

Technological innovations in the hospitality industry and its impacts on the customers' decision making

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Abstract

The advent of advancement in technology has taken the global service industry to another level. The world is in the age of digital transformation, so is consumer's needs and behaviour. For any industry to remain relevant, it must key into the new wave. Considering the hospitality industry, not much has been done to really assess and document the contribution of technology to customers' decision making when choosing a hotel. This study therefore aims to investigate the impact of technological innovation on the hospitality industry, using key objectives such as determining the level of technological orientation amongst hotel employees; ascertaining the degree of adaptability of the hotel employee to the new innovations; and assessing the guest experience of technological innovations in the hospitality industry. Survey research design was adopted for this work via quantitative research strategy. Eko Hotels and Suites was used as a case study; with the research population being the customer and staff of the hotel which comprises randomly selected 65 staff and 152 guests. Descriptive statistics was used to analyse the findings that ensued from the survey conducted for this work. The major finding of this study shows that the benefits of technological innovations outweigh the perceived shortfalls, and customers prefers to patronize technological innovative hospitality outlets like Eko Hotels and Suites. This work concludes that the benefits of technological innovations outweigh the perceived shortfalls and customers prefer to patronize technological innovative hospitality outlets like Eko Hotels and Suites.

Keywords: Consumer, development, growth, hospitality, innovation and technology

Introduction

The scope of Internet of Things (IoT) centres around the interrelationship of network devices and how they use their connections to share and exchange data with the support of the cloud. These IoTs are captured in devices that are typically embedded with technology such as software applications and sensors. They are aided by mechanical and digital machines and consumer objects (Sharma, 2019). The advent of this technological innovation has turned the world into a

global village. People can connect with each other, transact business and enjoy ease of doing things with the aid of these innovations. Hospitality businesses, especially hotels are now being positioned to tap from this new development and through making the most of it, satisfy certain customer's needs. Manish (2022), opines that technology is capable of improving guest experience, increase sales, and reduce costs with in-room tablets technology.

The hospitality industry provides services for people who are away from home regardless of whether it is for a long or a short period of time. These services can vary according to the specific needs of both the person away from home and the organization operating those services. The hospitality industry is important to the development of many parts of the world (Falabi and Folorunso, 2020). There is no doubting that hospitality industry is the livewire of tourism at all levels. The United Nations World Tourism Organization (UNWTO, 2021), confirms that between 70% and 75% of international tourists' expenditure goes to hospitality services on annual basis. This confirms the strategic importance of the sector to tourism, and global economy. The number of internationally operated hotels world over are numerous, some of these franchises are in Nigeria as well. However, the number is expected to keep growing. Nigeria has so few internationally branded hotels due to the perception of the country as a high - risk destination for investments, especially in hotel businesses, which are capital-intensive and require long-term for the investors to recoup their money (Ukpokolo and Folorunso, 2019).

Meanwhile, the standard being operated by the available franchise and other internationally branded hotel is noteworthy (Sharma, 2019). Barrows, Power and Reynolds (2012), assert that it is expedient for locally and state owned hotels to continually take a cue from the available international branded or franchise hotels in their region in the aspect of best practices and sustainability. Introduction of technology is one thing, its application and acceptability is another. Some notable state operated chains of

hotels in Nigeria have suffered lack of application of innovative technology and other management issues. This has led to either their complete renovation and reintegration into the hospitality market, or total collapse of the chains. It is sad to reiterate that most of these hotels were the glory of the hospitality profession in the later part of the last century.

Basically, technology is not the saviour. More so, it comes with its own disadvantages associated with employment opportunities and cultural pervasion. It's changing people's way of life, thinking and prospect. In some cases, it takes over the job of seven people and reduces it to a job of one person (Shetty, 2022). These are obvious concerns. However, the world is moving, causing transformational changes at all level of social, economic, cultural, environmental and political platforms. It is indeed an age of digital transformation. Consequently, the global population is affected by this transformation. To some, it is positive while to other is not so. As a results of this, the needs and behaviour of consumers are a being shaped. The paradox of technological application as generated a slogan of "if you don't join them, you will be left behind" (Kansakar, Munir and Shabani, 2019).

