used more than once to collect data from the same subjects randomly drawn from the population (Mugenda and Mugenda 2003). The data obtained from a pilot study was used to estimate reliability of the instrument. Cronbach`s alpha coefficient was used to estimate reliability of the questionnaires. This is because all the instruments were rated based on scales with a range of scores. The instruments should yield Cronbach reliability coefficient of at least 0.7 which were accepted as reliable.

Table1: Reliability test

Study variable	No of test items	Cronbach's Alpha
EPOS Data Processing	6	0.786
EPOS Transactional Tracking	6	0.763
EPOS Transactional Security	6	0.836
EPOS Reporting System	6	0.734
Operational Efficiency	5	0.713

3.5 Data Collection Procedure

The researcher collected data from the selected respondents after obtaining a letter from Kabarak University Graduate School with a view to secure a research permit from National Commission of Science, Technology and Innovation (NACOSTI) whom issued the researcher, with a research permit and research authorization letter. The questionnaires were distributed to the managers to fill. The researcher then collected the questionnaires in two weeks' time.

3.6 Data Analysis and Presentation

Data collected was processed, coded and analyzed to facilitate addressing the research objectives and answering the questions. This was done using both descriptive and inferential statistics. Data collected was processed and analyzed based on the objectives and research hypotheses using Statistical Package for Social Sciences (SPSS). This was done using both descriptive and inferential statistics. Descriptive statistics (percentages, frequencies, and chi-square analysis) presented in tables were used to organize and summarize data and to describe the characteristics of the sample. To establish the linear relationship between each objective of EPOS and operational efficiency, Pearson Correlation will be used. In establishing linear relationship between each objective of EPOS and operation efficiency, Pearson Correlation was used. All inferential statistics was tested at $\propto$ = 0.05 significance level. To establish the effect of EPoS on Operational efficiency, a multiple regression model was used as shown below

$$y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where;

Y= Operational efficiency

α =constant

$\beta_1 \ldots \ldots \beta_{4d}$ = parameter estimates

X_1 = EPOS Data Processing

X_2 = EPOS Transactional Tracking

X_3 = EPOS Transactional Security

X_4 = EPOS Reporting System

ε is the error term.

Multicollinearity test was conducted to determine the correlation of the explanatory variables. Multicollinearity occurs when two or more predictors in the model are correlated and provide redundant information about the response. The

diagnostics variance inflation factor (VIF) and tolerance was used to test for multicollinearity of the independent variables. However, there is no universal criterion for determining the minimum level of the tolerance value or VIF. Pallant (2007) and Hocking (2003) argue that a tolerance value less than 0.1 or VIF greater than ten (10) roughly indicates significant multicollinearity.

3.7 Ethical Issues

According to (Creswell , 2009) the most important issues and concerns that the researcher had to consider and fulfill are informing the participants in detail about their involvements in the research, avoiding harm and risk and allowing free choice. Moreover, it is important to ensure privacy, confidentiality and anonymity are guaranteed.

RESEARCH FINDINGS AND DISCUSSIONS

4.1 Diagnostic Tests

In order to justify the use of the regression model pre-estimation and post estimation tests were conducted. The pre-estimation tests conducted in this case were the linearity test and multicollinearity test while the post estimation test was test for autocorrelation. This was performed to avoid spurious regression results from being obtained.

4.1.1 Tests of Linearity

Linearity test was conducted though the ANOVA test before carrying out regression analysis. It was to visually show whether there is a curvilinear relationship between two continuous variables. According to Osborne and Waters (2012), the relationship must be linear for regression models to accurately estimate the relationship between dependent and independent. Results presented in table 4.14 shows that the F statistic is significant at 0.05-significance level and therefore the study concluded that there exists a significant linear relationship between the dependent and the independent variables, and thus the data on the variables of this study were appropriate for regression analysis.

