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THE INFLUENCE OF AI-ENABLED SERVICE QUALITY AND E-WOM ON CUSTOMER TRUST: A PATHWAY TO SUSTAINABLE SOCIAL SERVICES

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Abstract
The integration of artificial intelligence (AI) in service industries is reshaping consumer experiences, particularly in social service sectors where trust and engagement are critical. This study examines how AI-enabled service quality and electronic word-of-mouth (E-WOM) influence customer trust and contribute to the sustainable adoption of social services. As digital innovations continue to transform service accessibility, understanding these technological drivers is essential for building trust-based, consumer-centric service models. Quantitative research approach was used and data was collected from 500 respondents through structured survey. Finally, this paper analyzes the relationships between AI-enabled service quality, E-WOM, customer trust and repurchase intention based on PLS-SEM. The results show that customer trust is facilitated by both AI enabled service quality and E-WOM, which improves the repurchase intention. Furthermore, customer trust mediates the relationships between AI-enabled service quality, E-WOM and repurchase intention. At the end, these insights inform future social service providers, policymakers and also the technology driven initiatives about the importance of ethical AI deployment, transparent communication with the help of AI and the trust building strategies. Using AI and digital engagement well can help social services heighten trust and ensure a sustainable long term. Further research on AI is needed to find industry specific applications and regulatory challenges and to investigate other moderating factors of AI's contribution to sustainable social service ecosystem.

Keywords
Social services, artificial intelligence (AI), electronic word-of-mouth (E-WOM).

1. Introduction

The application of artificial intelligence (AI) and big data analytics have resulted in the need for service industries to enable businesses like providing better service quality, a personalized customer engagement along with better decision making (Huang & Rust, 2021). In the telecommunications, banking, e-commerce, hospitality and social services industries, efficiency, trust and satisfaction of the customers are the key aspects for the business success and efficiency of the business and here AI driven solutions are widely used. Given predictive analytics, machine learning, automated service support systems and recommendation algorithms, organisations are able to predict what customers need and improve the service delivery (Dwivedi *et al*., 2021). In digital era, retaining and maintaining relationships is a lot for businesses. AI enabled service quality plays central role in determining customer perception and buyer decision as well as for repeated transaction (Mariani *et al*., 2021). The features of personalized interactions, real time

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responsiveness and more enhanced user experience leads to more customer satisfaction and trust (Cheng & Jiang, 2023). The service models based on the use of the AI and big data by the firms allow them to gain competitive advantage by having more attractive brands and higher rate of repurchases (Grewal *et al*., 2020).

As trust plays a critical role in shaping customer behavior in AI powered environment, where issues related to data privacy and security, as well as transparency in algorithm's behavior are of importance in making decisions (Wirtz *et al*., 2018). Being digital services, consumers seek more and more information through electronic word of mouth (E-WOM) - online reviews, social media discussions and peer recommendations - to assess experiences' credibility (Filieri *et al*., 2021). E-WOM has a widespread influence beyond personal network and may be one of the strongest forces of customer trust and brand (King *et al*., 2014). As AI and big data gain in popularity in the service industry, little research is given to the interaction among AI enabled service quality, E-WOM, trust and repurchase intention. It is known from prior service studies that while they examine the individual effects of AI on service efficiency and E-WOM on consumer behaviour, the mediating role of customer trust in this relationship has not yet been explored (Chatterjee *et al*., 2022). This study attempts to bridge this gap through the investigation of the influences of AI driven service quality and the E-WOM on customer trust, which in turn, is predicted to affect repurchase intention.

Although more and more consumers are becoming dependent on AI services, privacy, security and human conversation concerns still exist (Shankar, 2021). Although AI increases efficiency, its effectiveness for building emotional contact and trust, however, is still a challenge (Lu *et al*., 2022). Despite investing in AI - based innovations, organizations do not have frameworks to evaluate the impact of these innovations on customer trust and loyalty (Rust & Huang, 2021). Likewise, the credibility of the online reviews and digital recommendations relies on the trust of the consumers as fake reviews and misinformation might lead to the loss of the consumers trust on E-WOM (Zhu & Zhang, 2010). In order to understand how digital communication shapes trust and repurchase decisions, service providers should take note.

