



INFLUENCE OF TECHNOLOGY AND INNOVATION ON PERFORMANCE OF BAR AND RESTAURANT BUSINESSES IN NAIROBI COUNTY, KENYA DURING COVID-19 CRISIS

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Abstract:

The recent Covid-19 crisis has wreaked havoc on the performance of businesses in the whole world. The most hit is the hospitality industry, especially the bar & restaurant businesses, which are considered high human density areas. This study sought to examine the influence of technology & innovation as a survival strategy on the performance of bars & restaurants in Nairobi County, Kenya, in the face of the Covid-19 pandemic. The study was based on diffusion of innovation theory and business resilience theory. The population under study was a total of 6,383 licensed bar & restaurant businesses in Nairobi County. The study adopted a survey design and a sample of 100 dive bars & restaurants that was representative of the whole population was selected. The data were analyzed using descriptive statistics and multiple linear regression models and used textual explanation, and charts to present the results. The study achieved a response rate of 89%, which was sufficient for generalization. The study found that the crisis had a major negative impact on profitability, staff reputation, supplier relationship, compliance and public reputation. It also noted that there was a loss of jobs and revenue from the establishments due to the crisis. The study noted that technology & innovation had a significant negative influence on business performance when adopted during a crisis. The study recommended that the government consider allocating a stimulus package to cushion businesses during the crisis as the finding noted the loss of revenue and massive job losses in the sector. Secondly, the government and investors should have a general crisis management policy for bar & restaurant businesses during the crisis as the study noted that performance was affected negatively attributable to non-preparedness or lack of policy. The study further recommended that the investors adopt mission-critical strategies earlier in their business cycle as opposed to adopting them only during a crisis, as the study noted that adopting rush strategies does not yield any positive influence on the performance. For the scholars, the study also recommended a further exploratory study on more factors influencing the performance of bar &

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restaurant businesses during crisis so that the subsequent studies will have an exhaustive list of strategies to examine.

JEL: L10; L20; J10

Keywords: bar and restaurants, survival strategies, business performance, technology and innovation, Covid-19-pandemic

1. Introduction

A crisis is a negative change in human or environmental affairs, especially when they happen suddenly, with little warning. It comes in different forms including natural disasters, pandemics, system crashes, power outages, sudden policy changes etc. It is not planned and as such mostly leads to instability and disruption of business operations of the affected industries. For some industries, it leads to a business boom, making businesses realize unplanned reaps. McKinsey (2021) noted that the e-commerce industry experienced ten (10) years of equivalent growth within less than a year of the Covid-19 crisis. The crisis is significant to business operations and there is a need to factor it into the corporate strategies to maintain a sustainable competitive advantage.

The most recent crisis, which affected the whole world economy, is the Covid-19 pandemic, which has seen some of the world's promising industries plummet to the ground. Only resilient businesses have had to cope with the disruption. *"As of August 4th 2020, Covid-19 had claimed more than 694,000 lives worldwide with 18.3 million reported cases"* (Quaife, M., van Zandvoort, K., Gimma, A. et al., 2020).

The liquor industry like any other industry is a vibrant industry that cannot be ignored. The industry offers both indirect and direct employment to a big percentage of the Kenyan population starting from the wheat farms, which form the main raw material used for manufacturing alcoholic drinks, to waiters, who are the main sales and service people to the end consumers. For that reason, like any other business, the liquor joints are also bound to be affected by any crisis affecting the livelihood of the population. According to Business Daily (2019), the leading Kenyan beer manufacturer EABL paid a whopping Kshs 64billion to the exchequer in 2018.

The underperformance of the bar & restaurant businesses brought about by the pandemic necessitated this study. The study identified the bar & restaurant businesses that survived the pandemic and examined the survival strategies they adopted to remain afloat in the market despite the disruption encountered. This provided insight to current and future businesses on the best strategies they can employ to survive the economic downturn.

The study was based on the diffusion of innovation theory (Rogers, E., 2003) and the organization resilience theory (Sutcliffe, K. M., 2003). The diffusion of innovation theory describes how new ideas spread and become accepted.