Table 2: ANOVA[a] Table

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	8.841	4	2.2103	45.108	.000[b]
	Residual	1.267	26	.049		
	Total	10.108	30			

a. Dependent Variable: Operational Efficiency

b. Predictors: (Constant), EPOS Data Processing, EPOS Transactional Tracking, EPOS Transactional Security and EPOS Reporting System

4.1.2 Test for Multicollinearity

A multicollinearity test was carried out to ensure that the independent variables did not have co-linearity amongst themselves. The existence of a high degree of association between independent variables is said to be a problem of multicollinearity which results into large standard errors of the coefficients of the affected. The variance inflation factors (VIF) and Tolerance were used to assess multicollinearity. According to Field (2009) VIF values above 10 are said to be an indication of the presence of multicollinearity. Tolerance values below 0.1 are an indication of the presence of multicollinearity. The VIF and Tolerance values as shown in Table 3 according to Field, (2009) indicated that there is no multicollinearity.

Table 3: Tolerance and VIF Test

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	EPOS Data Processing	.741	1.350
	EPOS Transactional Tracking	.757	1.321
	EPOS Transactional Security	.706	1.417
	EPOS Reporting System	.724	1.301

a. Dependent Variable: Operational Efficiency

4.1.3 Test for Autocorrelation

The Durbin-Watson test for autocorrelation was conducted to determine whether there is autocorrelation (serial correlation). The decision rule is that test statistic values ranging between 1.5 and 2.5 are relatively normal. According to Field (2009), values outside this range could be cause for concern. The results indicated a value of 2.096 which falls between the range of 1.5 and 2.5 and therefore it was concluded that there was no auto correlation.

Table 4. Autocorrelation Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.935a	.875	.865	.1826	2.096

a. Predictors: (Constant), EPOS Data Processing, EPOS Transactional Tracking, EPOS Transactional Security, EPOS Reporting System
b. Dependent Variable: Operational Efficiency

4.2: Correlations Analysis

The Pearson product-moment correlation coefficient was used to obtain a measure of the strength of association between two variables (Independent and Dependent).

Table 5: Summary of Correlations

		EPoS Data Processing Speed	EPoS Transaction Tracking Speed	EPoS Transaction Security and Control	EPoS Reporting System	Operational Efficiency
EPoS Data Processing Speed	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	31				
EPoS Transaction Tracking Speed	Pearson Correlation	.199	1			
	Sig. (2-tailed)	.069				
	N	31	31			
EPoS Transaction Security and Control	Pearson Correlation	-.001	.184	1		
	Sig. (2-tailed)	.994	.094			
	N	31	31	31		
EPoS Reporting System	Pearson Correlation	.033	.133	0.419	1	
	Sig. (2-tailed)	.763	.227	.742		
	N	31	31	31	31	
Operational Efficiency	Pearson Correlation	.528**	.218*	.096	.443**	1
	Sig. (2-tailed)	.000	.047	.386	.000	
	N	31	31	31	31	31

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

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

The correlation summary shown in Table 4. indicates that the associations between the independent variables and the dependent variable were significant save for one which was insignificant at the 95% confidence level. Also, the inter-variable correlations between the independent variables were insignificant to affect the relationship with the dependent

variable, hence, the effects of multicollinearity were minimized. Therefore, further analysis of the variables was carried out as follows.

There is a significant positive relationship observed between constraint EPoS data processing speed (r = 0.528; p=0.000 < 0.05)and operational efficiency. The two operations constraints that have a relationship with operational efficiency are EPoS data processing speed and EPoS reporting system. There was also a significant positive relationship observed between constraint EPoS transaction tracking speed (r = 0.218, p =0.047<0.05) and operational efficiency. However, the degree of the association of the two variables was weak but positive suggesting that EPoS transaction tracking speed was not a strong factor in operational efficiency of the Hotels in Nakuru County. The two operations constraints that have a relationship with operational efficiency are EPoS data processing speed and EPoS reporting system. There is a significant positive relationship observed between constraint EPoS transaction security and Control (r = 0.096, p = 0.386> 0.05) and operational efficiency. The two operations constraints that have a relationship with operational efficiency are EPoS data processing speed and EPoS reporting system. Finally, the results of the analysis on the correlation between EPoS reporting system on operational efficiency. There is a significant positive relationship observed between constraint EPoS transaction security and Control (r = 0.443, p = 0.000 <0.05) and operational efficiency.This result suggest that the way things were at the moment, EPoS reporting system was not a priority to the Hotels in Nakuru County. The two operations constraints that have a relationship with operational efficiency are EPoS data processing speed and EPoS reporting system.

