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Technological Adoption and Innovative Work Behavior in the Hotel Industry: A Case of Five Selected Hotels in Kampala City, Uganda

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Abstract:
The study examined Technological Adoption and Innovative Work Behavior in the Hotel Industry, a Case of Five Selected Hotels in Kampala City, Uganda. The study mainly focused on three specific objectives: To examine the relationship between Property Management Systems and Innovative Work Behavior; to assess the relationship between Mobile Applications and Innovative Work Behavior and to analyze the relationship between Online Booking Platforms and Innovative Work Behavior in selected hotels in Kampala City. The cross-sectional research design employed both qualitative and quantitative data collection techniques. Krejcie and Morgan Sample Size Determination Table was used to select a sample size of 291 participants / respondents from a population of the selected hotels and 233 questionnaires collected for analysis. Data was examined using both descriptive and inferential statistics, including ANOVA, Pearson correlation, and model summaries for regression analysis. The findings show a positive and significant correlation between technological adoption and innovative work behavior ($r=.853$, $P<0.05$). This reveals that the integration of property management systems, mobile applications, and online booking platforms significantly influence innovative work behavior by improving efficiency, facilitating collaboration, encouraging adaptive problem-solving, and promoting a culture of continuous improvement. These technologies create an environment where staff are better equipped to focus on creative solutions and respond dynamically to emerging challenges. The research concludes that improving Property Management Systems (PMS) and fostering innovative work behavior in hotels are interconnected goals that drive operational excellence and guest satisfaction; mobile applications are a powerful driver of innovative work behavior in hotels and Online Booking Platforms significantly impact innovative work behavior in hotels by streamlining operations, enhancing data utilization, and encouraging experimentation. The study recommended that hotels should use PMS automation features to handle routine tasks such as guest check-ins/outs, invoicing, and housekeeping assignments. This reduces manual work and frees up staff time for more innovative activities. The study also recommends that hotel should select mobile apps that align with its operational needs and guest service goals, focus on apps that enhance efficiency, data utilization, and guest interaction.

Keywords: Technological Adoption, Property Management Systems, Mobile Applications, Online Booking Platforms, Innovative Work Behavior, Hotel Industry.

Introduction to the Study

The hotel industry stands at the forefront of technological innovation, with advancements continuously reshaping the landscape of hospitality management. As hotels navigate the complexities of an increasingly digital world, understanding the interplay between technology adoption and innovative work behavior among employees becomes paramount. Innovative work behavior encompasses the generation, development, and implementation of novel ideas aimed at improving organizational processes and outcomes (Amabile, 1988). For hotels striving to differentiate themselves in a competitive market, fostering innovation among employees is crucial for driving business success and guest satisfaction (Lee & Lan, 2007).

In Africa, the adoption of technology in the hotel industry has been influenced by factors such as infrastructure limitations, digital literacy rates, and the unique characteristics of the tourism market in different regions. Countries like South Africa and Kenya have emerged as leaders in technology adoption within the African hospitality sector, leveraging advancements in information technology to enhance guest experiences and operational efficiency (Buhalis & Mamalis, 2021).

In East Africa, excluding Uganda, the adoption of technology in the hotel industry has been gaining momentum in recent years, albeit at a slower pace compared to other regions. Countries like Tanzania and Rwanda have made significant strides in upgrading their hospitality infrastructure and embracing digital innovations to attract tourists and enhance destination competitiveness (Mohammed, Rashid, & Hashim, 2020).

In Uganda, the adoption of technology in the hotel industry has been characterized by a gradual shift towards digitization driven by increasing internet penetration and government-led initiatives to promote tourism development (WTTC, 2019). While larger hotels in cities like Kampala and Entebbe have embraced technology solutions such as PMS and online booking platforms to streamline operations and attract international guests, smaller establishments in rural areas continue to face challenges related to connectivity and affordability (Ministry of Tourism, Wildlife and Antiquities, 2019).

