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PERCEPTION OF ARTIFICIAL INTELLIGENCE IN THE RESTAURANT INDUSTRY: IDENTIFYING CHALLENGES AND BENEFITS

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Abstract:

Artificial Intelligence refers to the ability of a computer, robot, programmable gadget, or software program to carry out tasks and processes. AI in the hospitality sector refers to the application of cutting-edge technology to enhance several facets of hotel operations and guest service. Artificial Intelligence (AI) is gradually & progressively being used in the hotel & restaurant industry to improve proficiency & customer experience. Various stakeholders hold varied viewpoints regarding the awareness & practical use of AI in the restaurant industry. This research aims to explore the perception of AI in restaurants by identifying both the challenges and benefits of its adoption from the point of view of customers. AI offers numerous advantages, such as faster service, reduced human errors, better inventory management, and personalized customer interactions. Certain challenges include job displacement, loss of human interaction, high implementation costs, and data privacy risks. Thus, by addressing challenges and leveraging benefits, restaurants can adopt AI in a way that enhances both operational efficiency and customer satisfaction along with competitive advantage. This research provides insights on how customer perceives AI implementation in restaurants by stating its pros & cons. The research suggested ways for its acceptance & successful implementation.

Key words: *Artificial Intelligence, perception, benefits & challenges*

Introduction:

In today's digital era, business has realized the importance of incorporating AI systems for having a cutting-edge technology to gain advantage over competitors. The restaurant business is growing due to a larger working population, higher demand for food variety, and the convenience of apps offering discounts and offers. Today restaurants need to compete by providing various facilities such as AI Chatbots & Virtual Assistant, Kiosks etc to provide convenience & personalized service Today youngsters have adopted technology at a very early & expect services at the press of a button. Hence restaurant need to update & upgrade their systems in terms of operating, managing logistics, smarter ordering & delivering which would drastically reduce time & man force Some apprehension remains among people who prefer the traditional restaurant experience, where they are greeted and understood by humans for personal interaction. Thus, restaurants would need to balance both these expectations of customers to fulfill their attempt to cater to all. Artificial intelligence would replicate human intellect & carry out various tasks in making the operations more effective & advantages for those who change with changing times.

Objectives:

1) To evaluate how AI-based services, affect customer's overall restaurant experiences.

2) To analyze customer perception, awareness, preference regarding the use of artificial intelligence (AI) in restaurants.

3) To explore the challenges customers, face with AI in restaurants, analyzing their impact on satisfaction, trust, and adoption.

4) To study the perception of customers on impact of AI among restaurant owners.

Literature Review:

According to a study by Altman in 2023, digital technology has evolved in less than a generation faster than biological evolution, which occurs over thousands of years. In a research paper published in (2023) Daradkeh et al. stated that implementing digital transformation can disrupt the industry and compel businesses to respond strategically to remain relevant and add value to their services. A study by Catherine Prentice et al. 2020,aimed to evaluate customer satisfaction with the service provided by artificial intelligence. The study found that AI has become an integral part of the services offered by various providers to influence customer experience, attitudes, purchases, and loyalty. The standard of AI services is required to be upgraded to fulfill customers' expectations and enhance their satisfaction.

Research Methodology:

This is a conceptual paper based on primary data collected from 58 respondents regarding their view & acceptance level of using AI based tools in restaurants their positive aspects & apprehension in accepting such technology. Also, secondary data collected from books, magazines, research papers & articles published in journals.

Data Interpretation: -

1. **Mention your age category**

   The data shows that 75.9% of respondents are below 25 years old, while smaller percentages are in the 26-35 (17.2%), 36-50 (5.2%), and 50 & above (1.7%) age groups.

2. **Mention your gender**

   The data shows that 56.9% of respondents are female, while 43.1% are male, indicating a slightly higher proportion of females in the group.

3. **What is your highest level of education?**

The data shows that most respondents (48.3%) have completed post-graduate studies, (27.6%) has undergraduate degrees, (22.4%) undergraduate level.

4. **Describe your monthly income & allowance.**

   The data shows that most respondents i.e. 51.7% earn (below 10,000), while 5.2% earn between (31,000-40,000), 15.5% have monthly incomes of (41,000 or more).

5. **Which of the following AI assistance are you aware of?**

   It is seen that 81% of respondents' favor chat bots and virtual assistants, followed by 75.9% for self-ordering kiosks, 74.1% for AI in payment processing, 60.3% for discounts and loyalty programs, and 34.5% for robotic waiters and delivery systems."

6. **I would prefer to visit a restaurant that uses AI for ordering and service.**

   The data reveals that 13.8% of respondents strongly agree with preferring a restaurant that uses AI for ordering and service, while 34.5% agree. Around 43.1%, are neutral on the matter. A smaller percentage disagree (6.9%) or strongly disagree (1.7%).

7. **Restaurants with AI-based services are more appealing to me.**

   The data shows that 12.1% of respondents strongly agree, 36.2% agree, and 37.9% are neutral. Meanwhile, 12.1% disagree, and 1.7% strongly disagrees.

8. **I would be confident & comfortable using AI-based tools in restaurants for ordering, billing etc. through apps & kiosks.**

   Seen that 71.6% of respondents are confident and comfortable using AI-based tools in restaurants for ordering and billing through apps and kiosks, while 3.4% disagree."

