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IMPACT OF ARTIFICIAL INTELLIGENCE AND SERVICE ROBOTS IN TOURISM AND HOSPITALITY SECTOR: CURRENT USE & FUTURE TRENDS

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Abstract

Every aspect of the tourist experience has been transformed and automated due to the recent development and application of advanced technology like Artificial Intelligence and robotic services. Tourism and hospitality have seen tremendous changes due to the transformation brought about by the growth of information and communication technologies (ICT). This article will review current research and literature on Artificial Intelligence (AI) and robotics use in hotels and hospitality. The study will majorly centre on three filed of AI and automation applications. First, it explores the present position and current application of artificial intelligence and automation like robotics research in daily modern contemporary society, showcasing their use in each sector of the tourism and hospitality sectors; secondly, it analysed the Artificial intelligence and robotics impact on employment and job opportunities, consumers, and as well as businesses and society at large. Lastly, it examines the possible future trends of AI and robots in the tourism and hospitality sector to see what advantages or dangers may be derived from their use.

Keywords: *Artificial Intelligence, Automation, Robotics, ICT, and Tourism & Hospitality*

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I. Introduction and Literature Review

'Artificial intelligence' was coined by John McCarthy in 1956 at the fabled Dartmouth Conference when he spoke on the science and engineering of creating intelligent robots and machines (BBVA, 2016). Artificial intelligence (AI) is the emulation of human intelligence operations by computers, particularly computer systems. Machine learning and speech recognition are only a few examples of AI applications (Ed Burns, 2021). Artificial intelligence is transforming almost all segments of any nation's economy by enabling computers to make sound decisions that lead to more effective operations (Jain, 2021). Due to the rapid growth of the tourism and hospitality sector, artificial intelligence is required for delivering services and value generation processes (Jabeen et al., 2021). Real-time engagement must be integrated with a custom-tailored experience (Chen & Liu, 2021).

Additionally, the tourism and hospitality sector must analyse many data and respond promptly to maintain their competitiveness. Artificial intelligence (AI) and automation research have recently penetrated various companies and industries, including tourism (Jabeen et al., 2021), healthcare (Li et al., 2021), manufacturing (Demlehner et al., 2021), and government (Zuiderwijk et al., 2021). A computer's ability to see, comprehend, and act in ways previously only conceivable for humans may be studied experimentally and theoretically using artificial intelligence (AI) (Qamar et al., 2021). Many years ago, manufacturing sectors began using robotics to process products to replace repetitive human labour tasks. AI and automation applications are currently being used in various industries, including transportation, medicine, education, supply chain management, and warehouse organization (Li et al., 2021). People are also taking notice of AI and automation services in the tourism and hospitality industries. With much excitement, the "unique" Henn-na Hotel opened in Nagasaki, Japan, in 2015 and has since become one of the city's most talked-about attractions (Haddad, 2020). A template for the future was viewed as having been set.

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Guest could have a unique experience at a robot-staffed hotel, and hotel owners could enjoy significant savings on staffing costs.

Meanwhile, in 2014 launching its A.L.O-robotic butler or Botlr at its Cupertino site, Aloft Hotels has become the first hotel chain to adopt robotic technology (Tables, 2021). The robot can move across the hotel to place orders. Its primary goal was to surprise guests with room deliveries. Located in Silicon Valley, the Crowne Plaza Hotel in San Jose was another early adopter of robot technology (Tables, 2021). Dash, a robot that delivers food, towels, and other hotel services, is in charge of providing these items. Dash navigates the hotel utilizing a Wi-Fi connection that is specific to the facility. In addition, AI and automation technology are making their way into other hospitality industries outside the hotel sector. For example, Wynn Resorts stated in December 2016 that it would install an Amazon Echo smart speaker in each of its 4,700 hotel rooms by summer 2017. There will be more than 6,000 abilities available for Alexa at Wynn Las Vegas, in addition to the ability to manage lighting, voice recognition system, temperature, curtains, and the television (KHARI JOHNSON, 2016). Artificial intelligence (AI) and automation science provide various chances for tourism and hospitality businesses to improve their everyday operations and guarantee that a substantial-quality service drives them to their consumers. The use of AI in the hotel sector has attracted the attention of a few researchers, but it is not enough for future research.