Apparently, hospitality industry is a service oriented industry. Service is a service oriented industry. Service is a delicate process as it is not tangible. Although, we must understand service as both physical and non-physical product. The service part of a physical product is how it is presented. So service is a total experience that a customer gets from the performance of people in charge of meetings customers' needs. Costumers' decision making is a product of their behaviour and perception towards the

service being rendered. Service must therefore complement the customers' needs (Falabi, Akande and Folorunso, 2018). Technology can contribute to this, as these needs and behaviours of customers are changing as more innovation in technology is being introduced to the hospitality industry. So, for the hospitality industry to remain relevant, it must key into this new wave of innovation in order to take the customer satisfaction to a new level. Unfortunately, not much has been done to really assess and document the contribution of technology to customers' decision making when choosing a hotel or a restaurant. This study therefore aims to investigate the impact of technological innovation on the hospitality industry, using key objectives such as determining the level of technological orientation amongst hotel employees; ascertaining the degree of adaptability of the hotel employee to the new innovations; and assessing the guest experience of technological innovations in the hospitality industry.

With the capacity to transform the industry positively, technological innovation is a crucial part of the hospitality industry (Gollapudi, Jangeti and Kotapati, 2012). In recent times, the rate of inventions in the hospitality industry has been on a fast pace. Many service providers are trying to be in tune with these changes, they now tend to embrace it as the new trend in the global workspace and they believe that the new technology is contributing to the growth of the industry. Manish (2022), affirms that some of the reality of this technology stems from the post-covid intentions of the hospitality business owner to be intentional about customers' safety,

comfort and satisfaction. There are therefore some key innovations that affect the hotel industry more than the others. These includes artificial intelligence (AI), augmented/virtual reality, the Robot concierge, blockchain and 5G/6G network for mobile communication service. These innovations along with IoT have direct impact on the hotel's services and are capable of influencing the decision of customer about choosing a particular hotel (Sharma 2019). The relationship between these innovations lies their convergence to create advanced, interconnected ecosystems that transforms industries such as hospitality and others (Manish, 2022).

Interestingly, (Kansakar *et al.*, 2019), submit that hospitality industry now operates software as service (Saas). Saas is built to help in hotel management and related businesses in the area of administrative and IT issues, it is sometimes used to support in-house technical help (Kansakar, *et al.*, 2019). Manish (2022), asserts that AI is an offshoot of Saas, it makes the hospitality establishment to be able to run automated systems, such as point of sales machines (POS), lighting, alarms, electronics in the room and other service areas, and automated property management system (PMS). The Saas in the room, operated by AI is referred to as Smart in-room technology (Kansakar, *et al.*, 2019). This is the most innovative aspect of customers' room experience. It is fast reshaping the hospitality industry; it elements are mobile keys, through which the guests can use their smartphones to unlock their rooms; in-room tablets; smart check in procedures; wireless charging pads, smart television, drapes and lighting; and virtual

reality among others (Kansakar *et al.*, 2019).

Iannucci (2022) submits that now, more than ever, customers are happy to be in control of their own room even when they are not physically present in the hotel. The use of smartphones in activating access to the rooms, place food order, and using room tablets to control temperature and electronics have made the innovative hotels to stay ahead of their competitors. Manish (2022), adds that wearable tech is seen as one of the best inventions in the hotel industry. Keycard, which is one of the most usable devices of wearable tech can be used for data collection about the guests, which in turn can help the hotel to provide a tailored service for them (Manish, 2022). With the aid of the virtual reality, the guests can now order a virtual trip, this enables the guests to enjoy variety of adventure shows and not just local sightseeing (Shetty, 2022). It creates a lot of excitement for hotel's guest and this is part of the reason why the significance of self-service technology is growing in the hospitality industry. Shetty (2022) submits that tech-savvy guests now prefer tech over human interaction. Hotels now operate mobile apps through which their existing and prospective customers can interact with guest service managers through service automation.

