The Role of AI-Driven Personalization in Enhancing Customer Experience and Purchase Intentions: Exploring the Impact of Consumer Data Privacy Concerns

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Abstract:

For this research, the primary objective is to investigate the impact of utilizing AI for personalized experiences on consumer purchasing behaviour. The study focuses on the level of customer engagement, the perceived value of the personalized experience, and overall satisfaction with the personalized interaction. Understanding these factors is crucial, especially with the increasing use of AI in personalization. Additionally, the study aims to examine how concerns regarding privacy, trust in digital technology, and general comfort with technology influence these relationships. To achieve these research goals, a combination of methodologies will be employed, including surveys and in-depth interviews. Convenience sampling, a non- probability sampling technique, will be utilized to select interview participants who have prior exposure to AI-driven personalization. The gathered data will then be analyzed using Structural Equation Modeling (SEM), with SMART PLS 4.0 being employed to drive the results of the study.

Key Words: AI-driven personalization, customer experience, customer security concerns, customer trust in digital technology.

Acronyms:

AI= Artificial Intelligence

OBA= Online Behavioural Advertising

Introduction

The disruption from Artificial Intelligence creates significant market transformations which fundamentally modify company operations (Noble & Mende, 2023). AI, which used to be seen only in robot-related science fiction, has evolved into an everyday practical system permanently woven into how people communicate. chatterbots using artificial intelligence help improve the online shopping experience through their capability to recommend products based on customer buying behaviour. Artificial Intelligence establishes automated customer support and travel aid by enabling chatbots to provide travel recommendations while taking bookings and selecting tourist attractions. AI continues its wide expansion in marketing applications, according to Kumar (2021), which guarantees the eventual integration of AI into all aspects of life.

The positive influence of AI on productivity stands out the most in marketing applications while bringing benefits to all sectors (Davenport et al., 2020; Huang & Rust, 2021). The market potential of AI-driven applications reached its peak when McKinsey & Company studied 400 solutions distributed across 19 industries and nine business functions (Chui et al., 2018). The 2022 Salesforce Research survey showed that marketing professionals started using AI more extensively in their work compared to the previous year. The 2023 survey from Salesforce found that the application of AI increased to 87% for marketing professionals attempting to unite digital and physical touchpoints (a rise from 71% in 2021) as well as addressing customer identification challenges (82% increase from 2021) and process automation for reporting duties (83% rise from 2021) (Salesforce, 2023). Research data confirms that Artificial Intelligence develops its prominence in marketing through enhanced customer experiences, operational efficiency, and process simplification. Three central examples demonstrate the transformative power of AI in marketing to the utmost extent.

Amazon Prime Air provides AI-powered deliveries that bring packages to customers within 30 minutes because the system keeps developing drone navigation systems and weather adaptation and flight path optimization capabilities to deliver better performance and reduced costs.

AI has transformed online retail by letting Stitch Fix or Amazon utilize their AI systems to predict customer demands, thus advancing toward shipments that reach customers before purchase orders. Through detailed customer information, the AI system from Stitch Fix builds individualized clothing selections, prompting customers to maintain or return specific items. Such predictive methods boost customer satisfaction through solutions adjusted to meet individual customer preferences.

These fundamental marketing operations now change thanks to AI after existing as unrelated departments in organizations. Active integration of these functions allows AI to produce increased conversion rates. Customer relations management asset personalization and advertisement space optimization are functions of RedBalloon's Albert AI platform which operates through the analysis of data. Real-time process automation results in complex marketing

management improvements yet creates workforce replacement concerns and customer discomfort when dealing with automatic systems.

The academic community continues to perform extensive research about utilizing AI for marketing purposes. This research explores consequences for both workers and consumers (Bonetti et al., 2023; Holthöwer & van Doorn, 2023; Maragno et al., 2023; Mende et al., 2023), besides psychological limitations of adoption (de Bellis & Venkataramani Johar, 2020; De Bruyn et al., 2020) and ethical issues (Hermann, 2022; Kim et al., 2023) and the impact of AI on customer interactions (Grewal et al., 2020; Puntoni et al., 202) Research on AI's dynamic pricing phenomena and consumer profile optimization and search optimization continues (Misra et al., 2019) while showing progress through recent works by Duan et al. (2019), Haleem et al. (2022) and Vaid et al. (2023).