Technological Adoption

Technology adoption, according to Rogers (2020), is the process through which individuals or organizations accept and integrate a new technological innovation into their routine practices. This concept involves the stages of awareness, interest, evaluation, trial, and adoption, wherein potential adopters gradually move from initial exposure to full utilization of the technology. In the study, technology adoption was measured in form of property management system, mobile applications and online booking platforms.

A Property Management System (PMS) is to a software application used by hotels to manage various aspects of their operations, including reservations, check-ins and check-outs, room assignments, billing, housekeeping, and guest preferences (Kasavana & Brooks, 2018). Mobile applications refer to software programs designed for smartphones and tablets that offer functionalities relevant to hotel guests and employees. These applications may include features such as mobile check-in and check-out, room key access, concierge services, dining reservations, and loyalty program management (Sigala, 2023). Online booking platforms encompass websites and mobile applications that allow travelers to search, compare, and reserve hotel accommodations over the internet. These platforms provide a user-friendly interface for guests to browse hotel options, view room availability and rates, read reviews, and make secure bookings online (Sigala, 2023).

Innovative Work Behavior

Scott and Bruce (2021) conceptualize innovative work behavior as the proactive and intentional efforts of employees to introduce new ideas, processes, products, or services that contribute to organizational effectiveness and competitiveness. Janssen (2020) looked at innovative work behavior as the cognitive, motivational, and contextual factors that influence employees' propensity to engage in innovative activities. West and Farr (1990) describe innovative work behavior as the generation and implementation of novel ideas and solutions by individuals or teams to improve organizational processes, products, or services. The concept encompasses activities such as problem-solving, experimentation, knowledge sharing, and collaboration with colleagues and stakeholders to generate and implement novel ideas (Scott & Bruce, 2021).

In Uganda, the hotel industry has been striving to foster innovative work behavior among employees amidst various challenges, including limited access to resources and infrastructure constraints. Historically, hotels in Uganda have relied on traditional hospitality practices, but there is a growing recognition of the need for innovation to remain competitive in the global market (Kamuze, 2020). Hotels located in the capital city of Kampala, the exploration of innovative work behavior presents a significant challenge due to the limited availability of empirical evidence on key aspects such as idea generation, idea promotion, and idea implementation (Carmeli & Paulus, 2021). Despite the growing recognition of the importance of innovation in enhancing organizational performance and competitiveness, research specifically focusing on innovative work behavior within the Ugandan hotel industry remains scarce (Kamuze, 2020).

General Objective

The main objective of the study was to examine the relationship between technology adoption and innovative work behaviors in Five Selected Hotels in Kampala City, Uganda.

Specific Objectives

1. To examine the relationship between Property Management Systems and Innovative Work Behavior in selected hotels in Kampala City.
2. To assess the relationship between Mobile Applications and Innovative Work Behavior in selected hotels in Kampala City.
3. To analyze the relationship between Online Booking Platforms and Innovative Work Behavior in selected hotels in Kampala City.

Methodology

A cross-sectional research design was adopted for this study because it facilitates collecting data from a sample of participants at a single point in time, allowing for a snapshot of the variables of interest and their associations (Dermatol, 2020). The study used quantitative and qualitative research which is generally associated with the positivist paradigm. It involved collecting and converting data into numerical form hence use of statistical calculations where conclusions were drawn.

The qualitative approach quantified response in non-numerical and helped the study to gather data from the five selected hotels to establish the status quo by interacting with members of management. Quantitative approach quantified responses in numerical to generate inferential analysis. A population of 291 was used which comprised members of the selected hotels (Serena Hotel, Protea Hotel by Marriot,

Fairway Hotel, Kabira Country Club and Mestil Hotel). Respondents include the Managers, supervisors, and frontline staff of the selected hotels. Units of analysis are hotels and units of inquiry were managers and other staff selected to participate in this study.