Furthermore, Shetty (2022), accentuates that as simple as check-in procedure may look, the impact of internet and technology in online booking, reservation and even room upgrades while in the hotel has been underscored. Smooth way of ensuring that guest experiences hassles free check-in is empowered by technological innovations. In longer term,

these innovations tend to drive down the hotel's business cost. Most hotels in Nigeria are now adopting automated check-in services through the use of apps and Online Travel Agents (OTA), it can also be called 'Smart Booking'. Hotels chains and franchises usually adopt a single booking platforms where all the hotels within the chain or under the franchise can be accessed. This allows for transfer of service and it puts the guest at an advantage of enjoying similar experiences at of the facilities within the chain (Manish, 2022).

Hospitality service transcends guest activities within the hotels alone, the concierge aspect of the hotel that deals with providing guest with information about tourism, movies, spas, shopping and care hire services amongst others has been taken over by technology (Shabani, Munir and Hassan, 2018). This service used to be carried out traditionally by the concierge unit of the Front Office; however, things are different now. Hotels now make provision for guest to ask questions regarding external services from 'Siri' or 'Alexa' which are AI smart virtual assistants built through assembly language (AL) to serve as a concierge on behalf of the hotel (Shabani *et al.*, 2018). 'Siri' is Apple's iPhone app which can be used off premises for guest's other needs while Alexa is Amazon's cloud-based voice control system that works alongside the Echo speaker that receives the spoken request (Manish, 2022). Siri and Alexa also attend to guest request within the rooms, such as TV volume control, room light control, shower control and lots more (Shetty, 2022).

These achievements are already milestones reached by the hospitality

industry in the area of guest service. Big name franchise such as Starwood brands now offer a new voice-activated guest room service named Project Jetson (Kansakar *et al.*, 2019). Guest can access this system through their iPhone or the room's iPad. The devices will be activated as soon as guest are checked-in and are immediately personalize for the guest needs (Manish, 2022). These devices are beneficial to the hotels as much as they are to the guests. They are simply beyond imaginations, they help ensure workflow management within the hotel from guest reservation, and documentation to billing and checkout. The employees of the hotel are now being trained on how to make the best use of this innovative technology (Iannucci, 2022).

It is no longer strange to see hotels offering free Wi-Fi to guests. Fast internet is the bedrock of all innovations in the hospitality industry. Guests, above all things wants a room with free and fast internet service to keep up with their personal needs. The first and major responsibility of the hotel is to ensure this, as the internet has affected every corner of our lives from virtual family reunion, business meeting, to religious assembly and alumni get-together. Guest want to be able to have uninterrupted access to the internet while they are in the hotels. Therefore, guest will choose a hotel that can meet these needs ahead of those that will compromise (Delaney and D'Agostino, 2015). Since most guest have plugged into social listening, it is easier for them to choose a hotel that will most likely meet their needs. Review of different hotels are done through companies like Airbnb which is changing a lot of things about how hospitality industry treats

travelers (Shabani *et al.*, 2018). Hoteliers now found a way to get an inside scoop on the social listening platform and market their services to prospective customers (Manish, 2022). This is another height of technological innovation in the hospitality industry.

The major employees' incentive being introduced recently is the introduction of new technology into their service operation which help to make employees work easier and faster (Delaney and D'Agostino, 2015). The introduction of technology in this sense can be seen as a form of job expansion and job enrichment when it does not affect the employees' status as workers of the organisation. At first, employee may feel dozier and become surplus to requirement when they are redundant. Organisations are finding a way of implementing technological innovation without necessarily having to cut off employees that becomes excess. At the long run, the job becomes more competitive and only those that embrace technological innovation will remain relevant as an employee within the industry.

Delaney and D'Agostino (2015), concede that although, some of the hotel staff would be resistant to change, as it may take time to get used to the fact that 'Siri' and 'Alexa' are being preferred by the guest to interact with and ask for vital information that would normally have been supplied by the hotel employees like the receptionist or the porter. However, the long term benefit of embracing technology overshadows the awkward feeling that comes with new way of doing things. Since this makes their job more efficient, employees satisfaction is attained and productivity is ensured. One of the key

things that comes with the introduction of new technologies is training and development. The hotel must use the medium to train the staff on the new ways to approach their duties and through this, human capital is being built, empowerment and capacity building are also ensured.

