

Impact Of Covid-19 On The Usage Of Ai With Respect To Chat Bots In Hotels

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Abstract

Nobody might at any point imagine that this world would come at a halt in 2020, when the Covid 19 previously hit nobody accepted it could get such gigantic changes which would change the world as far as we might be concerned. It welcomed on many changes like work-from-home, social separating, changes in how cleanliness is kept up with and with it hits to various enterprises as well as an opportunity to arrive at new levels regarding innovation, particularly in lodgings. With the requirement for contactless assistance during the pandemic, the upsides of an AI attendant turned out to be significantly additionally articulated. The study descriptive in nature and adopted snowball sampling for collecting the data. The study the impact of covid -19 on the usage of artificial Intelligence, regression analysis was applied and found that among AI and RS AI (Chat-bots, Motion Detectors, Voice Recognition System) and RS (Online Reservation AI TOOLS INFLUENCING GUEST IN HOTELS 69 Portal), RS is relatively more important than the AI in explaining the guest intensity to stay. Study also explained that customer age is not significantly (0.103) impacted the guest intensity to stay in hotel.

Keywords: Artificial Intelligence, Reservation system, Online portal, Hotel industry.

Introduction

Coronavirus - 19 totally immersed the globe and stopped everything. It altogether affects all parts of society, especially the assistance area. The truth will surface at some point on the off chance that the pandemic was a gift or a revile concerning innovation for the lodgings and cordiality industry.

Prior to the pandemic, virtual reality (VR) innovation was just barely being addressed in the friendliness area. The genuine worth of VR in friendliness and the travel industry arose during Covid lockdowns and remain at-home requests, when might be explorers sat at home in their warm up pants, wanting to be elsewhere.

Portable application coordination is fundamentally the specialized term for 'when your telephone turns into your device for basically everything,' and it has been a consistently developing pattern for a really long time. The pandemic has recently enormously sped up reception.

The quantity of clients utilizing food conveyance applications, like Swiggy, Zomato, UberEats and Dunzo, in India has multiplied since the pandemic started.

Cafés have embraced contactless menus with coordinated portable requesting, so clients can keep away from contact and request directly from their own telephones, as opposed to contact an eatery menu or tablet.

Human contact will generally be key to an industry characterized by administration, yet presently there are ways of overseeing security that won't in any case ever supplant client care cheerfully.

- Cafés have supplanted paper menus with readable QR codes and started to embrace new tableside requesting advances.
- Contactless registration choices have been taken on at numerous lodging brands around the world, involving something similar Near Field Communication innovation as Paytm or Google Pay.
- Non-contact control boards were utilized in medical clinic lifts during the pandemic, and this innovation is presently starting to enter the lodging market.

Expected Future Developments

The fate of computerized reasoning in the travel industry is still hanging out there. On one hand, there is an uplifting outlook. As per this perspective, society is fit for resolving AI's most major problems. Laborers and AI frameworks will actually want to work together in light of the fact that security issues will be settled, availability will be accomplished so AI frameworks can be conveyed, and laborers and AI frameworks will actually want to team up. Under this worldview, AI can be considered an assortment of advancements that will further develop the travel industry experience for all gatherings included. Organizations will actually want to completely figure out its clients and foster items, administrations, and encounters that are more fit to their necessities therefore. Organizations can likewise construct powerfully custom-made packs in light of client inclinations. A few callings will be supplanted or filled by mechanical technology, bringing down generally functional costs and bringing about benefits that can be given to clients to some extent. In different conditions, innovation can work on unambiguous callings or free specialists from specific obligations, bringing about better help and client service. It additionally implies that organizations will actually want to offer administrations at a reasonable value which could already have been restrictively costly (Bowen and Morosan 2018).

Review of Literature

Due to the unparalleled degree of hysteria and financial uncertainties created due to the Corona Virus (Covid-19) pandemic, there's an growing want to research the modifications and demanding situations skilled in lodges. The sluggish convalescing of the hospitality enterprise needs that lodges are anticipated to make considerable modifications to the techniques they undertake of their carrier transport and operations.