4.3 Regression Analysis
The multiple linear regressions were undertaken for the purpose of determining the effect of electronic Point of Sale System on operational efficiency of Hotels in Nakuru County.

Table 6: Multiple Linear Regression Analysis Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.547a	.300	.264	2.37043

a. Predictors: (Constant), EPoS data processing speed, EPoS transaction tracking speed. EPoS transaction security and Control and EPoS reporting system

The coefficient of determination (R Square) of 0.300 indicated that the independent variable constituted 30% of the variance in the dependent variable. These adjusted r^2results therefore explained 26.4% while the 73.6% is explained by other variables outside the scope of this study.

Table 7: Summary of ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	189.856	4	47.464	2.780	.000b
Residual	443.894	26	17.073		
Total	633.750	30			

a. Dependent Variable: Operational Efficiency
b. Predictors: (Constant), EPoS data processing speed, EPoS transaction tracking speed. EPoS transaction security and control and EPoS reporting system

The results indicate that there is a significant difference between means of electronic Point of Sale System on operational efficiency of the Hotels in Nakuru County ($F_{o'}$ = 2.780 > F_c = 2.50; α < 0.05; df = 4, 26; p = 0.000). This finding confirms that the model is as predicted by Table 4.15 and shows it is indeed significant.

In order to determine which of the independent variables was more important when it came to the operational efficiency of the hotels in Nakuru County the beta value was used. The results are given provide a summary of the multiple linear regression analysis correlation coefficients.

Table 8: Multiple Linear Regression Results

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	2.250	4.759		.473	.638
EPoS Data Processing Speed	.445	.084	.510	5.295	.000
EPoS Transaction Tracking Speed	.177	.103	.181	1.751	.001
EPoS Transaction Security and Control	.060	.108	.058	.557	.579
EPoS Reporting System	.358	.117	.256	3.494	.000

a. Dependent Variable: Operational Efficiency

It can be deduced from the findings that the most influential electronic Point of Sale System in the model predicting Operational Efficiency was EPoS Data Processing Speed (β = 0.445, ρ = 0.000< 0.05). This was followed by EPoS Reporting System (β = 0.358, ρ = 0.000< 0.05) and EPoS Transaction Tracking Speed (β = 0.177, ρ = 0.001< 0.05) respectively. This indicates that the dependent variable, that is, the Operational Efficiency, would change by a corresponding number of standard deviations when the respective independent variables change by one standard deviation. However, the variable EPoS Transaction Security and Control was found not to contribute significantly to the model (β = 0. 06, ρ = 0.579>0.05). The study therefore establishes that EPoS Data Processing Speed, EPoS Reporting System and EPoS Transaction Tracking Speed were factors affecting operational efficiency of Hotels in Nakuru County

4.4 Hypothesis Testing

The first hypothesis was tested under the null hypothesis;

H_{01}: EPoS data processing speed has no significant effect on Operational Efficiency of Hotels in Nakuru County

The results of the analysis on the correlation between EPoS data processing speed and operational efficiency are presented using multiple regressions. The test was done at a significant level 0.05. The test results show that there exists a statistically significant correlation between EPoS data processing speed and operational efficiency (β = 0.445, ρ = 0.000< 0.05). The result leads to the rejection of the null hypothesis, hence a conclusion that there exists a significant effect of EPoS data processing speed on operational efficiency of Hotels in Nakuru County Electronic Point of Sale System has a significant positive effect on operational efficiency with a correlation coefficient of R = 0. 547 (a) and adjusted R^2 = 26.4%, F = 2.780; Sig. = .000(a). This is a clear indication that EPoS data processing speed is a significant predictor of the firm's operational efficiency. Hence, we fail to reject **H_1**. EPoS data processing speed explains 54.7% of the variance in the firm's operational efficiency. The relationship between electronic Point of Sale System and the firm's operational efficiency is positive and significant.