Methods

This study employs a survey research design, in which a quantitative research strategy was adopted. Eko Hotels and Suites was used as a case study; with the research population being the customer and staff of the hotel, out of which samples were randomly selected. Sixty five (65) staff and one hundred fifty two (152) guests randomly completed the online survey designed for this work over a period of two weeks. Front office staff, housekeeping staff and food and beverages staff were the main focus among the staff members of the hotel as they deal more directly with guests on daily basis. Equally the guests at the signature suites of the hotel were prioritized due to the level of technology available at the suites. Ideally, Eko Hotel and Suites was selected due to the perceived level of patronage, and being among the highest rated hotels by Online Travel Agents (OTAs). The research

instrument used was questionnaire; its reliability index (RI) is 95% percent as it was subjected to an initial pilot survey. Frequency distribution tables, graphs and charts were used to analyse the findings that ensued from the survey conducted for this work.

Results

The findings of the survey conducted for this work are interpreted under these research questions:

1. What is the level of technological orientation amongst hotel employees?
2. What is the degree of adaptability of the hotel employee to the new innovations?
3. What is the guest experience of technological innovations in the hospitality industry?

The finding shows that Eko Hotel has a capacity of 824 rooms, eight restaurants, seven bars, 7000 capacity conference and banquet facilities. Its has been rated as the most preferred hotel in West Africa due to its adaptability to technological innovation. Built since 1977, Eko Hotel and Suites is the largest hotel in Nigeria, with the largest convention centres equipped with modern technologies.