Out of 291, a sample size of 233 (including 223 quantitative and 10 qualitative) was selected from the members of the selected hotels (Krejcie & Morgan, 1970). Sampling is the process of choosing a target population to be used in the study of a given phenomenon (McCombe (2019). Purposive and random sampling methods were employed to select the population of the study for better results. In this study, primary data was collected directly from primary sources with the aim of gathering richness of information from most reliable and informed respondents about the current situation of the study problem. The current study gathered information from secondary sources because it has a pre-established degree of validity and reliability which need not to be re-examined by the researcher.

Key informants were selected using a purposive sampling to identify them at the selected hotels. The study adopted a simple random sampling technique which provided an equal chance for hotels to be selected for the study to support a comprehensive collection of the data for the study.

The tools used for data collection were questionnaires, interview guide, and observation checklist. Data was collected from the selected hotels, these include; Serena Hotel, Protea Hotel by Marriot, Fairway Hotel, Kabira Country Club and Mestil Hotel.

Quantitative data were analyzed using the Statistical Package for Social Sciences (SPSS version 23.0) to generate descriptive statistics in form of univariate and inferential statistics in form of bivariate and multivariate to establish the relationship between variables. The Pearson coefficient was used to determine the strength of the relationship between the independent and dependent variables of the study. Regression analysis was established to examine the relationship between Property Management Systems and Innovative Work Behavior in selected hotels in Kampala City.

Qualitative data analysis starts at the beginning of the research project and not at the end of data collection as was the case with quantitative data analysis Neumann, (2007). It involved; thematic analysis, context analysis, and content analysis where themes that come in the topic were discussed, then familiarization with data collected from the field was followed based on the notes and interview scripts, classifying major issues covered, summarizing the findings, and coding the different sections of data relevant to the study.

The overall Content Validity Index (CVI) of 0.862 and 0.800 was achieved which guaranteed the validity of data as recommended by Robert Heale (2022), who argued that content validity of 0.70 measures the degree to which the test measures or is specifically related to the traits for which it was designed. The study followed standard ethical considerations including confidentiality, consent, anonymity, informed consent of the participants, and objectivity during and after the study**.**

Table 1: Reliability and validity Results

	Cronbach's Alpha	**No of Items**	**Content Validity Index**
Technology Adoption	.895	29	.862
Innovative Work Behavior	.862	10	.800

Source: Field Data, 2024

The results are clear that the reliability and the validity estimates of the study were all within the acceptable thresholds since both the Technology adoption and the Innovative Work Behaviour both had the Cronbach

Alpha coefficient and the Content validity Index values, respectively which were above 0.700. The results research instrument could therefore be used.

RESULTS AND DISCUSSION

Data collected were analyzed to obtain univariate statistics on technology adoption and innovative work behavior in the five selected hotels, bivariate with Pearson's correlation coefficient, and multivariate models of analysis for regression tests. 233 questionnaires were filled and returned for analysis which gave a response rate of 80.1% for the study. It indicates that 68 (59.0%) were male and 48 (41%) were female. This, therefore, males dominated the sample 143(61.4%) and the females were the minority 90(38.6%). The results show that in the hotel in study, there is a higher chance for males than females. This is often evident when it comes to employing chefs, many hotels have male chefs.