According to Roger, E. (2003), when a crisis strikes a few people initially adopt innovations to deal with disruptions. He argues that when about 20% of the managers adopt certain innovations or new ways in the face of crisis, the remaining 70% would definitely adopt it. Efforts to change behavior and attitudes in times of emergencies have influenced the management of crises by identifying behaviors/ideas which can be easily changed/ adopted and influencing others to do so. Resilience theory originated from child psychology and holds that building protective factors helps people survive disruptions with fewer casualties. In management, resilience theory brought about business continuity planning, thereby making organizations more resistant to failure in times of crisis by anticipating disruptions and defining action that can bring normalcy back.

According to Buzzanell, P. M. (2010), the five elements that businesses need to cultivate to strengthen their recovery process are: *“crafting normality, affirming identity anchors, making use of communication networks, putting alternative logic to work, and emphasizing positive feelings while downplaying negative ones”*. He posited that technology-enabled innovations are key to creating business continuity plans.

The main objective of the study was to assess the influence of technology & innovation on the performance of bars & restaurants during the crisis in Nairobi County, Kenya.

2. Literature Review

2.1. Technology & Innovation

Innovation is a way firms increase their performance in the market by adding value to their product or service offerings. They can do this by adding new electronic payment methods, modifying their products to conform to recent technological developments, and accepting real-time orders by going online. Most firms do this by investing in R&D and also in technology. Innovation is a direct result of human resources and an indirect result of being abreast of technology. It, therefore, means that for innovation to be realized, the organization needs to have the right skills, which are creative and futuristic in their thinking.

According to Lau (2020), the challenges associated with the Covid-19 have caused several restaurants to re-invent their business structure and narrow their product offerings. Most hotels have shifted focus from sit-in to food delivery in Guangzhou, China. Some hotels have adopted the use of robots for room services to promote social distancing. They have also intensified marketing through technology via social media platforms. It, therefore, means that the pandemic has forced the industry to change its business model to concentrate on ways which minimize physical contact.

A study by Al-Ansari et al. (2013) revealed that technology inclination affects behaviors and tendencies concerning innovation in a market and that's the link between technology and innovation. Innovation should be considered as a mediator to technology inclination if better business performance is to be achieved.

As Am et al. (2020) put it, innovation during crises has made many businesses change their business models. For example, most businesses which required in-person or face to face meeting or sales has evolved so fast to the extent that people are now comfortable with the virtual meeting, which poses a lot of savings to most entities. The Covid-19 crisis also catalyzed firms to innovate new offerings in order to remain afloat. The scholars found out that food suppliers, which conventionally supplied restaurants, are now establishing direct sales channels to consumers, minimizing the multiple physical contacts to the full business cycle. They concluded that crises are triggers for innovation; making impossibilities to sublime very fast.

A summary of the literature reviewed indicate that the use of technology & innovation boosts business performance positively. In times of crisis like Covid-19, most businesses re-invented their business models to conform to the new “normal” in order to sustain them and survive the economic downturn. Businesses should consider employing people with the right skills to nurture innovation.

The literature reviewed did not tell us how the adoption of technology & innovation during the crisis by bar & restaurant owners influences the business performance, which necessitated this study.

2.2. Key Variables

The independent variable for the study was the extent of technology & innovation use during the crisis and the dependent variable was the performance of the bar & restaurant business. Bar & restaurant businesses which invest more in technology and apply up-to-date technology in delivering services were more likely to be frequented by patrons considering the turnaround time for value delivery. The unique crisis presented by Covid-19 necessitated a quick service to avoid unnecessary physical contact, which in turn was envisaged to translate into business performance. The performance of the business was measured in terms of profitability, staff reputation, supplier relationship, compliance and public reputation. The composite value generated by these various components represented the value for the dependent variable, business performance.