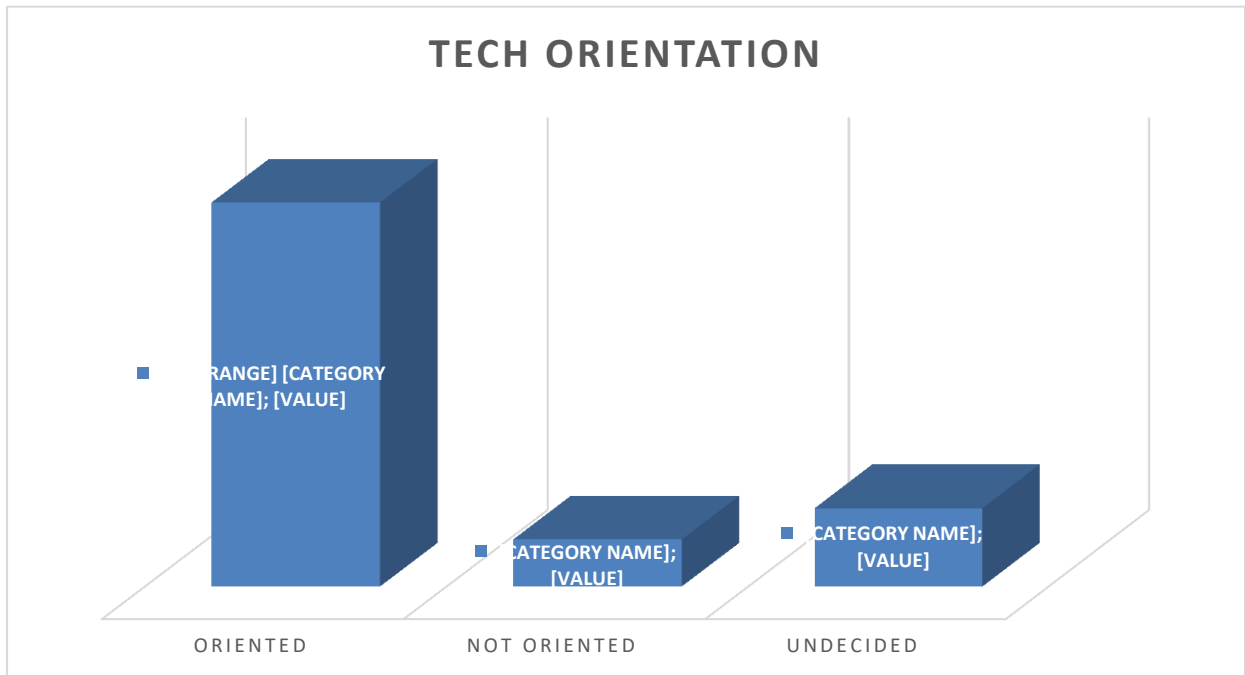


Figure 1: Level of technological orientation amongst hotel employees

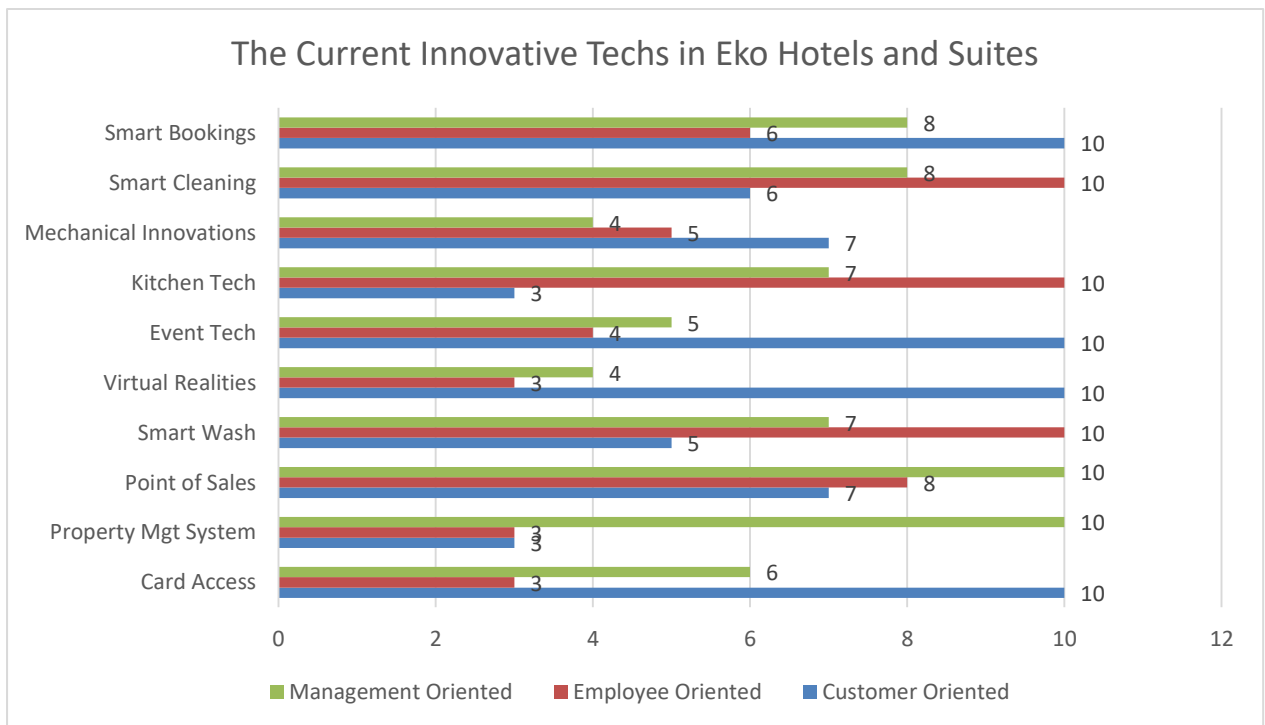


Figure 2: Respondents' perceived technological innovation in Eko Hotels and Suites

The degree of adaptability of the hotel employee to the new innovations

Table 1: The degree of adaptability of the hotel employee to the new innovations

S/N	Questions	Options	Frequency	Percentage
1.	Do you feel comfortable with different technological innovations in your hotel?	To a large extent	32	49.2
		To some extent	26	40
		Not at all	07	10.8
			65	100
2.	Do you feel your job is under an immediate threat with the presence of these innovations?	Yes	31	47.7
		No	13	20
		Partially	21	32.3
			65	100
3.	How would describe the customers' perception of these innovations?	Appreciated	42	64.6
		Not Appreciated	06	9.2
		Confusing	07	10.8
		Indifferent	10	15.4
			65	100
4.	Do you think Eko Hotels and Suites should add more technological innovations?	Definitely	25	38.5
		Maybe	31	47.7
		Not Necessary	09	13.8
			65	100