Researchers also are anticipated to shift their studies awareness to increase answers for the hospitality and tourism enterprise. This observe tries to have a look at motel manager's perspectives at the outcomes of COVID-19 and the want to get better speedy through adopting green carrier transport. Examining the modifications and demanding situations can also additionally assist in growing and adopting strategic planning, innovative and modern thoughts for the motel enterprise to thrive amidst worldwide crises. **(Obinna Emeafor, 2021)**

The novel coronavirus (COVID-19) challenges the field with no vaccine and scientific capabilities hindered to deal with the disease; non-pharmacological interventions (NPI) are a key means of unifying the epidemic. Unprecedented international travel laws and regulations on homestay create significant disruption to the global economic system in view of World War II. With international travel restrictions affecting more than 90% of people at the stadium and widely circulated laws regarding public gatherings and network travel, tourism ended in March 2020. Early evidence of the influences of air travel, cruise, and lodging was extremely painful. Although unconfirmed, UNWTO 2020 preliminary predictions advise newcomers around the world to reduce their use of 20 to 30% compared to 2019. **(Daniel Scott, Colin Michael Hall, 2020).**

The global financial system has become a major challenge as the World Health Organization (WHO) has declared COVID-19 as a pandemic. Travel, tourism, and hospitality have had a profound effect on the use of shutter systems to maintain public transportation to control the disease. A recurring presence of robots, artificial intelligence, and human interactions with robots has been observed in hospitals, airports, transportation systems, hotels, restaurants and general public groups to help control COVID-19 distribution. A variety of robotics, including humanoids, autonomous vehicles, drones, and intelligent robots, can be used to reduce human contact and the spread of the

SARS-CoV-2 virus, such as mutation, disinfection, and temperature detection. The concept of independent, introducing safety or protection, and comforting and wonderful patients (Zeng Zhanjing, Alan Lew, Po-Ju Chen, 2020)

The need to look at objectives to see the effect of the spread of corona virus on the Chinese tourism industry is pervasive. . The second research methodology was used in the studies. A few sections of books, magazine articles, lectures or paper thesis, official documents, etc., are considered in order to compile important statistics for consideration. For the information collected, the second information is collected through major book reviews. Official information about coronavirus-related incidents has been collected. Poverty statistical information and actual information were collected to determine the effect of Corona Virus on China Tourism business. The results of the study show that the spread of the Corona virus in China has a profound worldwide impact. Because of this threat of the virus, foreigners are concerned about encountering a Chinese population. Foreign travelers have canceled their packages to China and Chinese travelers are barred from traveling to the host countries. The rapid spread of the Corona virus in China has halted the normal human presence in China. **(Ashikul Hoque , Mohammad Waliul Hasanat, Farzana Afrin Shikha, 2020)**

Coronavirus ailment 2019 (COVID-19) has quickly become a global emergency by 2020. More than 119 million people have been depleted due to COVID-19, with more than 2,600,000 deaths as of 14 March 2021. The COVID-19 epidemic is now less effective. the fitness of the human body and the intellect yet above all the global economy, especially the hospitality business [4–6]. By 2020, sales of logs have dropped by almost 50% to \$ 84.6 billion across the United States (US), which is a significant factor in the cause of the Great Depression in 1933. improved up to the same level of residence, normal daily prices, and sold as pre-COVID-19 times [9]. Therefore, it is very important to note what the epidemic has become and how it can re-establish customer behavior during and after the COVID-19 epidemic. During the COVID-19 violence, many clients have changed their behavior in order to stay away from people and reduce unnecessary communication. **(Jifei Wu, Xiangyun Zhang, 2021)**