H_{02}: EPoS Transaction Tracking Speed has no significant effect on Operational Efficiency of Hotels in Nakuru County

The second hypothesis was tested by determining the relationship between EPoS transaction tracking speed and operational efficiency using multiple regressions whose results are shown. The test was done at a significant level 0.05. The test results show that there exists a statistically significant correlation between EPoS transaction tracking speed and operational efficiency (β = 0.177, ρ = 0.001< 0.05). The result leads to the rejection of the null hypothesis, hence a conclusion that there exists a significant effect of EPoS transaction tracking speed on operational efficiency of Hotels in Nakuru County

H_{03}: EPoS transaction security and Control has no significant effect on operational Efficiency of the Hotels in Nakuru County

The third hypothesis was tested by determining the relationship between EPoS transaction security and Control and operational efficiency using multiple regressions whose results are shown. The test was done at a significant level 0.05. The test results show that there exists no correlation between EPoS transaction security and Control and operational efficiency (β = 0.060, ρ = 0.579>0.05). The result leads to the failure to reject the null hypothesis, hence a conclusion that there is no significant effect of EPoS transaction security and Control on operational efficiency of the Hotels in Nakuru County

H₀₄: EPoS reporting system has no significant effect on operational efficiency of Hotels in Nakuru County.

The fourth hypothesis was tested by determining the relationship between EPoS reporting system and operational efficiency of Hotels in Nakuru County using multiple regressions whose results are shown. The test was done at a significant level 0.05. The test results show that there exists a statistically significant correlation between EPoS reporting system on operational efficiency (β = 0.358, ρ = 0.000< 0.05). The result leads to the rejection of the null hypothesis, hence a conclusion that there exists a significant effect of EPoS reporting system on operational efficiency of Hotels in Nakuru County

Therefore, the emergent linear model was;

$$y = 2.250 + 0.445\,X_1 + 0.177\ \ X_2 + 0.060X_3 + 0.358X_4$$

III.   SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions of the Study

This study sought to establish the effect of EPOS on Operational Performance. The results evidently indicated that: firstly, there is a significant positive relationship observed between constraint EPoS data processing speed 52.8% and operational efficiency. Secondly, the relationship between There is a significant positive relationship EPoS transaction tracking speed on operational efficiency observed between constraint EPoS transactions tracking speed 21.8%of the variance in the firms' operational efficiency. Thirdly, the relationship between EPoS transaction security and Control on operational efficiency as shown by 9.6% of the variance in the firms' operational efficiency. Lastly, the relationship between EPoS reporting system and the firm's operational efficiency is significant and positive explains 44.3% of the variance in the firm's operational efficiency.

5.2 Recommendations of the Study

Other than the present study adding to academic knowledge in a number of ways, the hypotheses tested have a number of practical implications for issues relating to the mediating effect of electronic Point of Sale System and operational efficiency of Hotels in Nakuru County is positive and significant. The study has shown how policy-makers should measure the impact of electronic Point of Sale System and operational efficiency in this breadth, the following specific recommendations are made: That these study findings will provide policymakers with insights, focus on the context of the Hotel Industry in order for the country to capture more value in the tourism sector by maintain improved storage and processing of their customer data. In addition, through electronic point of sale storage of their room data should always be enhanced. However, with regards to service data, recommendation is made that the hotels should ensure the service data is maintained on a daily basis. Besides, the hotels should maintain improved storage and processing of their customer data. The government should provide support to the hotel owners through financial and marketing schemes for market access and quality improvement. That the empirical results can help policy-makers recognize the need for electronic Point of Sale System in the organization; The Hotels should continuously monitor the depth to which electronic Point of Sale System that assists in always tracking their invoices at any time when need be and also the hotels have enhanced their cost controls through the use of electronic point of sale. In addition it is recommended that customers should be able to transfer funds instantaneously from their bank accounts to the hotel's accounts when making purchases. And, That the proliferation of the Internet, as a main stream communication media and as an infrastructure for business transactions has generated a wide range of strategic implications for the businesses.