The findings of this research demonstrate the importance of customer trust as a mediator of the relationship between AI enabled service quality, E-WOM and repurchase intention. Building on the concept of AISA trust, it regards transparency, reliability and data security as trust building factors in the AI driven service environment (Parasuraman *et al*., 2020). Furthermore, it assesses how the credibility, volume and valence of E-WOM affect trust formation process and influence the repeat purchase behavior (Cheung *et al*., 2012).

2. Literature Review

This study also defines repurchase intention as consumer willingness to buy service packages more in future times (Zeithaml *et al*., 1996). The measurement is directly related to business sustainability and customer loyalty. According to Kumar and Reinartz (2016), repurchase decisions of the customer are affected by multiple elements including service quality and customer satisfaction; trust and perceived value. AI powered predictive analytics and automated recommendations and chatbots provide valuable help in the digital service industry where high quality repurchase decision is managed by the industry (Rust & Huang, 2021). If customers see AI based services raise both convenience and accuracy while keeping it personalized, it ends up increasing their purchase retention (Chatterjee *et al*., 2021). Enhancing service quality through the use of AI and Big Data

can affect the repurchase intention. The application of AI services, for instance, personalized recommendations, real time customer support and much more automated responses allows improved customer experience (Kaplan & Haenlein, 2019). According to studies, AI contributes to enhanced service quality that leads to customer satisfaction where as a result customer's repurchase intentions are stronger (Gursoy *et al*., 2019). Features of artificial intelligence driven service include dynamic pricing, predictive maintenance and virtual assistant that smoothen the operations and encourage the return of customers (Luo *et al*., 2021). Despite this, data privacy and AI biases can be concerns blocking trust and thereby diminish the effect of AI on the repurchase behavior (Shin, 2020).

The foundation requirement to be working on AI services is building customers' trust. Open systems with dependable machines that provide proper outputs on the base of the set ethical practices (Hoff & Bashir, 2015) are what AI based service acceptance originates from. This is as they need to trust the level of accuracy and unbiasedness in AI driven systems. Sharma et al. (2020) demonstrated that, with transparent and trustworthy decision making process from AI - Big Data services, customer trust can be established on the system. Consequently, the collaboration of AI chatbots with recommendation algorithms and the prediction analytics improves the service operations, making customers more confident to their service providers (Chung *et al*., 2020). Customers trust formation is challenged by customers who do not believe in the notion of nonexistent human interaction, combined with the threats of privacy and algorithmic bias (Kim *et al*., 2009).

Electronic word-of-mouth (E-WOM) refers to online customer reviews, ratings and feedback that influence consumer trust and purchase decisions (Cheung & Thadani, 2012). Scientific research provides evidence that positive E-WOM produces trustworthiness perceptions leading to customer trust establishment (Filieri *et al*., 2018). E-WOM has become the more trusted form of customer feedback than traditional advertising so it stands as a strong trust-determining factor for consumers (Ismagilova *et al*., 2020). Service industries benefit greatly from E-WOM because customers heavily depend on peer reviews to determine service quality as per Park et al. (2014). The effects of negative E-WOM on trust are so powerful that businesses who use AI-driven service models must prioritize reputation management according to Zhang et al. (2020).

Research shows that repurchase intention closely relates to trust according to Gefen et al. (2003). Service providers who establish trust with customers create conditions for enduring partnerships alongside multiple future transactions (Morgan & Hunt, 1994). Research shows that trust eases customers' perception of risk and raises their confidence levels so they find it simpler to buy again (Kim *et al*., 2009). The trust customers have in AI-enabled services serves as a fundamental factor to preserve operational stability alongside brand customer faithfulness (Oliver, 2015). Businesses which focus on developing trust-building strategies through data privacy protection as well as bias reduction mechanisms and transparent practices will retain their customers more effectively (Wang *et al*., 2018).