2. Objectives of the study

This essay evaluates the literature on Artificial Intelligence (AI) and robots and robotics use in the tourist and hospitality industries. Specifically, the research will focus on AI and robotic applications in three key categories, namely.

I. To explore the present position and current use and application of AI and robot's services in the tourism and hospitality sectors

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II. To analyse the impact of AI and automation services on three areas: employment and job opportunities, consumers, and businesses and societies

III. To examines the possible future use of AI and robot services in the tourism and hospitality sector to see what advantages or dangers may be derived from their use.

3. Research Methodology

In this review article, the literature has been reviewed systematically to explore the present position and application of AI and robot services in the tourism and hospitality sectors. In addition, the study also analyses the impact and future use of AI and robot services in the tourism and hospitality sectors to see what advantage may be derived from their use. The literature and information are obtained from various research articles, online websites, news articles, and internet blogs and news stories.

4. Conceptual Framework of the Study: Discussion

The discussion part was divided into five major segments based on the objectives of the study. The first section discussed Robotics use and its type and application in the business. The second section of the explore analysis the current position and application of AI in Hotel, Meeting, conference, and Events and Beverage and Food services. The third section of the study analysis the positive impact of AI and automation on employment and job opportunities in the tourism and hospitality sectors. The fourth section of the study examines the possible future use of AI and automation in Hotel, Meeting, conference, and Events and Beverage and Food services. In the final section, the study anticipated the challenges and dangers created by AI and robotics technology advancements.

4.1. Robotics use and application in the business

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As per the association of robot manufacturers and users, the Robot Institute of America (RIA) defines robots as "completely programmable multifunction opportunists intended to move things, goods, and materials via diverse programmed movements for the performance of a range of activities (cpentalk.com, 2021)." Globally, according to the International Federation of Robotics, 1350000 industrial robots are expected to be deployed by 2018 (Onlinemasters.ohio.edu, 2021). In recent years, the robotics industry has grown to be a significant force in the world of technology. Robots are now referred to as "intelligent physical devices" since they feature mobility, movement, and sensory capabilities that allow them to perform their intended functions (Onlinemasters.ohio.edu, 2021). Artificial intelligence (AI) and robotics research are transforming the style of people live and work culture all around the globe. It is becoming more common to see robots in places other than manufacturing plants like hospitals, universities, hotels, airports, resorts, shopping malls, and even our homes (Eiben et al., 2021). In addition to being automated machinery, robots are also being sold as consumer goods (Micle et al., 2021). If the situation calls for it, they may even be considered a friend or a partner. Surgical techniques, rehabilitation, treatment, clinician companionship, and ordinary tasks might be transformed by robotics advances (Pradhan et al., 2021). The agriculture business has aggressively pursued diverse kinds of robotic technology to assist boost productivity while reducing costs (Bogue, 2021). Meanwhile, numerous applications of automated technology are found in the military and public safety sectors. Drones, which are unscrewed aircraft, are one of the most conspicuous (Layton, 2021).

4.1.1. Type of the Robots

An International Organization for Standardization research classified robots as either industrial or service robots based on their function (iso.org, 2012). Terms used in connection to robots and robotic devices that operate in industrial and non-industrial contexts are defined in this International

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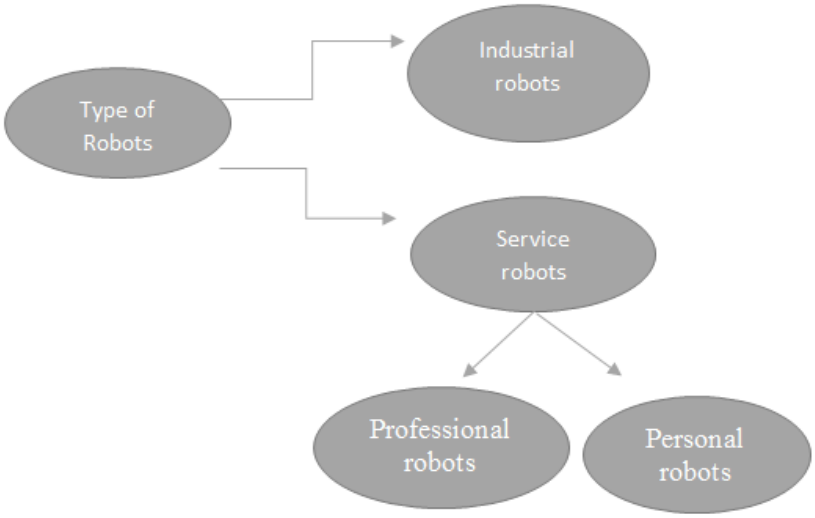
Standard. According to some researchers, there are two main personal service robots: professional and personal service robots.

