

Relevance of Artificial Intelligence (AI) in the Three Star Motels in Hospitality Industry for Sustainability

Authors:

Evelyn Kumbirai Tapfuma (etapfuma@buse.ac.zw)

Bindura University of Science Education, Bindura, Zimbabwe

Abstract:

The aim of the study was to produce a set of strategies on the factors that affect the employee's expectation in the six selected 3-star motels. The background of the study further highlighted some studies that were carried out by other researchers to find factors that affect customer's expectation on service quality. The studies carried out by these researchers pointed out lists of suggestions for future researchers to implement when do researches on good service quality. The studies main objective was to identify the employee's perceptions on (AI) artificial intelligence performance in 3-star motels, in Kwekwe, Zimbabwe. The literature review outlined detailed literature about service quality from a global perspective down to Zimbabwe. The literature reviewed different critics made by scholars which explains employee perceptions on the effects of (AI) artificial intelligence in purchasing and supply this study seeks to fill in the literature gap. Implementation of the review was also discussed. The population was 80 and the sample size was 60 respondents being the chefs, human resources personnel, cleaners, management personnel, directors and general cleaners. Mixed research method was used in the research and quantitative data was analysed and qualitative data was analysed using thematic analysis. The research paper is in line with the sustainable development goals 3, 6, 8, 9, and 11.

Keywords:

Artificial Intelligence, Sustainability, Competition, Customer Satisfaction

Introduction

This study examines the employee's perceptions on artificial intelligence on purchasing and supply in the hospitality sectors. In hotel sector, artificial intelligence services is integral in satisfying the employees. An employee is delighted if the employee's perceptions and expectations are met or surpassed giving an unforgettable experience. The integration of AI in supply chain management has implications for employees within organizations. As AI technologies are implemented to optimize processes, employees may perceive these changes in different ways. Some employees may view AI as a tool that enhances their ability to solve problems efficiently and improve performance through intelligent automation and data-driven decision-making. However, others may have concerns about the impact of AI on their roles, job security, and the overall work environment. The use of AI in supply chain management raises ethical and regulatory considerations. The ethical implications of AI and intelligent robots are being discussed in the context of business operations, including supply chain management.

Additionally, regulators are considering the need for precise definitions of AI and issuing guidance to address legal uncertainties related to AI usage. As organizations continue to navigate the integration of AI in supply chain management, understanding and addressing employees' perceptions and concerns about AI technologies will be crucial for successful implementation and organizational effectiveness. Menberu (2017) did a study on the effects of artificial intelligence on employee's perceptions in 3 star hotels in Addis Ababa, Ethiopia "There is a lack of understanding among employee's in the supply chain sector about the impact of AI on their jobs, which is leading to resistance to the implementation of AI technologies and a lack of acceptance of the technology in the workplace. The problem statement is to assess the employee's' perceptions on the effects of artificial intelligence in supply chain management. The study will examine how AI is being used in the supply chain, the benefits and drawbacks of its use, and the employee's' perceptions of these effects. The aim is to gain a better understanding of the impact of AI on the workforce, and to recommend ways to mitigate any negative effects. Also the aims of the study were, to Increase employee's' understanding of AI and how it works, reduce employee's' discomfort or resistance to using AI, improve employee's' ability to use AI effectively, Increase efficiency and reduce costs for the hotel and lastly to improve customer satisfaction and loyalty. Not addressing the problem of employee perceptions of AI in the supply chain could have several implications. For one, it could lead to a lack of buy-in and resistance from employee's, which could hinder the implementation of AI technology. It could also lead to decreased efficiency, decreased productivity, and decreased customer satisfaction, as employee's might not be fully utilizing the capabilities of the technology. And it could ultimately lead to lost opportunities for the organization to gain a competitive advantage. This paper aims to identify the employee's perceptions on (AI) artificial intelligence performance in lodges above or with a three star in Kwekwe. The paper aims to recommend the ways to gap the relationship

between employee's perceptions of service quality and customer loyalty selected lodges in Kwekwe, through the following main research question. What are the key factors that contribute to good relationship between clients that leads high-quality guest experience at Holiday Inn due to introduction of AI?