3. Research Methodology

3.1. Research Design

The study adopted a survey design, which is a descriptive research design where the characteristics of the population to be observed are first described then a representative sample is taken for the study. The justification for adopting this kind of design was that the study subjects were in their natural normal business environment, and the characteristics observed or surveyed were more quality and enriching without any external influence. Secondly, the survey design was non-invasive and therefore did not interfere with the normal operation of the businesses.

3.2. Population and Sample Size

Table 1: Population and Sample Size

	Sub County	Population	Sample
1	Dagoretti North	318	5
2	Dagoretti South	382	6
3	Embakasi Central	446	7
4	Embakasi East	321	5
5	Embakasi South	192	3
6	Embakasi North	383	6
7	Embakasi West	766	12
8	Kamukunji	254	4
9	Kasarani	190	3
10	Kibra	193	3
11	Langata	384	6
12	Makadara	894	14
13	Mathare	256	4
14	Roysambu	323	5
15	Ruaraka	444	7
16	Starehe	254	4
17	Westlands	383	6
	Total	6,383	100

The population under study was bar & restaurant businesses operating within the boundary of Nairobi County. The data from Nairobi County Government Information Systems indicate that there are 6,383 licensed bar & restaurant businesses (Nairobi County Government, 2021). The study considered dive bars, commonly known as neighborhood bar & restaurants or “locals”. The study opted to consider only the licensed bar & restaurant businesses to win acceptance from proposed respondents.

The researcher used simple random sampling. According to Kothari & Gaugav (2019), this type of sampling is also called chance sampling where each and every item in the population has an equal chance of inclusion in the sample, and each sample has an equal probability of being selected. The researcher identified 100 licensed bar & restaurant businesses within Nairobi County to participate in the survey as follows: The rationale was that the researcher only considered dive (neighborhood) bars to participate in the study.

3.3. Data Collection Methods

The researcher used questionnaire administration, where a number of simple, clear and comprehensible questions conforming to the research objectives were formed. The questionnaire majorly consisted of closed-ended questions and a few open-ended questions to get more insights or information to understand the variables further. To ensure reliability, the researcher used triangulation. According to Gideon (2012), triangulation is a technique where the researcher uses different data collection methods to examine the same concept or idea. It improves the validity and reliability of a study

and increases the confidence level when the same result is arrived at with different methods. To this end, the researcher also adopted the anonymous observation method to help in the verification of the already filled questionnaires. This ensured reliability was achieved. The observation was also used to help complete the incomplete questionnaires.

3.4. Data Analysis

The researcher checked the collected data for completeness and non-response. The data was then edited to ensure consistency and uniformity. This helped ease coding and tabulation. Identified missing data was completed after successful observation, which formed the backup data collection method for this study.

The researcher used descriptive statistics to analyze qualitative data. The relationship between the independent and dependent variables was analyzed through multiple linear regression models.

4. Findings and Discussion

4.1. Response Rate

The researcher distributed 100 questionnaires to the target population. The questionnaires that were returned were 89, leading to a response rate of 89%. According to (Gathii et al., 2019), a response rate of 80% is determined as being adequate for a study and minimization non-response bias. The response rate of 89% having surpassed the minimum response rate of 80% was thus deemed sufficient for the study and was thus utilized for the study.

Table 2: Response Rate

Distributed Questionnaires	Returned Questionnaires	Response Rate
100	89	89%

4.2. Demographic Data

The business profile is important to establish if the characteristic of the business can influence the strategies it adopts in the face of disruptive crises. 25% of the businesses surveyed had been in operation for less than 5 years, with 75% being in operation for more than 5 years. This is a considerable time for businesses to adopt a survival strategy in times of a crisis. 62% were sole proprietorship type of businesses, 31% partnership while only 7% were companies. This indicates that most strategies adopted in the businesses emanated from individuals' decisions as opposed to structured strategy design

More than 85% (27% +58%) of the respondents surveyed were either owners or managers of the business, meaning they were part of the top management of the enterprises. The study noted that 39% of the respondents surveyed had more than 10 years of experience in running the bar & restaurant businesses, with 48% having between 5-10 years of experience. Only 12% had less than 5 years of experience. 93% of the

respondents were aged over 30 years. This analysis indicates that most respondents had considerable authority, knowledge and experience to correctly respond to the survey.