Figure 1: Author creation

Type of robots



- **Industrial Robots:** In manufacturing, industrial robots are commonly utilized. In industrial contexts, they can perform simple activities such as transporting goods and conducting various programmed jobs. Robots are often more cost-effective than human workers when it comes to risky or repetitive jobs that might result in injury (sage.com, 2021). There are many potential steps and configurations for an industrial robot, which is generally a kind of joint construction. Articulated, Selective Compliance Assembly Robot Arm or Selective Compliance Articulated Robot Arm (SCARA), Cartesian, Parallel (or Delta), and Cylindrical are the most popular categories in the robot business Service Robots (Wilson, 2014). According to the International Organization for Standardization (ISO), a "service robot" is a robot that "operates and performs important duties for humans or machinery,

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except for industrial operations (iso.org, 2012)." In simple words, Service robots are robots that do essential activities for workers or machines but do not execute industrial automation applications. A robot's capacity to complete tasks based on current conditions and sensing, without human involvement, is defined by ISO 83773 as "a degree of autonomy." Human-robot interaction varies from partial autonomy for service robots to complete freedom without active human-robot involvement (ifr.org, 2021). As per the International Federation of Robotics (IFR), data on service robots include programs that focus on some degree of human-robot contact or even complete teleoperation and autonomous ones (ifr.org, 2021). Service robots are classified according to whether they are used for personal or professional purposes. In terms of construction and use, they come in a variety of shapes and structures.

- **Personal Robots:** Individuals use personal robots for non-commercial purposes at home or in other private settings. Personal robots come in two main varieties. One example is cleaning robots, such as those that mow lawns and clean floors (Garcia-Haro et al., 2021). To connect with people, immersive robots, including butler robots, are typically associated with driverless driving and touch devices and speech recognition and facial recognition technology. They may help or entertaining guests in public spaces or deliver products and services via these diverse technologies.

- **Professional Robots:** According to their name, professional organizations and businesses use them. Compared to personal robots, professional service robots have a significantly larger market Défense, industrial, transportation, and medical robots top the list of professional robots, according to these facts (Y. Wang et al., 2021).

4.2. Present position and application of AI in every Tourism and Hospitality Segments

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AI and robotics have also arrived in the tourism and travel business, and they are drawing a great deal of attention and curiosity from the customers. This analysis will focus on the present applications of AI and robotics in diverse hotel business areas, particularly service robots. The service robots used in three major segments, hotel, meeting & events, and Food and Beverage, were discussed below.

- Hotel: Service automation and robots are becoming increasingly widespread in the hotel business, from artificially intelligent chatbots that aid with customer service to handle robot assistants that improve customers' experiences (revfine, 2021). Different hotel operations have been affected by service automation and robotic technology. For example, hoteliers use self-service kiosks at the front desk to minimize waiting time and improve quality. The Henn-Na Hotel in Japan is a prominent example of the usage of service robots on the front lines of the hotel business. The Henn-na Hotel, which debuted in mid-2015, is believed to be the world's first automaton hotel (Reis et al., 2020a). Another service robot receptionist, Connie, is employed at the Hilton Hotel (revfine, 2021). It uses IBM's artificial intelligence platform to engage with guests and react to their inquiries. With each contact, the system also learns and adjusts, resulting in better responses. Service robots are used in Travelmate, where robots are used for baggage and luggage systems even outside the hotel sector (Chatterjee, 2020). It's luggage that can follow you about on its own, essentially. It is equipped with anti-collision technology and 360-degree turning capabilities. It removes the need to carry, drag, or push a bag. A chatbot is the most popular service robot application in the hospitality industry, and it may be used to provide simple customer care or perform more complicated tasks, such as reserving a hotel or trip (Calvaresi et al., 2021). The Snatch-Bot Booking Travel Template is a wonderful example of this. So particularly in the hotel sector, service robots have a variety of other applications as well. Hotel robot butlers and baggage porters employ

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various technologies, including collision detection, Wi-Fi, and artificial intelligence, to traverse hotels and offer services (revfine, 2021).