The guest experience of technological innovations in the hospitality industry

Table 2: The guest experience of technological innovations in the hospitality industry

S/N	Questions	Options	Frequency	Percentage
1.	Are you familiar with the technological innovations in Eko Hotels and Suites?	Very much	92	60.6
		A little bit	56	36.8
		Not really	04	02.6
			152	100
2.	Does this technological innovations in Eko Hotel and Suites make you feel more comfortable?	Yes	111	73
		No	13	08.6
		Partially	28	18.4
			152	100
3.	Have you seen some of these innovations in other hotels in Nigeria?	Most times	62	40.8
		Some times	66	43.4
		Partially	14	09.2
		Not at all	10	06.6
			152	100
4.	Are you satisfied with the existing innovations or you would like more to be added?	More can be added	55	38.5
		Very satisfied	66	47.7
		Not satisfied	31	13.8
			152	100

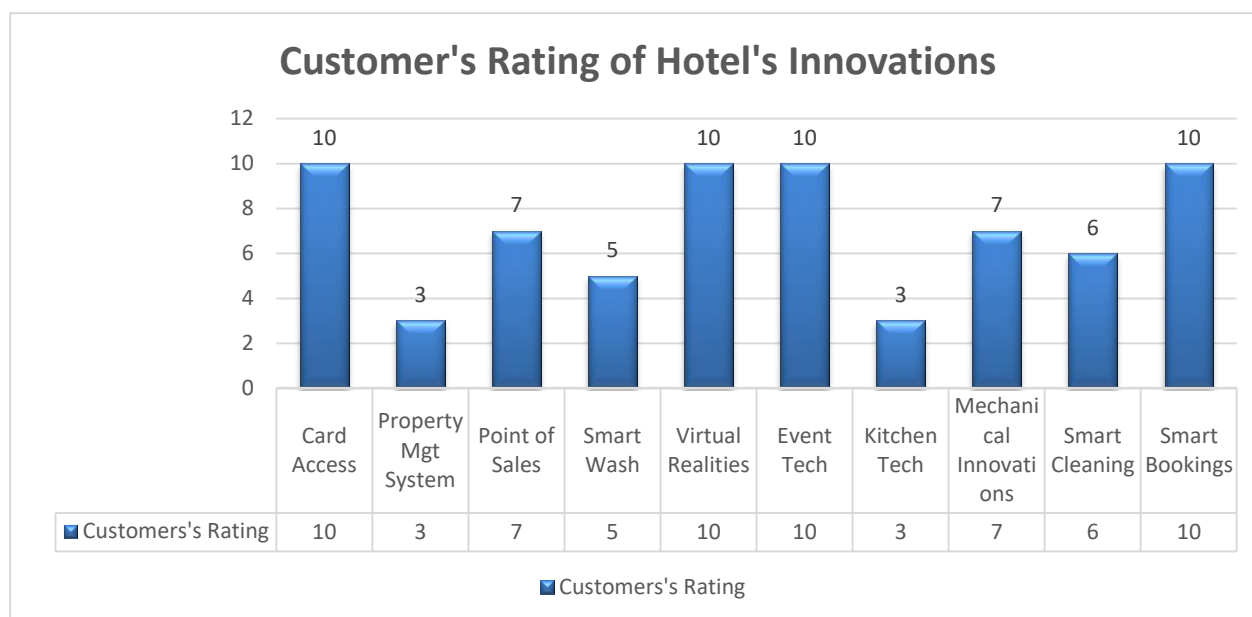


Figure 3: The innovation that enthused the guest/customer most

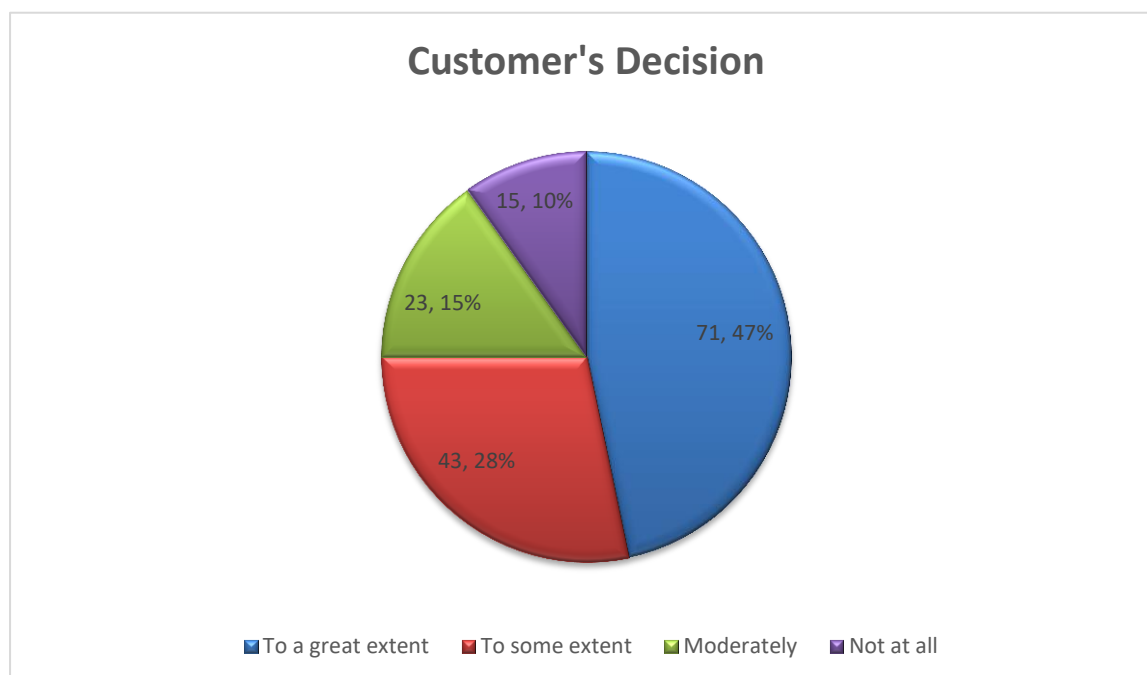


Figure 4: The impact of innovation on customer's choice of Eko Hotels and Suites

Discussion

Figure 1 shows that the level of technological awareness among hotel stakeholders is very high, especially among the employees. This implies that more people are now aware of what hospitality technology is and what it

means for the future of service in the industry.

Figure 2, using multiple choice questions (MCQ), shows the respondents perception of the current technological innovations in Eko Hotel and Suites; 4 of the 10 key innovations are mostly customer oriented, 3 are employee

