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Original Research Article

THE ROLE OF ARTIFICIAL INTELLIGENCE IN ENHANCING USER SATISFACTION

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Abstract:

Artificial Intelligence (AI) has transformed several industries through process automation, enhanced decision-making, and experience personalisation. Because of its capacity to evaluate enormous volumes of data, businesses can develop more effective, customised solutions for customers. User satisfaction is critical to business success because it encourages customer loyalty, retention, and goodwill. The possibility that happy users would return and recommend the services to others promotes long-term growth. The study's objective is to evaluate how AI can improve user satisfaction. The study employed the structural equation model as its methodology. The study's conclusions showed that there is a significant impact of operational efficiency, personalization and customer experience, and trust and security on user satisfaction.

Keywords: *Artificial Intelligence, Structural Equation Model, User Satisfaction.*

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Introduction:

In today's fast expanding digital landscape, customer happiness and retention are now essential success factors, particularly for service-oriented organisations (Prentice, Dominique Lopes, & Wang, 2020). The way organisations handle customer satisfaction and service has fundamentally evolved as a result of breakthroughs in "artificial intelligence (AI), machine learning (ML), the Internet of Things (IoT), blockchain, and big data" (Alam, 2020). Companies may now anticipate customer preferences, customise messages, and improve overall service quality thanks to these advancements, which enhance customer satisfaction and increase customer loyalty (Prentice, 2023). Furthermore, advanced natural language models like ChatGPT have created new opportunities for customer service by allowing companies to automate conversations, reply promptly, and encourage more personalised and compassionate interactions.

AI and machine learning enable businesses to predict client wants, examine customer behaviour, and provide recommendations that improve the calibre of their offerings. By using IoT to gather real-time data from connected devices, businesses can monitor and improve the customer experience in real-time (Rane, 2023; Prentice, 2023). Blockchain guarantees the confidentiality and openness of customer data, promoting trust, while big data analytics assists companies in extracting actionable insights from enormous databases to better understand customer preferences.

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ChatGPT gives organisations a cutting-edge tool to speed up client interactions by producing responses that mimic those of a human, providing a scalable, efficient, and personalised approach to customer care. These technologies work together to provide a powerful ecosystem that improves service quality rather than operating alone (Ifekanandu et al., 2023). By taking a holistic approach that incorporates the integration of AI, IoT, Blockchain, and Big Data, businesses may increase customer happiness and loyalty (Aguiar-Costa et al., 2022). Customer expectations are rising in the age of digital transformation, making the use of these technologies essential to maintaining competitive advantage.

The general contentment a user feels when using a system, service, or product is referred to as user satisfaction. It is affected by several things, including as the service's responsiveness, quality, convenience of use, and capacity to meet or surpass user expectations. Fostering customer loyalty, promoting recurrent engagement, and producing good referrals all depend on high levels of user happiness. Constructive feedback from happy customers is more likely to be given, which can help companies enhance their products and maintain their competitiveness. Maintaining high levels of satisfaction is essential for long-term success and guaranteeing client retention in the digital age, where customers have many options.

Review of Literature:

1. **Sudenaz, Ceren, Ünlü. (2024).** examined how AI-driven personalisation may be incorporated into user interfaces to improve user experience, with an emphasis on real-time customisation, adaptive design, and predictive analytics. In applications including e-commerce, healthcare, and education, the study found that AI-driven personalisation greatly increased customer engagement, contentment, and efficiency. It demonstrated how dynamic interface adjustments to suit the demands of specific users are made possible by machine learning algorithms and behavioural data. But problems including algorithmic prejudice, data ethics, and privacy issues were noted as major obstacles.
2. **Yurui, Hu. (2024).** examined user behaviour, satisfaction levels, and preferences to determine the causes of variations in user acceptance and satisfaction using AI-generated video tools. The study found that, in addition to familiarity and educational attainment, usage frequency and data security concerns were important determinants of user satisfaction. Ridge regression analysis revealed that frequent users indicated reduced happiness because of data security concerns, functionality-focused users had the highest satisfaction, and occasional users reported high satisfaction.
3. **Marran, Aldossari. (2024).** investigated user experiences using AI-assisted decision-making, emphasising user interface design, system correctness, and transparency. The study made clear how crucial accuracy and dependability are to AI systems' ability to satisfy users. While user-centric interaction design increased overall happiness, transparency in decision-making processes was found to alleviate ethical issues and foster confidence. The dynamic character of user experiences, which is impacted by shifting cultural norms and trends, highlighted the importance of being alert when adjusting to new technology environments.
4. **Nidhi, Gulati., et al. (2024).** examined how AI-powered personalisation in digital libraries might improve user happiness, engagement, and marketing efficacy in a range of cultural and economic contexts. AI-driven