- **Meeting, conference, and Events:** Inventors are exploring methods to employ robots and other automated devices for activities that formerly required a human touch as technology becomes more advanced. For example, in the meeting and conference sector, AI and service robotics improve service and simplify meeting exhibits. As of now, robotics in the event and meetings business is mainly employed for entertainment purposes (Volpe et al., 2020). However, when it comes to creating new customer engagement and experiences, drones have been a pioneer. This has allowed event organizers and venue experts to provide their attendee's unique advertising content or fantastic memories of an event by taking aerial photographs and films from diverse viewpoints. Additional instances are hospitality robots that can greet guests and have a brief conversation with them. A 3d interactive presenter was tested during the South by Southwest Interactive convention, for example. As well as robot bartenders, you may have witnessed drone servers delivering food and dishes to the crowd. In addition, those who are unable to attend meetings can link to MantaroBots or Anybots and "roll" about the room, interacting with other attendees (vibeagency, 2018).

- **Beverage and Food services:** AI and robots are also employed in the beverage and food business, particularly in the industry's café, restaurant, and preparing and cooking sections (Tuomi et al., 2020). In particular café and restaurants, robots take orders for meals. For example, a humanoid robot named Pepper works for Pizza Hut in Japan, taking voice orders from its customers (Singh et al., n.d.). As a result of speech recognition and artificial intelligence, Pepper can communicate effectively with consumers. Pizza Hut and MasterCard have also programmed Pepper in conjunction with a payment method (Singh et al., n.d.). This means Pepper receives orders from consumers

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and processes those orders, saving time for both the restaurant and the customers.

Another example is Eatsa, a restaurant that serves quinoa bowls and is entirely automated, which opened its first location in San Francisco (Lewis, 2020). Visitors use an iPad in the hallway to place their orders, and their names show on one of the transparent LCD screen boxes in the foyer. It takes less than 2 minutes for customers to remove their personalized quinoa bowl from the package. So, with the help of these automation technologies, customer waiting times are reduced due to these robots, and human waiters and cashiers are no longer needed. The use of robotics technology in the beverage and food sector helps reduce labour costs and maintain product quality. The above examples illustrate that AI and robotics research provides various options for tourism and hospitality businesses to increase efficiency in their everyday operations and ensure consistently good quality of services to their consumers, as seen above.

4.3. The impact of AI and automation on the tourism and hospitality sectors

This section examines the impact of AI and automation services on employment and job opportunities, customers, and Businesses & society.

4.3.1. Impact on employment and job opportunities

- **Positive Impact**

Due to the fast advancement of technology, the future of the employments sector is quite unpredictable. The tourism and hospitality sector uses various AI and robotics technology; however, there seems to be little scholarly research on the influence of robots on employment. Due to two essential elements of robotics: detecting demand forecasting and planning for quality control, current AI and robotics technology may enhance hotel and restaurant operations (Blöcher & Alt, 2020). Worker cognitive abilities

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should be improved rather than directly replaced by automation (Novakova, 2020). Robots can improve the efficiency of human workers rather than replace them, which will have a beneficial influence on an organization (Vrontis et al., 2021). The robots are a great assistance to the workers and make their tasks easier.

Some researchers believe that artificial intelligence (AI) in the point-of-sale mechanism can minimize employee theft and steal in fast-food restaurants. Stealing is a serious threat to the sustainability of small businesses, such as cafes and restaurants, which often run on thin profit margins. The National Restaurant Association (NRA) claimed that staff theft cost its members approximately $8.5 billion in 2007, or 4% of sales revenue. This is a serious matter. However, managers and company leaders should not overlook the allure of quick cash and the problem of theft based on this statistic alone. AI monitoring systems that seek to maintain strict financial controls in restaurants are the most effective way to avoid theft. A previous NRA survey placed the average yearly theft per employee at $218. These are essential numbers considering a restaurant's pre-tax profit margin generally runs from 2 to 6% (Collins, 2013).