5.3 Areas for Further Research

Further research on electronic Point of Sale System on operational efficiency should be carried out to identify other elements that appear to be critical to the success of operational efficiency. These comprise of further studies on in other sectors other than the hotel industry and in other counties other than Nakuru County.

REFERENCES

[1.]   Abell, J.C. (2009). *Nov. 4, 1879: Ka-Ching! The World's First Cash Register*. Wired. Retrieved 19th. June 2017 from http://www.wired.com/2009/11/1104ritty-cash-register/

[2.]   Adeoti, O. O., & Oshotimehin, K. O. (2012). Adoption of point of sale terminals in Nigeria: Assessment of consumers' level of satisfaction. *Research Journal of Finance and Accounting*, 3(1), 1-5.

[3.] Allen, T. and Morton, M. (2004). *Information Technology and the Corporation of the 1990s*, New York: Oxford University Press.

[4.] Aly, H.Y, Grabowski R., Pasurka C., and Rangan N., (1990). Technical, Scale, and Allocative Efficiencies in U.S. Banking: An Empirical Investigation, *the Review of Economics and Statistics Vol. 72 (2): 211-218.*

[5.] Barnes, D (2007). *Operations Management: An International Perspective*. Cengage Learning Publishers; UK.

[6.] Bethapudi, A (2013). *Journal of applied economics and business, Vol1, issue 4 – December 2013, pp. 67-79*

[7.] Bowie, D., & Buttle, F. (2013). *Hospitality marketing*. Routledge.

[8.] Buhalis, D. (2004). eAirlines: strategic and tactical use of ICT in the airline industry. Information and Management, 805-825.

[9.] Buhalis, D. and Law, R. (2008). Progress in tourism management: Twenty years on and 10 years after the Internet: The state of eTourism research. Tourism Management, 609– 623.

[10.] Buyukozkan, G., Feyzioglu, O. &Nebol, E. (2008). Selection of the strategic alliance partner in logistics value chain*: International Journal of Production Economics, 113, 148-158*.

[11.] Casison, J. (2013). Retail Technology Update 2013. *Gifts & Decorative Accessories, 114(8), 36.*

[12.] Chatterjee, S., (1986). Types of synergy and economic value: The impact of acquisitions on merging and rival firms, *Strategic Management Journal, Vol. 7 (2), 119-139*.

[13.] Chorafas, D. S. (1988). *Implementing Networks in Banking and Financial services*. Houndmilss: Macmillan Press.

[14.] Cobanoglu, Cihan, Kadir Corbaci, and Bill Ryan. "A comparative study: the impact of technology in lodging properties in the United States and Turkey."*International Journal of Hospitality Information Technology 2.1 (2001): 23-40.*

[15.] Creswell, J. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). Los Angeles: Sage.

[16.] Christensen, J. (2000). IT and business: a history of Scandinavian airlines, Aarhus University Press, Århus, Denmark.

[17.] Daracha, D. K. (2013). *Determinants of Performance of the Tourism Industry in Kenya: A Case of Kakamega County* (Doctoral dissertation, University of Nairobi).

[18.] Davenport, T. H. (2013). *Process innovation: reengineering work through information technology*. Harvard Business Press.

[19.] David, M. and Sutton, C. D. (2004). *Social Research: The Basics. London*: Sage Publication.

[20.] Doganis, R. (2001). The airline business in the 21st century. Routledge, London.

[21.] Duncombe R. and Heeks R. (2006). . Information & Communication Technologies (ICTs), Poverty Reduction and Micro, Small & Medium-scale Enterprises (MSMEs) A framework for understanding ICT applications for MSMEs in developing countries. Institute for Development policy and Management

[22.] Fugate, B. S., Mentzer, J. T., & Stank, T. P. (2010). Logistics performance: Efficiency, effectiveness, and differentiation. *Journal of Business Logistics, 31(1), 43–63.*

[23.] Gall, M., Borg, W. & Gall, J. (1996). *Educational research: an introduction*. (6th ed.). New York, Longman.