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personalisation greatly increased customer pleasure and loyalty in digital libraries, according to the study. Cultural and economic settings affected the efficacy of AI-driven marketing efforts, with localised approaches showing greater results. Culturally sensitive and economically relevant techniques had the most impact when they were customised to individual user preferences, according to interaction analyses.

5. **Feras, Mi, Alnaser, et al. (2023).** created an integrated research platform to investigate user acceptance and satisfaction with AI-enabled digital banking using the expectation confirmation paradigm. The study found that, although trendiness and customisation did not affect user satisfaction with digital banking, elements such as "expectation confirmation, perceived performance, visual attractiveness, problem-solving, and communication quality" did. The structural model showed a significant difference in user acceptance of AI-enabled digital banking (R2 = 48.3%) and user satisfaction (R2 = 51.1%). With Q2 values of 0.449 for contentment and 0.493 for acceptance, the model's predictive ability was likewise quite high.
6. **J., G., Shin., et al. (2019).** examined how the service industry may improve customer pleasure, loyalty, and service quality by integrating ChatGPT, Blockchain, IoT, AI, and ML. The study found that by combining cutting-edge technologies like AI and ML, personalised customer experiences were made possible through preference prediction, real-time support, and process automation. Blockchain enhanced transparency, data security, and trust—all of which are critical for enduring client relationships—while IoT enabled smooth and integrated service environments. Big Data aided in service optimization by offering insights into consumer behaviour. ChatGPT reduced wait times, improved service efficiency, and replicated human-like conversation, all of which greatly increased consumer engagement.

Objectives of the Study:

1. To evaluate the role of AI in enhancing user satisfaction
2. To give appropriate suggestions for improving the use of AI to increase user satisfaction.

Hypothesis:

H_1: The impact of Personalization and Customer Experience on user satisfaction is significant

H_2: The impact of Trust and Security on user satisfaction is significant

H_3: The impact of Operational Efficiency on user satisfaction is significant

Research Methodology:

Aspect	Details
Sample Size	200 individuals using digital financial services (Minimum necessary sample size: 173)
Effect Size	0.3
Statistical Power	0.9
Number of Latent Variables	4
Number of Observable Variables	19
Probability Level	0.05
Sampling Method	Non-random purposive sampling
Data Gathering Methods	Primary and secondary data
Analytical Method	Structural Equation Model (SEM)
Analytical Tool	SMART PLS

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Data Analysis and Interpretation:

Table No: 2 Reliability and validity

Path	Beta Coefficient	T-statistics	P-Value
User Satisfaction	0.793	0.795	0.565
Personalization and Customer Experience	0.891	0.890	0.618
Trust and Security	0.893	0.891	0.580
Operational Efficiency	0.901	0.901	0.646
As all the values are as per the recommended criteria of Hair et al 2013, we can conclude that there exist an adequate reliability and convergent validity.			