- **Create new employment opportunities**

In some sectors, robots are becoming viable alternatives to humans. In many cases, robots are more cost-effective than human labour. Due to the varied skill sets necessary in different industries, robots and AI might greatly influence humans. However, the notion that robots would make significant numbers of humans unemployed is grossly exaggerated. In addition to freeing up time for humans to pursue more demanding tasks, automation will also allow them to manage robots independently. Most experts predict that automation would create a large number of new jobs rather than eliminating them. The World Economic Forum predicts a net rise of 58 million employment. Research firm ARK Investment Management believes that automation in the U.S. would increase GDP by 5% or $1.2

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trillion over the next five years (Hanspal, 2021). Robots and artificial intelligence (AI) are replacing risky and labour-intensive jobs, which is not surprising. As robots are endowed with cognitive systems, logistics, shipping, customer support, and consumer services are likely to be the top jobs that robots take. Automated systems replace human workers for some professions to reduce risk and protect employees from potentially harmful conditions.

The history of technology and employment indicates that the detrimental influence of technology on jobs has been small or unnoticeable. For example, when ATMs (Automated teller machines) were introduced, the number of tellers per bank branch decreased. The average metropolitan bank branch had 21 tellers before ATMs, and that number dropped to 13 once ATMs were installed. As a result, the number of bank branches grew by roughly 40% as ATMs made it cheaper to operate a new unit. Bank tellers become increasingly prevalent as a result. Cashiers no longer work at banks. On behalf of the bank, they assist clients with their financial issues. Those who work in this field provide information to customers on loans and investments (Hanspal, 2021). Another example of early 1930s worries that vending machines would replace retail shop workers, which proved unfounded. It's a fact that people continue to shop at stores nowadays. As a result, most experts feel that robots or artificial intelligence can generate new employment rather than replace human workers in the workforce. Robotics' expansion and robots' ability to automate or self-repair will determine how many jobs are created (Hanspal, 2021). Finally, the research shows that robot technology will eliminate some occupations but employ more people in the long run, improving the quality of life for all people.

- **Impact of AI and robotics services on customers**

AI and automation services could not only assist in minimizing human errors and blunders, but they can also give predictive insights into the

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future. As a result, it can analyze vast volumes of data and transform them into valuable business information. In addition, the business expertise increases, allowing them to better the customer experiences they can offer to their consumers. As a result, AI will make business consumers happy and assist them in uncovering and optimizing future sales possibilities (parkersoftware, 2021). Although service robots and AI are revolutionizing the tourism and hospitality sector, they also affect consumers' service experiences and relationships with industries (Talwar, 2012). The relationship between customers and industries may transform dramatically as a result of this new technological atmosphere. An industry's front-line experience with consumers must be improved with robot technology to successfully engage customers and establish connections. In addition, automation services have transformed servicing customers. Since AI has advanced, hotels search for new methods to engage with customers electronically, enabling hotel personnel to focus on other duties instead of responding to guests' queries (Wei et al., 2013).

Language barriers may be eliminated, resulting in smooth contact with tourists from all over the world (D. Wang et al., 2012). Because of this epidemic, it's more vital than ever to rethink how customers may engage with amenities. Hotels and the developers that service them now can connect IoT devices and natural language processing (NLP) with their guest applications, resulting in revolutionary interactions for guests. Existing technology, such as digital room keys, which allow guests to open doors with their phones, is gaining popularity. Housekeeping workers can clean and prepare rooms faster when guests interact less with regularly touched interfaces (Werner, 2020).

- **Impact on Businesses and society**

There are two significant impacts of AI and automation services on Businesses and society identified in critical literature and studies.