Robots and synthetic intelligence (AI) technology are getting extra distinguished withinside the tourism industry. Nowadays, purchasers are confronted with a couple of alternatives concerning each human and robotic interactions. A collection of experimental research had been implemented. Four experiments established that purchasers had an extra fine mindset closer to robotic-staffed (vs. human-staffed) inns while COVID-19 became salient. The consequences had been extraordinary from preceding research, which had been carried out earlier than the COVID-19 pandemic. Since the moderating position of perceived danger in purchasers' desire for robotic-staffed inns became significant, the respondents' desire became attributed to the worldwide fitness crisis. This study presents some of theoretical and managerial implications through enhancing the knowledge of era reputation at some stage in a fitness crisis. **(Frank Badu-Baiden, Jungkeun Kim, 2020)**

His observe introduces carrier robots to a eating place organisation to lessen paintings hours and to enhance carrier fine. The enterprise should beautify productiveness due to the fact it's far the bottom within side the carrier enterprise, however carrier fine is a crucially vital issue for introduced value. An automatic guided vehicle (AGV) device for eating place shops changed into advanced and utilized in a Japanese delicacies eating place. Service operations have been changed. Work hour discount changed into confirmed. Sales according to hard work hour have been calculated to verify productiveness enhancement. In addition, the operating time and region of the network operator is recorded in the form of a Pedestrian Accounting System to investigate the operation and anticipate changes to the network company fines. The results show that the creation of AGV reduces the hours of drawing, and that it is accompanied by hard work. In addition, all network company institutions emphasize their primary project of decorating the network company fines during lunch. Each institution does a lot of work to beautify productive work in a way that creates an AGV. **(Takashi Okuma, 2020)**

This paper extends the attention on how artificial insight (AI) can cultivate thelearning capacities of human entertainers, embracing a more extensive view concerning a severe focuson assignments and exercises. The association among AI and human learning has not been in-vestigated in help research. Putting its hypothetical roots in work by Huang and Rust[Huang MH, Rust RT (2021) Engaged to a robot? The job of AI in service. **(Christina Mele, Marialuisa Marzullo, Tiziana Russo Spena, 2022)**

This function proposes a model to explain the purpose of using the chatbot. The model and its speculation were tested using structural calculations in the form of PLS. The study was conducted on 476 people who had just returned from vacation. A study shows that chatbot intentions are directly influenced by the following factors: the expected performance of chatbots, the habit of using chatbots, the hedonic component of using chatbots, the tendency to use self-help technology, social influences, and reality. There is evidence that chatbots behave like humans. There has been a negative impact on chatbot communication due to disruptions and problems. (Santiago Melian Gonzalez, Desiderio G Tano, Jacques B Gidumal, 2019). The potential for chatbots to replace jobs has a positive impact.

Study by **Stanislav H Ivanov, Craig Webster, Katerina Berezina,(2017)** examines the current situation and the expected adoption of computerized and robots by visitors, travel agencies and friendships. In addition to the great advances in friendly robots, research into robots in the tourism industry is extremely limited - a hole somehow filled with this paper. In particular, this paper looks at the performance of computerized computers in hostels, restaurants, times, entertainment venues, entertainment venues, airlines, car rental agencies, tourism facilities and a focus on traveler data, exhibition halls and art galleries. This paper describes the difficulties organizations will face while adopting service automation and robots to assist visitors.

The reason for this paper is to get the possible reaction of millennial visitors to the likely uses of AI in the lodging business. The accentuation was on which inn administration experience classifications are generally fit to supplanting representatives with AI with regards to the millennial visitor experience. Plan/philosophy/move toward This quantitative exploration involved a review poll for the information assortment. Reactions from 169 twenty to thirty year olds from six mainlands were dissected utilizing a mix of engaging measurements, t - tests, MANOVA tests and Bonferroni tests. Discoveries Four assistance experience classifications were considered: (I) "Registration", (ii) "Gathering Services (excl. registration)", (iii) "Wellbeing" and (iv) "Food and Beverage Services". The outcomes showed that of these four classes, "Food and Beverage Services" is more fit to supplanting workers with AI than "Wellbeing". (**Abdul Rauf, 2022**)