Property Management System and Innovative Work Behavior in the Selected Hotels

Table 2: Descriptive Statistics on PMS and Innovative Work Behavior

Property Management Systems	N	Mean	Std. Dev	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
The hotel PMS provides customizable reporting tools to analyze data.	233	3.87	1.050	10 4.3%	20 8.6%	20 8.6%	89 38.2%	94 40.3%
Integration with mobile devices enables staff to adapt quickly to changing situations	233	3.74	1.033	9 3.9%	17 7.3%	30 12.9%	95 40.8%	82 35.2%
Hotel has regular software updates to introduce new features with improved functionalities.	233	4.22	1.240	7 3.0%	14 6.0%	20 8.6%	95 40.8%	97 41.6%
The system offers collaborative workspaces for cross-departmental innovation.	233	4.12	1.015	5 2.1%	10 4.3%	22 9.4%	120 51.5%	76 32.6%
The hotel offer interactive training modules to empower employees to learn and apply new techniques.	233	3.90	1.063	5 2.1%	5 2.1%	20 8.6%	121 51.9%	82 35.2%
Hotel has real-time communication features to encourage spontaneous idea-generation.	233	3.74	1.018	7 3.0%	14 6.0%	29 12.4%	99 42.5%	84 36.1%
The system is user-friendly to reduce administrative burdens.	233	3.85	1.063	11 4.7%	8 3.4%	21 9.0%	105 45.1%	88 37.8%
Hotels integrate IoT devices to allow data-driven decision-making.	233	3.87	1.270	6 2.6%	16 6.9%	41 17.6%	91 39.1%	79 33.9%
Hotels have engagement within the system to explore creative solutions.	233	3.40	1.270	8 3.4%	13 5.6%	35 15.0%	107 45.9%	70 30.0%
The hotel system supports integration with third-party apps and services to expand innovative workflows.	233	3.87	1.087	2 1%	15 6.4%	41 17.6%	102 43.8%	73 31.3%
Valid N (listwise)	233							

Source: Field Data, 2024

Results in table 2 presents that 183(78.5%) agreed with a mean of 3.87 and standard deviation of 1.050 that the hotel PMS provides customizable reporting tools to analyze data; 177(76%) agreed with a mean of 3.74 and standard deviation of 1.033 that integration with mobile devices enables staff to adapt quickly to changing situations; the majority192(82.4%) agreed with a mean of 4.22 and standard deviation of 1.240 that hotel has regular software updates to introduce new features with improved functionalities; 196(84.1%) agreed with a mean of 4.12 and standard deviation of 1.015 that the system offers collaborative workspaces for cross-departmental innovation; 203(87.1%) agreed with a mean of 3.90 and standard deviation of 1.063 that the hotel offer interactive training modules to empower employees to learn and apply new techniques; the majority 183(78.6%) agreed with a mean of 3.74 and standard deviation of 1.018 that hotel has real-time communication features to encourage spontaneous idea-generation; 193(89.2%) agreed with a mean of 3.85 and standard deviation of 1.063 that the system is user-friendly to reduce administrative burdens; 170(73%) agreed with a mean and standard deviation that hotels integrate IoT devices to allow data-driven decision-making; 177(75.9%) agreed with a mean of 3.40 and standard deviation that hotels have engagement within the system to explore creative solutions and 175(75.1%) agreed with a mean of 3.87 and standard deviation of 1.087 that the hotel system supports integration with third-party apps and services to expand innovative workflows.

Table 3: Correlation between PMS and Innovative Work Behavior

		Property Management Systems	Innovative Work Behavior
Property Management Systems	Pearson Correlation	1	.515**
	Sig. (2-tailed)		.000
	N	233	233
Innovative Work Behavior	Pearson Correlation	.515**	1
	Sig. (2-tailed)	.000	
	N	233	233
**. Correlation is significant at the 0.05 level (2-tailed).			

The Pearson correlation result revealed a positive relationship between Property Management Systems (PMS) and Innovative Work Behavior (r=.515, P<0.05). This reveals that property management systems contribute to the innovative work behavior in selected hotel Kampala City. The Pearson correlation results revealed that a well-implemented Property Management System (PMS) significantly enhance innovative work behavior in the selected hotels by streamlining operations, providing valuable data, and freeing up time for creative and strategic activities.