Table 3: Years in Operation

	Population	Sample
Less than 5	22	24.7
5-10 Years	38	42.7
More than 10 Years	29	32.6
Total	89	100.0

4.3. Technology & Innovation

The extent to which the businesses used various technology & innovation components during the Covid-19 crisis was examined. The study found that the online orders were Rarely used (M=2.42, SD=1.355). However, there was a lack of consensus with respect to these results due to a huge standard deviation. The telephone order was used Often (M=3.87, SD=1.170) during the Covid-19 crisis. This is further demonstrated by frequency distributions of 4.5%, 9.0%, 21.3%, 25.8%, and 39.3% of the respondents who chose Never, Rarely, Sometimes, Often and Always respectively. The study further noted that the home/office deliveries were Sometimes (M=3.30, SD=1.210) used during the crisis. This was demonstrated by a percentage of 33.7% of the respondents who chose sometimes which was the highest response option amongst the options for the indicator. The respondents were also asked whether payment options other than cash were used during Covid-19. The study found that these options were Always (M=4.42, SD=0.823) used. Finally, the respondents were asked whether the other innovative services were used by the businesses during the Covid-19 crisis. The study noted that businesses Sometimes (M=3.02, SD=1.243) used innovative services.

The influence of technology & innovation on the businesses performance were examined, with online orders leading with No Effect (M=3.24, SD=0.966) in business performance; telephone orders leading with Positive influence (M=3.99, SD=0.911) in business performance; Home/office delivery services leading with Positive (M=3.58, SD=0.850) influence to business performance; payment options other than cash leading with Very Positive (M=4.43, SD=0.737) influence to business performance and other innovative services leading with Positive (M=3.58, SD=0.704) influence on business performance. There was a moderate consensus on the role of the services on the business performance with the standard deviations being between 0.5 and 1 across the metrics.

Table 4: Extent of Technology & Innovation Adoption

	Never	Rarely	Sometimes	Often	Always	Total	
	Freq.	Freq.	Freq.	Freq.	Freq.	Mean	Standard Deviation
	%	%	%	%	%		
Online order	36 40.4%	11 12.4%	14 15.7%	25 28.1%	3 3.4%	2.42	1.355
Telephone order	4 4.5%	8 9.0%	19 21.3%	23 25.8%	35 39.3%	3.87	1.170

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Home/office delivery services	10 11.2%	9 10.1%	30 33.7%	24 27.0%	16 18.0%	3.30	1.210
Payment options other than cash	1 1.1%	3 3.4%	4 4.5%	31 34.8%	50 56.2%	4.42	.823
Other innovative services	18 20.2%	11 12.4%	13 14.6%	45 50.6%	2 2.2%	3.02	1.243

4.4. Linear Regression Analysis

The study carried out a regression analysis to analyse the existing relationship between the independent and dependent variables. From the linear regression tests, the results captured were presented in the model summary table. The model summary table was used to help in assessing the variability factor on the influence of independent variables on the shift in the dependent variable. According to (Helmreich, 2016), the correlation coefficient is used to detail the association between the independent variables and dependent variables. The study achieved a correlation coefficient R of 0.392 indicating that there was a weak positive correlational association of combined variables (social media adoption, diversification adoption, and technology & innovation adoption) on the performance of bar & restaurant businesses within Nairobi County during the crisis. (Wheaton & Young, 2020) noted that the adjusted R square is used for detailing the variance of the dependent variable that is attributable to the independent variable. In this context, the adjusted R square that was achieved was 0.124 indicating that 12.4% of the variance in the dependent variable was attributable to the combined independent variables of social media adoption, diversification and use of technology. This would imply that 87.6% of the variance in the performance of bar & restaurant businesses was due to other factors that were not in the scope of the model. Table 2 below shows the model summary table.