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9. **I think AI adoption in restaurants would make the service faster and more efficient.**

Data states that 68.9% of respondents believe AI adoption in restaurants would make service faster and more efficient, while 24.1% are neutral and 6.8% disagree or strongly disagree.".

10. **AI based tools can provide customized food recommendations & preference in selecting restaurants for customers.**

AI-based tools can personalize food recommendations and restaurant choices, with 68.9% of respondents agreeing or strongly agreeing.

11. **I believe AI technologies could improve the overall dining experience in restaurants**

Around 51.8% of respondents believe AI technologies could improve the overall dining experience in restaurants, while 39.7% are neutral and 8.6% disagree or strongly disagree."

12. **I may prefer human interaction over AI-powered service.**

"The data shows 75.9% of respondents prefer human interaction over AI-powered service, while 15.5% are neutral and 13.8% disagree or strongly disagree."

13. **AI-based services in restaurants could be complicated to use.**

Almost"48.2% of respondents believe AI-based services in restaurants could be complicated to use, while 51.8% are either neutral or not concerned about the complexity."

14. **I would be concerned about the security of my personal information when using AI services.**

"With 74.1% concerned about personal information security, data privacy is a key consideration for customers when using AI services in restaurants."

15. **Technical issues in AI systems could disrupt my restaurant experience.**

The data shows that 24.1% of respondents strongly agree and 36.2% agree that 24.1% are neutral, and 15.5% disagree or strongly disagree.

16. **Reduced human interaction in AI-driven services would make the experience less personal.**

Data states that 65.6% feeling that reduced human interaction makes AI-driven services less personal, customer preference for a human touch remains strong in the dining experience."

17. **AI implementation in restaurants enhances order accuracy and reduces errors in restaurant operations.**

It is seen that 58.7% recognizing AI's role in improving order accuracy and reducing errors, many see it as a valuable tool for enhancing restaurant operations.".

18. **AI technology is transforming the restaurant industry positively.**

The data shows that 10.3% strongly agree and 48.3% agree that technology is positively transforming the restaurant industry. Meanwhile, 32.8% are neutral, and 8.6% disagree or strongly disagree.

19. **AI adoption is essential for staying competitive in the restaurant industry.**

With 65.6% of respondents acknowledging AI as key to staying competitive, the restaurant industry is shifting towards more tech-driven solutions, even as a minority remains neutral or skeptical."

20. **The high cost of AI implementation is a significant barrier for restaurants.**

The data shows that 17.2% strongly agree and 41.4% agree that the high cost of AI implementation is a significant barrier for restaurants. Meanwhile, 29.3% are neutral, and 12% disagree or strongly disagree.

21. **Restaurant owners and employees may lack the technical skills to implement AI effectively.**

    The data shows that 15.5% strongly agree and 51.7% agree that restaurant owners and employees may lack the technical skills to implement AI effectively. Meanwhile, 25.9% are neutral, and 6.9% disagree or strongly disagree.

22. **I believe restaurants should invest more in AI-driven technologies.**

    The data shows that 13.8% strongly agree and 44.8% agree that restaurants should invest more in AI-driven technologies. Meanwhile, 32.8% are neutral, and 8.6% disagree, 1.7 %strongly disagree.

23. **AI given information can help restaurants owners to optimize their menu & pricing for competitive advantage.**

    "With 70.7% agreeing that the information can help optimize menus and pricing, many see it as a valuable tool for restaurant owners seeking a competitive edge."

24. **AI can help restaurants manage their reservations, wait list & offers in more strategic manner.**

    The data shows that 17.2% strongly agree and 56.9% agree that AI can help restaurants manage, 17.2% are neutral, and 8.6% disagree or strongly disagree.

25. **I feel that AI could replace human staff in restaurants to some extent.**
    "With 50% of respondents believing AI could replace some human staff in restaurants, there's a divided opinion on how far technology should go in reshaping the workforce."

Findings:

1. AI adoption in restaurants is more popular among tech-savvy, younger individuals, with older age groups showing lower engagement, possibly due to less exposure or interest in AI.

2. AI is seen as a tool for increasing efficiency, personalization, and overall service quality in restaurants, making dining more convenient and enjoyable.

3. A strong preference is seen for human interaction, driven by the desire for personalized service and emotional connection.

4. Respondents open to adapt if the technology simplifies the experience.

5. Security concerns are present due to worries about privacy and data breaches, particularly in payment processing and personal information sharing.

Recommendations:

1. Restaurants could emphasis on how AI can heighten productivity, convenience, and customize to appeal to customers seeking an easier, and enjoyable dining experience.

2. To some extent AI operations must maintain human interaction to offer personalized service which remain valued by many customers.

3. Restaurants should ensure that their AI systems are user-friendly to encourage broader adoption & reduce AI complexity in it's acceptance.

4. Security & privacy being the biggest concerns for customers, Restaurants should invest in robust security protocols to reassure customers about the safety of their personal information sharing & payment processing.

5. To remain competitive & ahead in digital age & to optimize operations, restaurants should implement AI tools for managing reservations, waitlists, and offers for better service and a personalized experience.

Conclusion:

Artificial intelligence (AI) is revolutionizing the restaurant business by increasing operational effectiveness, boosting customer satisfaction, and

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providing insightful data for decision-making. Although there are numerous advantages, its effective use hinges on striking a balance between innovation and real-world issues

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