Regression Analysis on PMS and Innovative Work Behavior in the selected hotels

The study tested the regressions on Property Management Systems (PMS) and Innovative Work Behavior in the selected hotels in Kampala City. Based on the regression findings and analysis, the study sought to determine the influence of PMS on Innovative Work Behavior in the selected hotels in Kampala City. Results of model summary, ANOVA and coefficients were used to test the relationship between the variables.

Model Summary on PMS and Innovative Work Behavior in the selected hotels

The regression findings of model summary explain the variances in the dependent variable and independent variable. The findings in table 4 show that property management systems (PMS) is well applied in the selected hotel in Kampala City. The coefficient of determination, R-square value of 0.265 or 26.5% was computed. This R square value of 0.265 meant that only 26.5% of the variations in dependent variable (innovative work behavior) were explained by an independent variable (PMS) whereas the remaining 73.5% variations were explained by other factors other than the one mentioned in the study.

Table 4: Model Summary on PMS and Innovative Work Behavior in the selected hotels

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.515[a]	.265	.262	.83.185
a. Predictors: (Constant), Property Management Systems				

Analysis of Variance (ANOVA)

The findings in the table 5 reveal that the relationship between PMSs and Innovative Work Behavior was statistically significant, F=83.185, P<0.05. This means that property management system was a good predictor of innovative work behavior in Serena Hotel, Protea Hotel by Marriot, Fairway Hotel, Kabira Country Club and Mestil Hotel.

Table 5: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.996	1	10.996	83.185	.000[b]
	Residual	32.793	232	.364		
	Total	43.789	233			
a. Dependent Variable: Innovative Work Behavior						
b. Predictors: (Constant), Property Management Systems						

Based on the significance of the F-statistic, the null hypothesis, property management systems have no significant influence on innovative work behavior in the selected hotels in Kampala City was rejected. Therefore, the study concluded that property management systems predict innovative work behavior in the selected hotels in Kampala City.

Coefficients on PMS and Innovative Work Behavior in the selected hotels

In table 6, the coefficient test result shows that property management systems significantly contributes to innovative work behavior in Serena Hotel, Protea Hotel by Marriot, Fairway Hotel, Kabira Country Club and Mestil Hotel as reflected with Beta value=.515, t-statistics =15.648, P<0.05. This reveals that effective implementation of property management system will have a positive impact on innovative work behavior.

Table 6: Coefficients on PMS and Innovative Work Behavior in the selected hotels

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.661	.170		15.648	.000

	Property Management Systems	.378	.041	.515	9.121	.000
a. Dependent Variable: Innovative Work Behavior						

Discussion of Findings

The relationship between PMSs and Innovative Work Behavior

The Pearson correlation result revealed a positive relationship between Property Management Systems (PMS) and Innovative Work Behavior (r=.515, P<0.05). This reveals that property management systems contribute to the innovative work behavior in selected hotel Kampala City. The Pearson correlation results revealed that a well-implemented Property Management System (PMS) significantly enhance innovative work behavior in the selected hotels by streamlining operations, providing valuable data, and freeing up time for creative and strategic activities. The Pearson correlations findings were supported by the works of (Ghobakhloo and Ching, 2019) which suggest that the use of Property Management systems enables the management to think outside of the box and come up with ways of improving productivity by assigning employees tasks which may not have been thought of before in the industry.

The regression findings of model summary explain the variances in the dependent variable and independent variable. The findings show that property management systems (PMS) is well applied in the selected hotel in Kampala City. The coefficient of determination, R-square value of 0.265 or 26.5% was computed. This R square value of 0.265 meant that only 26.5% of the variations in dependent variable (innovative work behavior) were explained by an independent variable (PMS) whereas the remaining 73.5% variations were explained by other factors other than the one mentioned in the study. This notion is also supported by the works of Alcacer and Cruz-Machado, (2019) whose study indicates that the numerous benefits that come with the digitisation of the hotel industry and usage of tools such as the property management system ultimately enable the productivity and innovativeness of the workers. These are among the many rewards that come with the use of the Property management systems.