Figure No: 1 SEM model

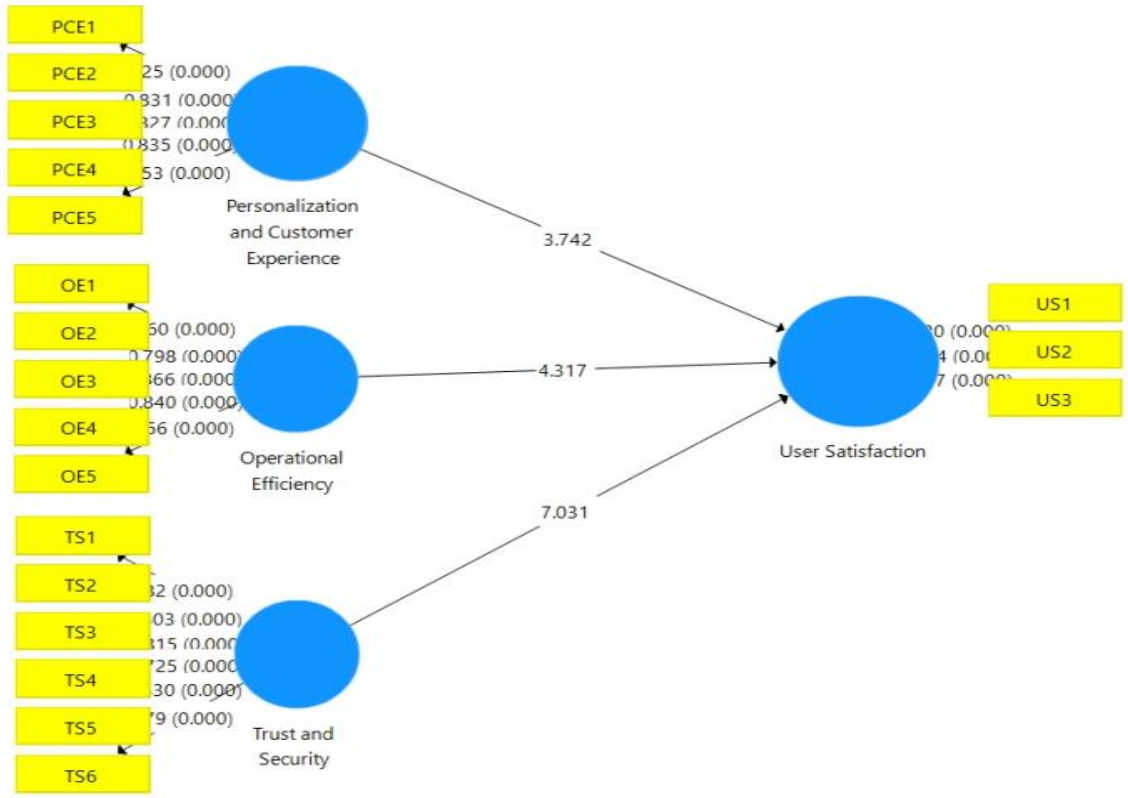

Table No: 2 Hypothesis testing

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Path	Beta Coefficient	T-statistics	P-Value
Operational Efficiency → User Satisfaction	0.264	4.317	0.000
Personalization and Customer Experience → User Satisfaction	0.198	3.742	0.000
Trust and Security → User Satisfaction	0.388	7.031	0.000
P (value) < level of significance 5% thus Ho is rejected and H1 is accepted in all the cases indicating a significant impact of operational efficiency, personalization and customer experience, and trust and security on user satisfaction.			

Conclusion:

The study concludes that by influencing operational effectiveness, personalisation, trust, and security, AI dramatically raises user pleasure. Faster and more dependable interactions are made possible by AI-driven systems that maximise efficiency; these features are essential for enhancing user experience. AI-powered personalisation enables services to be customised to each user's tastes, increasing their sense of value and engagement. Furthermore, building user confidence in AI systems requires maintaining security and trust, particularly as worries about data privacy and exploitation increase. According to the research, businesses using AI should concentrate on three crucial areas to boost consumer happiness. Businesses must give these elements top priority as AI develops to preserve and improve their client connections.

Suggestions:

- Businesses should concentrate on increasing operational effectiveness to guarantee AI systems are responsive, dependable, and quick, which will increase user happiness.
- AI developers should enhance the personalization capabilities of AI systems, adapting them to the needs and preferences of individual users, in order to increase the sense of connection that customers have with the service.
- Businesses utilizing AI technologies ought to improve security procedures and trust in order to safeguard user data, which will boost confidence and encourage enduring client loyalty.
- AI administrators should continuously gather and analyze user feedback to ensure ongoing improvements in user satisfaction, fix any issues, and enhance AI systems.
- Businesses integrating AI into their services must ensure that AI technologies work seamlessly with existing systems to provide a consistent and efficient user experience across all platforms.

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