Table 2: Regression Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.392 ^a	.154	.124	.43616

a. Predictors: (Constant), Social media adoption, Diversification strategy, Use of technology

This led to the next step analysis of variance (ANOVA) as shown in Table 3 below to examine the overall goodness of fit of the model. The study found that $F(3, 85) = 5.143$, $P = 0.03$ implying that the model was a good fit for data since the p-value is less than 0.05. The conclusion that the model is a good fit for data led to the examination of the t-tests and the regression coefficients.

Table 3: ANOVA

ANOVA ^a						
Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	2.935	3	.978	5.143	.003 ^b
	Residual	16.170	85	.190		
	Total	19.106	88			

a. Dependent Variable: performance of bar & restaurant businesses

b. Predictors: (Constant), Social media adoption, Diversification strategy, Use of technology

Whether the use of technology had a statistically significant influence on the performance of bar & restaurant businesses was examined using the t-test as shown in coefficients Table 4 below. The study found that the use of technology had a p-value of 0.007 which is lower than 0.05 leading to the conclusion that the use of technology had a statistically significant influence on the performance of bar & restaurant businesses. The study noted that the beta coefficients stood at -0.256 leading to the conclusion that a unit change in the use of technology led to a negative influence on the performance of bar & restaurant businesses to the magnitude of 0.256. This means that as bar & restaurant businesses used more technology & innovation during crises, their performance also reduced. The indicators of this variable were online order, telephone order, home/office delivery services, payment options other than cash, and other innovative services. According to the survey, it, therefore, implied that the introduction of these services impacted negatively the performance of the business during a crisis.

Table 4: Coefficients

Coefficients ^a		Unstandardized		Standardized	t	Sig.
Model		B	Std. Error	Coefficients Beta		
1	(Constant)	3.118	.315		9.914	.000
	Use of technology	-.256	.093	-.315	-2.748	.007
	Diversification strategy	-.126	.070	-.196	-1.816	.073
	Social media adoption	.086	.056	.167	1.524	.131

a. Dependent Variable: Survival of bars and restaurant businesses

5. Conclusion and Recommendations

5.1. Conclusion

The researcher concluded that the adoption of technology & innovation in bar & restaurant businesses yields positive results in the face of crisis. However, these positive results do not necessarily contribute to the performance of the businesses. In general, the study concluded that the adoption of technology & innovation during a crisis influences performance negatively. This could only be explained that during the crisis, funds should be channeled to more critical business units/services as opposed to innovation. When funds are channeled to innovation, it would hinder mission-critical projects thereby negatively impacting the performance of the business.

5.2. Recommendations

The researcher recommended that technology & innovation should be adopted at an earlier stage to be significant to the performance of the enterprises, as the study noted that adoption of this strategy during a crisis did not yield any significant influence on the performance of the establishments.

Secondly, the researcher noted that the performance of bar & restaurant businesses during the crisis was due to other factors beyond the scope of this study. The researcher, therefore, recommended an exploratory study of factors that influence the performance of bar & restaurant businesses during the crisis. This would enable scholars to exhaust all the variables associated with the performance of the businesses and do an elaborate examination study on them.

6. Limitations of the Study

According to Simon (2011), limitations are potential weaknesses in a study that is out of the researcher's control. The main limitation of this study was the limited time and budget for this academic research. This in turn necessitated the selection of a smaller sample size of 100, which was considered insufficient, just to fit into the available budget. The sample size may not be sufficient enough for generalization.

Limited studies in the research area are another main drawback. The researcher's main reference for the study is the Covid-19 pandemic, which was a relatively new area in the research arena. The study was on examination of survival strategies influencing the performance of bar & restaurant businesses during the crisis, with the Covid-19 pandemic crisis as the main reference point for consideration.

Difficulty in access to crucial data pertaining to the study was another drawback. The study involved getting some key statistical data from the county government of Nairobi and preliminary previous investigations by the researcher indicated reluctance to provide some of this information.

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Conflict of Interest Statement

The author declares no conflicts of interest.

About the Author

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