Literature Review

This literature review aims to explore the theoretical literature surrounding the Employee perceptions on the effects of (AI) artificial intelligence in purchasing and supply by examining different theoretical frameworks, this review seeks to enhance understanding of the underlying mechanisms through which (AI) influences the supply chain. Understanding these theoretical perspectives can provide valuable insights for investors, policymakers, and researchers in developing Employee's perceptions on the effects of (AI) artificial intelligence in purchasing and supply. Theoretical literature refers to written works that present theories, concepts, and frameworks that explain or describe phenomena in a particular field of study according to Creswell (2014). It provides an abstract or conceptual understanding of a topic and helps to guide research and practice within a particular discipline. Theoretical literature typically includes academic books, journal articles, and other scholarly works that present theoretical perspectives, research methods, and analytical frameworks that are used to make sense of empirical data. The theories that will guide the study are the rational decision making theory, prospect theory, human capital theory and rational expectancy theory.

The Theory of Rational Expectations

The theory was developed by economists such as John F. Muth, Robert E. Lucas and Thomas Sargent. The theory assumes that economic agents that are consumers, firms and investors form expectations about the future based on all available information, including past data and any other relevant factors to make informed decisions about the future (Muth, 1961). They do not rely on simplistic or rule of thumb expectations but instead use complex forecasting models to make predictions about future economic outcomes. The model takes into account a wide range of factors including past data, economic indicators and policy changes. The theory suggests that economic agents are forward looking meaning that they base their expectations on their expectation of the future events through AI innovations, rather on the past events (Lucas, 2019). They are not influenced by past mistakes but instead focus on the future and what they expect to happen. One of the key implications of the theory is that it suggests that economic agents are able to anticipate and respond to changes in the economy in a rational and informed way.

The Balanced Score Card

The balanced scorecard (BSC) theory was first introduced in the early 1990s by Robert Kaplan and David Norton as a strategic management tool. The purpose of the BSC is to align a company's goals

and objectives with its vision and strategy by measuring performance across four categories: financial, internal business processes, learning and growth, and customer satisfaction. In a review of literature on the BSC theory, it has been found that the BSC approach has been widely adopted by organizations of different sizes and industries. Recent studies have examined the supply chains performance over the years. According to Trotter (2019), the supply chains in Zimbabwe has contributed significantly regional economic growth.

Methods and Data

This study used descriptive research design given the descriptive nature of the research. Descriptive research design identifies the main topic of the study and attempts to examine it using various presumptions and methodologies (Dave, 2016). In this particular paper, the study population is 80 participants that comprises of employees in the selected lodges and these include; chefs, general managers, cleaning staff, garden maintenance staff, procurement officers, human resources department and some directors. The researcher employed stratified random sampling method to obtain detailed information from the overall population. The study used interviews as data collection instrument. Data was collected by phone recorders and pointing down relevant information in the note book. The interview sessions were only for five minutes on each participant. The interviews were administered to the procurement officer/managers, general employees, chefs, human resources as well as the cleaning staff. This study also used questionnaires for data collection. The study researcher chose closed-ended questionnaires because there are easier and quicker to answer as respondents are already given a guide line of responses to select. The qualitative data was analysed using Nvivo and the quantitative data was analysed using the SPSS software.

Results

A total of 40 questionnaires and 20 interviews were administered by the researcher to the respondents and all of them were returned. Considering the response rate the study used accurate data which makes the results more reliable. Statistics shows that 64% percent of the respondents were female and 36% were man. This is because women are the ones who are mostly active in hospitality whilst a lot of man will be doing other activities. Fifty-four percent of the respondents are married, 10% are divorced, 21% are widows and only 14% are single. Statistics on table 4.2 show that those that are married take the most part of the respondents which shows the level of maturity which was involved in the study. Statistics obtained from this study show that of the total respondents, 10% were below the age of 25, 21% were aged between 26 and 30 years, 36% were between the age of 31 to 40 years, 24% were between the age of 41 to 50 years and 9% of the respondents was over 51 years in age. The study reveals that 33% of the respondents have been active for a year or less, 17% have a year or two years of participating,

21% have 2 to 3 years and 21% have 3 years and above which mostly constitute the pioneers in tourism industry. The statistics shows how much customers are appreciating the services they have at 3 star hotels Harare.