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I. Help to increase production and decrease cost: Industrial robots are examined in most of the literature of the study. Academicians claim that robot technology has a substantial influence on industrial performance. Too far, robots have been used by both major companies and small enterprises; in addition, AI and robotics technologies will have a favourable influence on small businesses in various ways, including predicting demand and planning output (Abrardi et al., 2021). The significant financial impact of automated systems in travel and hospitality is impossible to ignore (Lv et al., 2021). There are considerable costs associated with both robots for use in the basement of a home and service robots for use in the foyer.

Regarding the application of robots, the cost will also be an issue. Several newer robots are far less costly than typical industrial robots. Robots used in manufacturing may cost anywhere from $100,000 to $500,000, whereas robots used in the hotel sector will cost anything from $20,000 to $50,000 per device (Heires, 2016). Robot Relay was placed in the Fairfield Inn and Suites in San Marcos, which has since opened. This robot serves meals, towels, and other goods in hotel guests' rooms by autonomous means. In San Marcos, the Fairfield Inn & Suites is the first hotel to use the innovation. Robotics firm Savioke charges $2000 per month for Relay (Hirsh, 2017). According to the research, robotics can reduce evening shift labour costs in hotels and other service industries. Experts in robotics predict that prices will fall as robots become more widely used in large-scale manufacturing operations. In addition, new energy and communications technologies will lower the cost of robots and their related technologies, enhance their performance, and increase their availability (Hirsh, 2017). The hotel industry's desire to use robotic technology is precise. Robotics, which are becoming increasingly popular, might improve their service to a certain amount, therefore improving their brand image and reputation. Therefore, it is dubious and uncertain if hotels will realize significant financial gains by using robot technology and lowering labour expenses. As an example, Wynn Las Vegas is installing Amazon Echos in

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each of its rooms. The Wynn Las Vegas features 2716 rooms at the Wynn site and 2034 rooms at the Encore facility, with an Amazon Echo costing $180. After performing a little arithmetic, the total amount for their first instalment will be $855,000. But the eventual maintenance price still cannot be ignored, even if Wynn gets a discount from Amazon (Vegas, 2016). When robots directly engage with customers, they may collect data and map their purchase habits.

Consequently, the hospitality sector will be able to provide personalized services shortly and achieve better consumer satisfaction. Ultimately, specific uses of robotics technology will raise costs, while others will lower them. Conclusion: Robots that are adequately used and on the right way will be the most beneficial.

II. Improve training and education: Robotics raises various challenges in education and training due to its rapid development (Tri et al., 2021). According to some robotics experts, people should worry less about being replaced by robots and instead focus on enhancing their knowledge and abilities for the robot age. Tourism and hospitality education is impacted by robotics technology. Learning about and better understanding digital technology would be an excellent place to start in the robotics industry (Mahdi et al., 2021).

4.4. Future use of AI and robotics services in the tourism and hospitality sector

This section examines the possible future application of AI and automation in the tourism and hospitality sector to see what advantages or dangers may be derived from their use. The section firstly reviews the future application of AI and automation service in three major sectors: Hotel, Meeting, Conference & Events, and Food and Beverage services.

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- **Hotel:** The use of robotics is still in its infancy, even though AI and robots have already made their way into many hotel departments. It is expected that robots will play a significant role in the hotel sector in the coming years and decades. For example, rots would wash and fold towels and linens in the housekeeping department, and consumers will be able to control lighting, air conditioning, and other devices in their rooms using voice-activated technology, such as the Amazon Echo (Vegas, 2016), which was previously detailed in addition, owners of hotels will continue to look for ways to improve technology to build an integrated telecom ordering process for the convenience of their clients. It is hoped that this technology would allow visitors' requests to be realized instantly and within minutes in the future. In the future, hotels will be entirely automated through the use of self-service gadgets and robotic technology.

- **Meeting, Conference & Events:** As previously stated, robots are primarily used in the meetings sector to entertain guests. Based on this application, robotics science might be used in the future in combination with other technologies, such as telepresence. As a result of MantaroBot's telepresence capabilities, persons located far away or unavailable may attend meetings and conferences. Robots can be used as physical presence indicators during meetings or events. In addition to displays, cameras, and mobility, MantaroBots will be equipped with a video phone call function (mantarobot., n.d.)As a result, more individuals may virtually attend meetings and conferences without incurring transport costs, and they can still communicate with others even if they are not physically present. This technology will revolutionize the meeting business. Virtual reality meetings are another comparable notion (Badamasi et al., 2021).