The ANOVA results reveals that the relationship between PMSs and Innovative Work Behavior was statistically significant, F=83.185, P<0.05. This means that property management system was a good predictor of innovative work behavior in the selected hotels in Kampala City. the coefficient test results shows that property management systems significantly contributes to innovative work behavior in the selected hotels in Kampala City as reflected with Beta value=.515, t-statistics =15.648, P<0.05. This reveals that effective implementation of property management system will have a positive impact on innovative work behavior. These findings were in agreement with the study of Hoffman and Rusch (2017) which also affirms that Property Management Systems (PMS) play a crucial role in the operations of hotels, and their impact on innovative work behavior is increasingly significant. They added that by automating routine tasks, PMS allows employees to spend less time on administrative work and more time on creative problem-solving and innovative tasks.

Conclusions

The study concluded that the Property Management Systems reliably improve the Innovative Work Behavior. Improving Property Management Systems (PMS) and fostering innovative work behavior in hotels are interconnected goals that drive operational excellence and guest satisfaction. By enhancing PMS functionalities and adopting strategies that encourage creativity and continuous learning, hotels optimize

their operations and develop innovative solutions that set them apart in the competitive hospitality industry.

Recommendations

The study recommends that hotels should ensure seamless integration between PMS, Customer Relationship Management (CRM) systems, and online booking engines. This should provide a unified view of guest data and booking information, streamlining operations and enhancing data accuracy. Hotels should implement a PMS that offers mobile access for staff. This flexibility allows employees to manage tasks and access information from anywhere, enhancing operational efficiency.

Hotels should use PMS automation features to handle routine tasks such as guest check-ins/outs, invoicing, and housekeeping assignments. This reduces manual work and frees up staff time for more innovative activities. Hotels should also integrate automated communication tools within the PMS for sending confirmations, reminders, and personalized messages to guests.

References

1. Buhalis, D., & Amaranggana, A. (2021). Smart tourism destinations enhancing tourism experience through personalization of services. In Xiang, Z., & Tussyadiah, I. (Eds.), Information and Communication Technologies in Tourism 2021 (pp. 377-389). Springer.
2. Carmeli, A., & Paulus, P. B. (2021). CEO ideational facilitation leadership and team creativity: The mediating role of knowledge sharing. The Journal of Creative Behavior, 49(1), 13-28.
3. Janssen, O. (2020). Job demands, perceptions of effort-reward fairness and innovative work behaviour. Journal of Occupational and Organizational Psychology, 73(3), 287-302.
4. Lee, J. Y., & Kim, J. Y. (2019). The effect of mobile application usage on employees' job satisfaction and organizational commitment in the hospitality industry. Journal of Hospitality and Tourism Technology, 10(1), 128-139.
5. Ministry of Tourism, Wildlife and Antiquities. (2019). Uganda tourism sector performance report 2018/2019. Ministry of Tourism, Wildlife and Antiquities.
6. Mohammed, S. I., Rashid, M., & Hashim, N. A. (2020). Use of information and communication technology (ICT) in the hospitality industry: A case of Tanzania Tourist Board (TTB). Journal of Global Business and Social Entrepreneurship (GBSE), 2(4), 79-86.
7. World Travel & Tourism Council (WTTC). (2019). Travel & tourism economic impact 2019 Uganda. World Travel & Tourism Council.
8. Rogers, E. M. (2020). Diffusion of innovations (5th ed.). Free Press.
9. Kamuze, I. (2020). Challenges and solutions to sustainable tourism development in Uganda. Sustainability, 12(10), 4105.
10. Scott, S. G., & Bruce, R. A. (2021). Determinants of innovative behavior: A path model of individual innovation in the workplace. Academy of Management Journal, 37(3), 580-607.
11. West, M. A., & Farr, J. L. (1990). Innovation at work: Psychological perspectives. Social Behaviour, 5(1), 15-30.