Results obtained from the study show that employees reached secondary level of education. 70% percent of the respondents reached secondary level and 20% of them reached tertiary level of education. Respondents were given a list of items that should be in a hotel room and were instructed to indicate the items that are mainly used in the hotel. All employee's (100%) mentioned that Internet and e-mail are widely used in hotels and guest rooms. The majority of employee's 85% stated that AI and ICT tools used in hotels and guest rooms triggered the alarm. Only a few (14%) said they never use it. When asked if their hotel uses the Fidelio or Opera operating systems, 77% said they use Fidelio and only 23% said they use Opera. Most of our staff have agreed to record daily arrivals and guest check-ins using one of our reception booking function, night housekeeping to take care of the cash register (invoicing) and financial reports, and finally housekeeping where housekeeping is done. Only 18% indicate that they do not use the function at the booking desk. Regarding electronic door locks, the absolute majority of employee's (95.7%) stated that they used electronic door locks in hotels, while only 4% of employee's answered that they did not have electronic door locks. Regarding voicemail, 80.8% said they use voicemail in hotels and guest rooms, and 19% said they do not use voicemail in hotels and guestrooms.

A study by Reid and Sandler (2018) found that electronic door locks are increasingly effective alarm systems. Similarly, Van Hoof (2017) surveyed hotel managers' technology needs and perceptions and found that 92% of managers agreed that the use of technology improved hotel operations and 81% said it increased customer satisfaction. In the reservation services sector, the majority of employee's (92%) agree that ICT applications have enabled more and better transactions in the reservation system, with 69% strongly agreeing and only 23% disagreeing. However, (2%) were neutral, some (6%) disagreed and 3% strongly disagreed. Regarding inventory management, 82% of employee's agreed that ICT applications have improved the hotel's ability to manage inventory. However, (5%) were neutral, another 13% disagreed, 3% strongly disagreed and the remaining 10% simply disagreed. Also, the majority (78%) agreed that ICT has enabled the proliferation of hotel chains, with 15% agreeing and 63% strongly agreeing. However, 6 percent were neutral and only 16 percent disagreed. In addition, most employee's (92%) agreed that ICT applications enable them to respond quickly and flexibly to market and customer needs. 23% agreed and 69% strongly agreed. Only 8% strongly disagreed and none were neutral.

Discussion

From the services offered at 3 star motels is now known as playgrounds of Africa for the tourists as they can enjoy their worthy stay in 3 star motels getting involved into plenty of leisure and entertaining that

are afore mentioned services. However, the proper management of all activities is always remain major consideration for effective use AI at Kwekwe 3 star motels. The researcher found that the services being offered at Kwekwe 3 star are good and the customers are being satisfied with the services and products they are getting there through the use of AI. The above results are consistent with researchers such as Cline and Warner (2019) who argue that hotel guests choose motels based on the quality of service provided and expect comfort and convenience from their rooms. Rowe (2017) reported that more than half of business travelers prefer hotels with voice mail and Internet access. A study by Reid and Sandler (2018) found that electronic door locks are increasingly effective alarm systems. Similarly, Van Hoof (2017) surveyed motel managers' technology needs and perceptions and found that 96% of managers agreed that the use of technology improved motel operations and 81% said it increased customer satisfaction. Moteliers usually see ICT applications as one of many ways to connect with potential guests. Thus, information and communication technologies can play an important role in helping hoteliers learn more about their customers and their preferences (Lee, 2013). The use of internet has become very powerful and popular in our daily life. These devices are used both in offices and hotels. It also helps us communicate quickly via email and enhance virtual learning. This reduced the geographical distance between countries and regions, allowing people and companies to communicate with each other very efficiently.