oriented while 2 are management oriented as they relate more with the smart management and administration of the hotel. The only key innovation with an almost equal blend of the three: Guest, Employee, Management, is the mechanical innovations which includes elevators, trolleys, and security gadgets. As analysed by Manish (2022), the bases of these innovation is to give customers a quicker, safe and more comfortable service. The four technological innovation that are customer-oriented are expected to stimulate the customer into continuous patronage of the hotel, through their loyalty is gained.

As regards the degree of adaptability of the hotel employee to the new innovations, Table 1 above shows that almost half of the respondents feel comfortable about technological innovation in Eko Hotels and Suites. Although some 10.8% of the employees feel not so comfortable, probably due to technology taking up part of their primary duties. This is understandable as echoed by Delaney and D'Agostino (2015) who posit that employees are likely to feel insecure when their organisation starts adopting technological innovations that could replace them. Equally, almost 50% of the employee opined that they feel threatened by the new wave of technology in their industry. Only 20% are confident of keeping their jobs if the technological innovation continues to be pervasive within the hotel business set up. The key aspect of this drive is customers' perception of the new wave; it is interesting to see that the employees believes that about 65% of the customers appreciate this technological innovation in Eko Hotels and Suites. In a rather

unconvincing way however, just 38.5% of the employee would like to see the hotel add more innovation to the existing ones. This indicates that they feel more technology, especially automated service tech could see some of them become surplus to requirement by the hotel.