Several research findings indicate trust from customers as one of the important variables, constituted as the mediator between AI enabled service quality and later purchase decisions. When customers have trust in these systems, the effects of improving the service efficiency with AI functions are strengthened in customers' repurchase decisions (Chatterjee *et al*., 2021). Trust can be regarded as a psychological connection to reduce uncertainty and fulfill customer assurance for reliability of AI service (Hoff &

Bashir, 2015). Sharma et al. (2020) and another research (2002) show that companies that integrate AI in personalized services create trust with customers thereby making them have stronger repurchase intentions.

Customer trust that is impacted by E-WOM is because of which repurchase intention is affected (Hanaysha, 2011). According to the study of Zhang et al. (2020) the credibility, volume and valence of the online reviews contribute to the development of consumer trust. Results of the study show that trust plays the role of a basic link between matrix of E-WOM effects in modification of purchasing decisions (Wang *et al*., 2018). Internet positive recommendations contribute to trust levels and reduce uncertainties on product purchase that leads to greater consumer loyalty (Hennig-Thurau & Walsh, 2004). Adding AI-driven sentiment analysis and automatic reputation management systems, businesses will be able to improve customer trust and as a result, the relation between E-WOM and customer intention to repurchase (Ismagilova *et al*., 2020).

3. Methodology

The research analysis uses quantitative methods to understand the connections among AI-Big Data-enabled service quality and electronic word-of-mouth together with customer trust along with service package repurchase intention. The research team distributed structured questionnaires to 500 participants to obtain data that would provide enough participants to perform solid statistical analysis. The research analyzed participants who accessed AI-enabled telecommunication, e-commerce and banking services in their previous usage. This study utilized non-probability convenience sampling to collect data from participants who used AI-enabled services in their previous experiences because such respondents offered applicable perspectives.

The research questionnaire derived its content from established measurement scales in previous studies to guarantee validity in addition to reliability. The survey distribution contained sections regarding participant demographics in addition to evaluations of AI-Big Data-enabled service quality, customer trust, electronic word-of-mouth and their buying behavior. The measurement included a five-point Likert scale that ran from 1 (strongly disagree) through 5 (strongly agree). Standards in data accuracy received improvement through a prior pilot study of restricted survey respondents before implementing the expanded data collection process.

SmartPLS software served to analyze the data through Partial Least Squares Structural Equation Modeling (PLS-SEM). The researchers selected PLS-SEM because this method works best with complex models having latent variables and mediation effects. The research conducted a two-step analytical process starting with construct validity and reliability assessment through Cronbach's alpha and composite reliability together with Average Variance Extracted (AVE). Testing took place in two stages of the research process. First came the measurement model assessment followed by a verification of the structural model links between AI-Big Data-enabled service quality and E-WOM and their connections to customer trust and repurchase intention. Researchers evaluated the mediating effect of customer trust by conducting bootstrapping procedures.

Everything in this research was conducted based on ethical standards. Prior to the study each research participant received necessary details about the research aims and provided consent for participation. The study guaranteed full privacy through complete protection of participant anonymity along with confidentiality from start to finish. The study strengthens research about AI in service industries by delivering empirical proof

regarding the relationship between AI-enabled service quality and digital communication on consumer trust and repurchase intentions.

4. Data Analysis

4.1. Measurement Model

All constructs demonstrate appropriate internal consistency and convergent validity based on the reliability and validity analysis results. Internal reliability of the constructs is verified through Cronbach's Alpha values above 0.7 while AI-Big Data (AIBD) Enabled Service Quality achieved 0.873 and Repurchase Intention of Service Packages reached 0.908. The reliability assessment is additionally supported by rho_A values. The Composite Reliability (CR) scores of all constructs remain above 0.7 which verifies internal consistency of the model while the Average Variance Extracted (AVE) results exceed 0.5 except for Electronic Word of Mouth (E-WOM) (0.501) and Customer Trust (0.506) that reach the threshold but barely. The measurement model exhibits sound reliability together with validity which produces stable construct measurement.