When asked whether the introduction of ICT has improved bookings in reservation systems and strengthened the industry's competitive advantage in terms of service quality, senior management expressed the following views on the impact of ICT use on hotel services: They report that the use of ICT has improved Motel services by making checks and balances easier than paperwork. ICT has also enabled all departments to have their own documentation and improve room and rate management. As one of the managers explains, using ICT in the motel has improved services and saved a lot of time. In addition, improved service has enabled hotels to increase customer satisfaction and expectations. A previous study by (Art 2012) found that some motels were used alternative systems during the distribution of the motel chain: online hotel reservation systems used to improve motel operations, such as OHRS and systems reservation centers (CRS). The use of information and communication technology (ICT) in front office operations is widely used in everyday work. This is because some form of ICT can be used to manage front desks more efficiently, from star hotels to budget hotels (Arth, 2013). An online motel reservation system (OHRS) allows customers to easily search for room availability in hotels and hotel chains and serves as an effective marketing tool. These results show that the use of ICT applications well integrated with PMS improves hotel services. ICT applications have not only reduced paperwork but also improved hotel transactions, increased revenue and ultimately played a significant role in the growth of the country's economy. The mean Likert scale of the responses was 1.94, indicating that most respondents agreed with the statement. The standard deviation was 0.68,

indicating that responses varied. The results are also consistent with other studies showing that companies use ICT to remain efficient and effective in business. ICT plays an important role in modern hotel operations such as inventory management, reservations and other business transactions. ICT in the hospitality industry has had a positive impact in providing a competitive advantage in the service sector. In addition, many transactions occur concurrently, resulting in significant cost reduction (Aslam, 2010). With the advent of computerized systems, motels can receive reservations within two years with minimal hassle and expense. These findings are also consistent with Kasavana and Cahill's (2017) assertion that there is no accounting and auditing equivalent to the myriad of small hotel business operations that are emerging very quickly in a variety of outlets. Kasavana and Cahill (2018) further listed the role that ICT has played in modern hotel operations.

First, ICT has helped hotels manage inventory and a wide range of business transactions. Secondly, these authors confirm that the CRS automatic processing system can be used as an Internet marketing tool when reserving and selling several airlines through the global distribution system (GDS). Thus, this helps management to grow and manage capacity and provide profit policy in different ways. Operation of the reservation system; Therefore, it is necessary to respond quickly and flexible to the market, it requires consumers, which contributes to the economic growth of the company and the country. With the advancement of information and communication technology, more information can be recorded, making revenue more manageable than revenue per camera (Vidgen et al, 2019). However, this capability is limited by non-technical factors such as industry segmentation, particularly interactions with available booking channels.

Interviewing one of the top managers, he highlighted that proper training of employee's and recruitments is a major requisite so as to attend guests. Respondents mainly highlighted this strategy after having discovered that their employee's lacked proper training on how to save customers, the need for extensive training for hotel staff. If hotels use AI for tasks like check-in and check-out, staff members will need to be trained on how to use the technology. Another challenge is the potential for data privacy concerns. Good service delivery techniques, purchasing practices, and order compliance are all improved by proper training of hotel employee's. This is in line with the study by Dundan (2017) that found staff training and motivation are crucial to when attending guests. The protocols and actions that should be done must be made known to all staff members. This strategy was further emphasized by Marlon (2007) who argued that employees require training on how to satisfy a guest. Furthermore, respondents argued that proper use AI of product such as electrical gadgets, ICT product is another factor that enables employee's to enjoy their stay. The findings indicated that these strategies have a significant and important to employee's in the sense that employees can enjoy hotel products in Harare. This is consistent with previous research by Hamele and Eckart (2006), which examined hotels in Germany and found that they experience losses in hotels due to improper way of using AI products.