In furtherance, Table 2 indicates that 60.6% of the people that have patronized Eko Hotels and Suites before are very much familiar with the technological innovations in the hotel. 36.8% of them knows about these innovations a little bit. This shows that the respondents have a sound knowledge of technological innovation and its applications in the hospitality industry. This correlates with Shetty (2022), who was unequivocal about the awareness of people in the aspect of innovative technology in the hotel. He stresses that, as more people embrace the new wave, more awareness will be created among; first, the regular customers of the hotels; and secondly, the prospective customers would be interested in trying out something new by choosing an innovative hotel. Similarly, 73% of the guests feel that the introduction technological innovation makes them feel comfortable when they are in Eko Hotels and Suites. 40.8% of the respondents have seen some of the innovations at Eko Hotels in other hotels before. Another 43.4% have seen the innovations some times. This implies that technological innovation is taking shape in the Nigerian hospitality industry. More hotels are now embracing the new wave and are targeting customers that want to take advantage of the innovation. About half of the respondents are satisfied with the existing innovations at Eko Hotels and Suites; although 38.5% of them would like the hotel to add more

innovations to their existing innovative technology.

Most importantly, Figure 3, which was also obtained through multiple response shows the customers' rating of the innovations they are most enthused with at Eko Hotels and Suites. Smart Bookings, Card Access, Virtual Realities, and Event Techs are the most prominent in this case. As highlighted by Manish (2022), these are the innovative technology that affect the customers directly and they are likely to have more impacts on their decision making than the other innovations. Point of Sales Systems, Mechanical Innovations are also well rated by the customers, as these make their check-in swifter. Smart Cleaning, Smart Wash, Kitchen Tech and Property Management Systems also make the top 10 rating by the customers.

Therefore, when it comes to the impact of these innovations on customer's choice of Eko Hotels and Suites, Figure 4 reveals that 47% of the respondents agreed to a great extent that the innovative technologies in the hotel contribute to their decision making. A further 28% agreed to the claim to some extent; while 15% moderately agreed, and just 10% feel that they do not patronise the hotel because of the presence of innovative technologies. Perhaps, they like the hotel based on a different factor other than the scope of this study. this is backed up by Reimers (2014), who argues that people choose a hotel for variety of reasons. To some it could be because of the pristine location while others like the buzz of the city centre; what they seek for are satisfaction and value for money.

Unsurprisingly, guests now find the hotel industry innovation extremely

interesting and they want to experience the wave of tech being adopted by the hotels. Manish (2022), concludes that globally, Aloft's Project Jetson by Starwood is paving way for more automated room hotels, changing rented rooms to dream world for guest. Similarly, Cupertino Calif building now has a robot butler and built-in touchscreen display in Newark, New Jersey. Marriot is doing a lot of Virtual reality project with hotels in Tokyo. Eko Hotels and Suites in Lagos is not left behind in innovative technology with the adoption of automated system in keeping its washrooms clean and tidy due to massive traffic all year round. With the use of Swissmark vectair washroom products, the pipes and drains within the conduit areas of the hotel no longer emit bad odour, its keeps the room and public areas fresh and contribute to guests' comfort within the hotel.

Successful digital transformation is the process of using digital technology to create a new or modify existing business processes, culture, and customer experiences to meet the changing business and market requirements. Iannucci (2022), buttress that to do this the right way, hospitality businesses need to focus on four key areas:

- i. *Understanding guest behavior:* Identify and analyze the patterns and changes in guest behaviors and needs.
- ii. *Clear and measurable strategy:* The transformation must tie to a specific business goal that is measurable.
- iii. *Strong change management:* Develop a clear change road map and engage staff in the change process.

- iv. *Technical capability*: Make sure the technology is implementable and equip staff with the necessary technical skills to use the new technology.

Conclusion

Information technology is steering the wheel of change in hospitality industry. Siri and Alexa in the rooms are part of many projects of AI and machine learning within the industry. This gives room for more possibility as far as innovation in hospitality is concerned. Technology change can be tedious for the hotel to manage. The hospitality establishment must strive to meet the demands of customers whose behaviour and purchase decision is being influenced by this innovative drive. This study has established the fact that the benefits of technological innovations outweigh the perceived shortfalls and customers prefer to patronize technological innovative hospitality outlets like Eko Hotels and Suites. The hotel must therefore increase their ability to successfully implement these changes through well planned strategies, proper communication and astute management of issues related to the application of the techs, while monitoring all aspects of the changes that come with its implementation.

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