Table 1. Reliability analysis

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
AI-Big Data (AIBD) Enabled Service Quality	0.873	0.879	0.904	0.611
Customer Trust	0.753	0.757	0.828	0.506
Electronic Word of Mouth (E-WOM)	0.738	0.757	0.826	0.501
Repurchase Intention of Service Packages	0.908	0.909	0.925	0.607

4.2. Structural Equational Model

The structural equation model data shows the degree of importance between these constructs and their connection strength. The structural equation analysis shows that all directional relationships exhibit positive values thus indicating that AI-Big Data Enabled Service Quality together with Customer Trust and Electronic Word of Mouth (E-WOM) generates positive effects on Repurchase Intention of Service Packages. T-statistics prove greater than 1.96 and P-values stay less than 0.05 to establish statistical significance in all relationships. Repurchase Intention shows a moderate positive relationship with E-WOM (0.192, $p = 0.001$) but Customer Trust demonstrates the highest effect (0.425, $p = 0.000$). The influence of AI-Big Data Enabled Service Quality on Customer Trust (0.163, $p = 0.000$) and Repurchase Intention (0.104, $p = 0.015$) is significant and both Customer Trust (0.161, $p = 0.011$) and Repurchase Intention show a direct relationship. The research results confirm theoretical predictions about the influence of AI-driven service quality combined with E-WOM because these elements drive up customer trust and repurchase intentions.

Customer Trust acts as a major intermediate factor which strengthens the connection between AI-Big Data Enabled Service Quality and Electronic Word of Mouth and Service Package Repurchase Intention. The connection between AI-Big Data

Enabled Service Quality and Repurchase Intention through Customer Trust proves statistically significant yet shows a weak indirect effect of 0.026 according to T-statistics at 2.013 and P-values of 0.045. Research findings show that E-WOM indirectly affects Repurchase Intention through Customer Trust with 0.068 strength based on 2.226 T-statistic and 0.026 P-value which validates stronger mediation. The analysis shows Customer Trust to be a crucial mediator between Service Quality and E-WOM and Service Quality and Repurchase Intention because the calculated P-values are lower than 0.05.

Table 2. Structural equational model

	Original Sample (O)	**Sample Mean (M)**	**Standard Deviation (STDEV)**	**T Statistics (|O/STDEV|)**	**P Values**
AI-Big Data (AIBD) Enabled Service Quality -> Customer Trust	0.163	0.163	0.045	3.611	0
AI-Big Data (AIBD) Enabled Service Quality -> Repurchase Intention of Service Packages	0.104	0.106	0.043	2.433	0.015
Customer Trust -> Repurchase Intention of Service Packages	0.161	0.162	0.063	2.555	0.011
Electronic Word of Mouth (E-WOM) -> Customer Trust	0.425	0.429	0.055	7.69	0
Electronic Word of Mouth (E-WOM) -> Repurchase Intention of Service Packages	0.192	0.195	0.057	3.38	0.001

Table 3. Mediating Effect

	Original Sample (O)	**Sample Mean (M)**	**Standard Deviation (STDEV)**	**T Statistics (|O/STDEV|)**	**P Values**
AI-Big Data (AIBD) Enabled Service Quality -> Customer Trust -> Repurchase Intention of Service Packages	0.026	0.027	0.013	2.013	0.045
Electronic Word of Mouth (E-WOM) -> Customer Trust -> Repurchase Intention of Service Packages	0.068	0.07	0.031	2.226	0.026

5. Conclusion

Customer Trust emerges as the key mechanism that links AI-Big Data service improvements with E-WOM since both factors directly produce better repurchase intention. AIBD-enabled service quality performs substantially well in generating customer confidence but displays a lower impact on repurchase intention than E-WOM does. Service quality benefits generated by artificial intelligence require customer advocacy and positive word-of-mouth flow to reach their maximum impact on customer retention. Organizations aiming to enhance customer retention should establish trust-building mechanisms since Customer Trust serves as a key mediating factor.

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