Another strategy is to provide extensive training on the use of AI technology. This will help employee's feel more comfortable using the technology and will allow them to provide better service to customers. Another strategy is to create a clear policy on the use of AI, which outlines how the technology will be used and how it will impact employee's. This will help to ensure that the technology is used ethically and responsibly.

Table showing strategies to cater for challenges that the guests are facing at hotel.

Strategies	Percentage (%)
Employee's training and seminar attendance	25
Create a clear policy on Artificial Intelligence	35
Proper use of Artificial intelligence	10
Proper use of ICTs products	10
Proper use of electrical equipment	10
Totals	100

Table 1: Used Strategies for Challenges

The study established that 80% of the respondents confirmed that racism have a negative impact on their perceptions towards service quality that will affects their perceptions and the business production of an organization. There is need for solution to those problem because it limits both the employees and customers to improve their ideas on AI effects towards the organizational performance. Thus far the respondents also confirmed that these measures have bearing fruits but still the managers should enforce tight and enforce rules and regulations to cater for those who are still practicing dehumanization since its demotivated those who want to cater for employee's perception on AI effects in the supply chain. The researcher also identified firing dehumanization at work place as a way of cater for the conflicts that can arise due to dehumanization that can affect employee's interests at a certain organization due to AI effects. A study by Chan (2016) gave an example of a similar study on the effects of socio- economic problems towards customer care at hotels and organization. This study was against dehumanization. The researcher confirmed that being against dehumanization can encompasses the ideas of different people to come up with the tangible product or service. The results are similar to a study carried out by Shrestha, (2017) in Nepal where the study confirmed that there have been efforts employed in order to manage the losses and conflicts. However, a recent study on compensation scheme (Watve, et al 2016) criticize the existing visual model of estimate of loss as fact of subjectivity, which leads to enhance the conflicts.

Conclusion

The initial objectives of the study were to identify the employee's perceptions on (AI) artificial intelligence performance in 3 star motels Kwekwe, Zimbabwe. The main objective was achieved by the study through research findings as shown in chapter four. The study found that use of the Online Hotel Reservation System (OHRS) conveniently helps employees to search for room availability across properties and chains hotel acting as an effective marketing tool. The study also found that use of AI in the supply chain in hotel industry has indeed enabled numerous and better transactions in booking systems; therefore, enabling quick and flexible response to the market and employee's needs. The second objective was to evaluate the factors contributing to the gradual decline in clientele levels at the selected motel. The study found that hoteliers generally regard AI applications as one of many ways to connect a bridge with prospective guests. The study also found that information communication technology can play a crucial role in helping moteliors learn more about the guests and their preferences due to AI innovations like electronic door locks and digital check-in and check-out system, also it found that political, economic and social factor can affect the perceptions of customers and employees at motel sector such as diseases, civil wars, cultural activities and also racism is also another contributory factor that affect customers interest. The other objective was to recommend the long term relationship between employee's perceptions of service quality and customer loyalty at selected motels.

The study also found that knowing the relationship between guest perception of service quality and customer loyalty has the great advantage in the sense that it enables managers and employee's to understand that did the guests certified with the service or not, because some employee's faced problems the sense that some employees and customers are not used to the introduction of new technology. The study found that not all employee's access social media platforms for example online bookings. The aim of the study was to produce a set of strategies on the factors that affect the employee's expectation in selected 3 star motels in Kwekwe due to the introduction of AI in the supply chain for example the motel sectors. The background of the study indicated that good service quality can occur due to different causes in hotels like introduction of AI application since it makes works easier. The background of the study further highlighted some studies that were carried out by other researchers to find factors that affect employee's expectation on service quality due to the introduction of AI. The literature reviewed different critics made by scholars pertaining employee's perception on the effects of AI on service quality which this study seeks to fill in the literature gap. Implementation of the review was also discussed.