Coronavirus is supposed to improve friendliness robotization on the grounds that forefront robots work with social removal, bringing down disease risk. Putting resources into cutting edge robots arises as an answer for recuperating client trust and empowering requests. Be that as it may, we overlook how clients see these drives and, accordingly, their viability. Zeroing in on robot work at lodgings and on Generation Z clients, this study intends to examine visitors' discernments about robots' COVID-19 counteraction viability and their effect on booking goals. Plan/technique/move toward This review tests its theories joining a test plan approach with halfway least squares. Overview information from 711 Generation Z people in Spain were gathered in 2 timeframes. Generation Z clients at Discoveries assumes that robots decrease infection risk at inns. Robot humanoid attribution increments saw COVID-19 avoidance adequacy, no matter what the setting where the robots are utilized. Robots' COVID-19 anticipation viability incites better mentalities and higher booking aims. Research impediments/suggestions The inspecting strategy utilized in this examination obstructs this study's outcomes speculation. Further exploration could duplicate this study utilizing irregular examining techniques to guarantee representativeness, in any event, for other generational accomplices. Pragmatic ramifications employed robots as a COVID-19 avoidance measure for improved request, assuming robots are human-like. Hoteliers need to convey that robots can diminish disease risk, especially in business sectors more impacted by COVID-19. Robots should be utilized in low friendly presence settings. (**Nora Lado, 2021**)

This study researched the shopper acknowledgment of robots in inns when COVID-19, with a particular accentuation on whether COVID-19 fundamentally affected the acknowledgment of robots by inn visitors, and whether visitors had more significant levels of acknowledgment of inn robots since the underlying COVID-19 flare-up was managed in China. Plan/technique/approach: The example for this examination included Chinese inn visitors when COVID-19, with 247 reactions acquired before its flare-up and a further 601 reactions assembled later. A few theories were created and tried in a pseudo-exploratory plan. Discoveries: The outcomes showed that COVID-19 expanded lodging visitor acknowledgment of robots. After COVID-19, the apparent significance of the value, social impact, mentality and worth of robots expanded, while the apparent significance of the usability and humanoid attribution of robots diminished. As a contactless help, the helpfulness of robots was more esteemed by clients. This drove clients to bring down their prerequisites for the usability of robots. Furthermore, individuals

were more worried about the social impacts on robot use. (Lina Zhing, J Andreas, Alastair M Morrison, Liyu Yang, 2022)

Aim and Objective of the study

The aim of this research is to study the Consumer Behavior towards the usage of Artificial Intelligence elements like Voice Recognition Systems, Robots and Motion detectors in hotel industry to statistically analyze the extend of the perspective towards the factors. The objective of the research is to study the Covid-19 and its impact on the world going digital with respect to Artificial Intelligence.

Significance and Scope of Study

The importance of this study is to understand how technology and the innovation of Artificial Intelligence have changed the world as we know it. It showcases how the elements of Artificial Intelligence like Chat-bots, Robots, Motion detectors plays a vital role in various departments of the hotel and how its usage impacts and influences the consumer's and guest behavior.

With the continuing COVID-19 pandemic, it has emerged as even clearer that tourism is noticeably depending on technological solutions. The persevering with disaster requires institutional innovation to conceptualize resilient, agile, and bendy strategic projects and operations (Gretzel, 2021). Smart technology, along with synthetic intelligence (AI) and robotics, are growing an critical riding pressure for travel, hospitality, and leisure (THL) at some stage in the pandemic and beyond, paving the manner for brand new enterprise models, new patron touch points, and new value (co-)introduction opportunities. These technologies facilitate human experiences, help crucial enterprise processes, and allow critical governance aspects. The reason for this research is because AI and robotics are critical topics in our social discourse and are an essential enabler in our life (e.g., Devlin, 2018; Tegmark, 2017).