- **Beverage and food services:** AI can provide more advanced technologies for robotics applications in the beverage and food sector in the future. A comparable business model to the Henn-na hotel will be

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used in restaurants using the same digital asset management equipment or technology (Reis et al., 2020b). In addition, they list the future requirements for robotic eateries. For example, automated self-service gadgets or a robot waiter may allow consumers to put their orders upfront (Xiao & Kumar, 2021). On the other hand, robot chefs will make food and distribute it to customers utilizing automation technology, such as robot sushi bar servers (Berezina et al., 2019). According to some researchers, small companies will be able to compete with large chain eateries in the fast-food restaurant industry. When managed by robots, small businesses may remain productive and maintain highly effective everyday activities even though large chain restaurants have a comparative advantage in purchasing power and brand equity. Therefore, robotic management would be beneficial for smaller fast-food establishments.

4.5. The dangers created by advancements in AI and Robotics

After predicting how AI and robotics technologies may be used in the future, it is essential to analyze its growth's relevant dangers and causes. The employment of robotics in the business is becoming more popular. And there is no question that this has led to advances in safety and health. However, there are dangers and problems associated with robots, which might severely impact the working atmosphere (Gould, 2019). In addition to enhancing workplace safety, robotics offers a variety of other benefits. As a result, robots can be used to replace employees in potentially hazardous situations. As an example, robots are employed in warehouses to assist reduce the risk of workers falling. In addition, robotic equipment can reach objects that are too high for employees to access. As a result, workers required to operate aerial lift technology can be reduced or perhaps eliminated (Gould, 2019). Other industries that have benefited from robots include manufacturing and construction, as well as logistics. For example, a worker's requirement to do repetitive motion activities, which leads to

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muscle and joint problems, might be reduced by using an exoskeleton robot (Cho et al., 2018).

Some studies examine how to make the deployment of robots' technology effective in the hotel business. This might be due to the strategic positioning of hotels in a market. Service quality, market expansion, and the performance of marketing efforts are also critical factors in the success of robots or AI-assisted solutions at the advanced or professional level. In recent decades, there have been much danger of fatalities and even injuries laities resulting from worker-robot contact. Some tourist and hospitality companies are concerned about the hazards and security of implementing Ai and robots because of their accessibility and consistency. They may even "fire" robots if they have certain faults.

5. Conclusion of the Study

AI and robotics innovation have already infiltrated diverse areas in the tourism and hospitality industry. Most of the robots employed in the tourist hotel sector are service robots, as it is a service sector. A primary focus of this review is on the use of professional service robots in the hotel and hospitality sector. Robots are working at the front desk, cleaning, and receptionist departments of hotels. Robots could be employed as waiters, bartenders, cooks, and delivery drivers in the food and beverage sector. Whether attending conferences or trade shows, robots are there to entertain attendees while promoting the company's products. As the robotics business grows, the influence of AI and robots is becoming increasingly important. In this way, artificial intelligence (AI) may boost daily activities by enhancing employees' capabilities. As a plus, a robotics control system may prevent internal staff theft from occurring in the workplace. Robots may replace a few human employments, but they will also generate new ones on the job market. In terms of workforce and job employment, artificial intelligence and robots have a beneficial influence.

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As a result of these advancements, the hotel sector intends to enjoy the benefits and increase automation. With the help of other technology, robots will be used for meetings and activities. Specifically, the use of telepresence, which allows people to engage together in a conference without actually being there, is fascinating. The tourism and hospitality industries need to invest in artificial intelligence and robotics to make it failsafe. The most significant danger of using robots in the hotel sector is privacy and cyber security because most robots require web access. So, these new systems must be protected from cybercriminals and reprogrammed to prevent the risk. Robotics and artificial intelligence (AI) in the hotel and tourism sector is still mostly unexplored study areas. Future work might investigate the following areas: Where should automated robots be positioned in hospitality, restaurant, or conference to affect customer impressions of robots. Various types of robots have already made their way into our daily lives. People have much work ahead of them if they want to maximize the use of AI and robots and make their job even more accessible.

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