The success of any organization, including motels is increasingly depending on the right use of AI innovations in order to satisfy employee's and meet their needs. This leads to the conviction that the effective use of other service in the field of marketing is significant. The research is intended to assess

the impact of AI adoption on 3-star motel marketing performance in terms of financial and non-financial measures. This research is relevant to the requirements of the Kwekwe motel industry by helping managers to better understand what the effects of different AI innovations and other service at Kwekwe 3 star hotels to look for solutions on marketing performance, and hence to consider ICT adoption strategies that help improving their marketing performance. This research attempts to help the hotel marketers and managers to improve their customer services strategies in their business activities to achieve marketing goals. The literature suggests that the development of good customer services proposes competitive advantages such as, enhanced revenue generation and improved employee productivity, and advance communication channels. This study has been limited on electronic and AI impacts by participating Kwekwe 5 star motels. The proposed model could be modified to allow measurement of employee's perception across different sectors of hospitality such as restaurants, tour operators, car rent services, travel agencies and so on. This would enable a direct comparison of results across different types of supply side stakeholders. Therefore, future researchers should also study what is happening in other destinations in Zimbabwe.

References

Agrawal, A., Kumar, C., and Mukti, S. K. (2021). Role of information and communication technology (ICT) to enhance the success of knowledge management (KM): A study in a steel plant. *Journal of the Knowledge Economy*, 12, 1760–1786. <https://doi.org/10.1016/j.jclepro.2019.05.024>

Ahmadi, H., O'Casey, A., and Miles, M. P. (2018). Product resource capability complementarity, integration mechanisms, and first product advantage. *Journal of Business Research*, 67(5), 704–709. <https://doi.org/10.1016/j.jbusres.2013.11.031>

Cai, Z., Huang, Q., Liu, H., and Liang, L. (2016). The moderating role of information technology capability in the relationship between supply chain collaboration and organizational responsiveness: Evidence from China. *International Journal of Operations and Production Management*, 36(10), 1247–1271. <https://doi.org/10.1108/IJOPM-08-2014-0406>

Ganbold, O., Matsui, Y., and Rotaru, K. (2020). Effect of information technology-enabled supply chain integration on firm's operational performance. *Journal of Enterprise Information Management*, 34(3), 948–989. <https://doi.org/10.1108/JEIM-10-2019-0332>

Gardner, H. K., Gino, F., and Staats, B. R. (2018). Dynamically integrating knowledge in team: Transforming resources into performance. *The Academy of Management Journal*, 55(4), 998–1022. <https://doi.org/10.5465/amj.2010.0604>

Monino, J. L. (2021). Data value, big data analytics, and decision-making. *Journal of the Knowledge Economy*, 12, 256–267. <https://doi.org/10.1007/s13132-016-0396-2>

Novak, T. (2018). MANOVAMAP: Graphical representation of MANOVA in marketing research. *Journal of Marketing Research*, 32(3), 357–374. <https://doi.org/10.1177/002224379503200>

Podsakof, P. M., MacKenzi, S. B., Lee, J. Y., and Podsakof, N. P. (2023). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903. <https://doi.org/10.1037/0021-9010.88.5.879>

Sun, B., and Liu, Y. (2021). Business model designs, big data analytics capabilities and new product development performance: Evidence from China. *European Journal of Innovation Management*, 24(4), 1162–1183. <https://doi.org/10.1108/EJIM-01-2020-0004>

Wang, C., Zhanga, Q., and Zhang, W. (2020). Corporate social responsibility, green supply chain management and firm performance: The moderating role of big-data analytics capability. *Research in Transportation Business and Management*, 37, 100557. <https://doi.org/10.1016/j.rtbm.2020.100557>

Wu, L., Dong, C., and Xiong, G. (2020). A big-data–based analysis on the impact of cruise tourism Image on Chinese tourist satisfaction and behavioral intentions. *Journal of Coastal Research*, 106, 314–318. <https://doi.org/10.2112/SI106-073.1>

Yu, W., Zhao, G., Liu, Q., and Song, Y. (2021). Role of big data analytics capability in developing integrated hospital supply chains and operational flexibility: An organizational information processing theory perspective. *Technological Forecasting and Social Change*, 163, 120417. <https://doi.org/10.1016/j.techfore.2020.120417>