Research Design

This study adopted a descriptive research design as the participants involved in this study have an influence on them. Research questions were formed based on reviews on literature based on AI tools and guest's intention to stay at a particular hotel. Snowball sampling technique was used which helped to maximize the number of responses and understand the population better through the number of different responses and consumer perspective as well as each individual having their own opinion and view towards the usage of Artificial Intelligence tools in their day-to-day life. This retrospective study includes participants from the age of 18 to 65 above which includes young adults, businessmen and Army Officers (mainly from North side). The study would include 300+ respondents and mostly who travel for work and have had interactions with Artificial Intelligence is eligible to give responses. Views on the impact of Artificial Intelligence in hotel industry was taken with a 5 point Likert scale (Strongly Agree – 1, Agree – 2, Neutral – 3, Disagree – 4, Strongly Disagree – 5). Secondary data is collected through the reviews of articles published in reputed journals such as Springer, Environment & Health, SiteMinder, SAS and so on. Google form was used to frame the questionnaire, and was used as a tool to collect data from respondents. The form first consisted of 3 demographic questions inquiring about the respondent's age, gender, occupation. Variables used in the study are Dependent variable Consumer behaviour and independent variables: Work factors, Chat-bot, Online Reservation Portal, Motion Detectors. Consumer Behavior - Consumer behavior consists of how the consumer's emotions, attitudes and preferences affect buying behavior. In this situation how they perceive using technology

- Chat-bots – A chatbot is software that simulates human-like conversations with users via text messages on chat. Its key task is to help users by providing answers to their queries.
- Online Reservation Portal – it is a software which helps travel companies to book flights, car rentals, hotels.
- Motion Detectors – A motion detector is an electrical device that utilizes a sensor to detect nearby motion.

Data Analysis

Cronbach's Alpha

It is considered that the reliability value more than (0.7) is good and can be seen that in statistics, reliability value was (0.809) which is slightly higher than the standard value, so all the items in the questionnaire are reliable.

Table 1.1 showing Model Summary of Regression Analysis Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.551a	.304	.300	.47849

a. Predictors: (Constant), AI, RS

Table 1.2 showing ANOVA test on AI tools and intention to stay

ANOVA	Sum of Squares	Df	Mean Square	F	Sig.
Regression	40.318	2	20.159	88.047	.001
Residual	92.498	404	.229		
Total	132.816	406			

Dependent Variable: Intensity to stay b. Predictors: (Constant), AI, RS

Table 1.3 showing Coefficients of AI and RS

Model	Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
(Constant)	.936	.154		6.095	.001
RS	.568	.045	.550	12.745	.001
AI	.003	.065	.002	.050	.960

a. Dependent Variable: Intensity to stay

The value of R Square is less because of few number of independent variable if we add some additional explanatory variable, then the value should be more. The value of R Square is significant as indicated by the P value (0.001) of F statistics as given in ANOVA Table 1.3 $Y = 0.936$ (Constant – Guest Intention to Stay) + 0.003 (AI) + 0.568 (RS). The above estimated regression equation indicated that Artificial Intelligence and RS positively related with guest intensity to stay is evident from the value of Coefficient (0.003), RS (0.568). The result indicated that if AI and RS increase, it expands that guest intensity to stay in hotels. The result further indicates that RS significantly influences the guest intensity to stay, whereas the impact of AI upon Guest intensity to stay is insignificant. This is evident for the P value of RS (0.0000) and the AI which is 0.960 (Table 1.3). The relative importance of the independent variable is obtained by the absolute value of the standardized regression coefficient given in Table 1.3. In the present case it shows AI TOOLS INFLUENCING GUEST IN HOTELS. RS is relatively more important than the AI in explaining the guest intensity to stay, this is because the absolute value of the standardized coefficient for AI and RS is 0.002 and 0.550 respectively. Further, to study the relationship between age group and intensity to stay ANOVA analysis was applied and depicts the following results.

Oneway ANOVA Table 1.4 showing ANOVA analysis between age and intention to stay

ANOVAa Mode	Sum of Squares	Df	Mean Square	F	Sig.
Between Group	2.983	5	.597	1.843	.103
Within Group	130.465	403	.324		
Total	133.449	408			

Table 1.5 showing relationship between age and guest intent to stay ANOVA Effect Sizes

	Point estimate	95%	Confidence upper
Eta-squared	.022	.000	.046
Epsilon-squared	.010	-.012	.035
Omega-squared Fixed effect	.010	-.012	.034
Omega-squared Random-effect	.002	-.002	.007

a. Eta-squared and Epsilon-squared are estimated based on the fixed-effect model. b. Negative but less biased estimates are retained, not rounded to zero.

The computed F statistics = 1.843, the computed F statistics is smaller than the table value, the ANOVA test is accepted. It means customer age is not significantly (0.103) impacted the guest intensity to stay in hotel.

Conclusion:

AI can be considered an assortment of advancements that will further develop the travel industry experience for all gatherings included. Besides the fact that this cutting-edge innovation give can an appealing and safe help for clients, it can likewise gather and break down fundamental information. This pandemic is also likely to have a significant impact on research agenda of hospitality marketing and management scholars. The result indicated that if AI and RS increases, it expands that guest intensity to stay in hotels, now the study proves that among the independent variable like AI (Chat-bots, Robots) and RS (Direct calls to OTA, Websites), RS is significantly important and highly influence the dependent variable i.e. guest intensity to stay thus, proves the alternative hypothesis of the study. Secondly, study also proved the second hypothesis that the RS is relatively more important than the AI in explaining the guest intensity to stay and choose a particular. Thus, this study means to break down how the mix of AI in hotels can prompt a better AI-empowered client experience. Through the results we were able to signify that there is a significant relationship between AI (Chat-bots, Motion Detectors, Voice Recognition System) and RS (Online Reservation AI TOOLS INFLUENCING GUEST IN HOTELS 69 Portal) but there is no significant relationship between age and the guest's intention to choose and stay at a hotel. The reason there was a significance is because a lot of customers prefer using online applications to make reservations, people nowadays don't usually prefer to make direct calls to hotels, rather they just click one button to make bookings for travel. The reason there is no significance to Age and a guest's intention to choose a hotel because no matter what the age, all customers look for is utmost comfort, it can come from using AI tools or they can have a traditional experience without any machine interfering. Further, study conclude a major implication that, to establish relationship between AI tools and its impact on guest's intention to choose a hotel in hospitality industry. Artificial intelligence can dramatically improve the efficiency of our offices and can enhance business that can be made by people.

Limitations and Recommendation of the study

The outcome of this study should be comprehended in light of a few limitations and shortcomings. The study small sample size, Limited access to data., Limited scope of discussions and Guests/Consumers perceive things differently from each other. The research conducted should be explored more vastly. So there is a large scope for more studies to be conducted. Various other factors, like big data analysis, machine learning, deep data mining and so on can also be considered for further studies. The current study conducted used a quantitative approach, whereas future studies can use both qualitative and quantitative approaches towards the study. The study can also be conducted with a larger number of respondents, and can include more demographic variables. The study can further be conducted in a more specified manner wherein similar hotels with similar star rating and providing similar services can be studied in further detail However, we are confident that despite the limitations mentioned above, the study results can provide valuable insights to hotel industry and other stake holders in formulating and appropriate policies and actions to eliminate the ills of a AI in the near future.

Future Scope of the study:

The study can be concentrated on more factors and departments rather than just reservations. It can include other departments where usage of Artificial Intelligence tools are quite prominent, be it Food and Beverage area or Sales department, one can even look upon Spa treatment areas where one can interact with AI. This study is just a glance at what technology can do and is ever changing and bringing in new experiences for the users, but there is always scope to do better and envision the highest form of technology.

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