Market research shows that artificial intelligence has gained popularity, yet its complete abilities to optimize multiple marketing functions remain untapped (Ameen et al., 2022; De Bruyn et al., 2020; Huang & Rust, 2022a). The purpose of this investigation is to delve into AI adoption in marketing operations to understand its effect on future strategic development and practitioner conduct. Our study draws from dynamic capability theory (Hunt & Madhavaram, 2020; Kumar et al., 2019; Leemann & Kanbach, 2022; Matarazzo et al., 2021; Teece, 2020; Weaven et al., 2021) to address the need for extensive investigation of AI's marketing practice effects which arises from research requests (Huang & Rust, 2022a; Mishra et al., 2022).

Marketing researchers identified six vital business areas which demonstrate the transformative power of AI through both academic research and expert interviews with 40 marketing experts. The analysis reveals how AI modifies marketing structures by delivering better customer data analysis in conjunction with automatic strategy development and operational enhancement methods. This research provides foundations for upcoming studies while proving the deep and extensive use of AI technology across marketing operations.

Modern business operations have experienced a fundamental transformation through the AI and marketing union, which changes how organizations relate to customers, process data and develop strategies (Laker, 2023). The transformative power of artificial intelligence in marketing has generated wide recognition for its ability to reshape consumer relations and marketing operations in digitized business environments. AI has gained a full position in marketing operations, requiring companies to recalculate applicable strategies while advancing marketing insights found in the literature (Kaplan & Haenlein, 2019).

Huang and Rust (2021) developed an AI marketing theory to explain its operational capabilities in the field. The authors develop a three-step strategic planning process derived from Deming's (1986) well-known plan-do-check-act cycle. The framework consists of thorough market research followed by segmenting processes, targeting potential customers, and setting their positions before executing marketing actions in an endless sequence. The strategic marketing process receives essential support from AI, according to Huang and Rust (2021). These abilities involve mechanical, thinking and feeling aspects, which copy human skills for application across

different tasks (Huang & Rust, 2018; Huang et al., 2019). The three types of AI engage in different functions: mechanical AI executes standard work while thinking AI handles unstructured information for decision-making, and feeling AI interacts with humans to evaluate their emotional states.

Strategic marketing, along with digital technology transformations, delivers value to customers benefiting firms and society, according to Plangger et al. (2022). The examination presents an operational method which focuses on putting strategic resources to work on developing and implementing key digital tools such as Metaverse along with Robotics IoT and virtual assistants, leading to strategic results which help customers while generating value for both firms and society at large. The authors establish three sections of strategic outcomes: customer value, brand value, and societal value. This investigation adds AI as an essential boundary parameter which determines spending levels on newly developed technologies.
Perez-Vega et al. (2021) developed an online customer engagement behavioural framework using the stimuli-organism-response (S-O-R) model to explore AI-based marketing customer interaction. The defined framework describes stimuli through observed forms of online engagement behaviours that initiate AI organism processing, which eventually leads to AI and human responses. AI organisms accept stimuli for processing to generate immediate insights with accompanying recommendation suggestions. AI organisms obtain their most extensive real- time insights through the combination of current and stored data processed using multiple analytical methods. The system uses live customer information to guide response generation, which may include manual or automated platform functions. Using sentiment and category techniques allows experts to obtain more detailed information about customers' online behavioural patterns. This analytical structure creates the groundwork for future studies regarding AI engagement strategies between marketers and their customers in business interactions.

Prominent frameworks in this domain include a framework for understanding the role of AI in personalized engagement marketing and offering predictions on strategic firm assets in developed and developing economies (Kumar et al., 2019), a framework for AI adoption in business-to-business marketing (Chen et al., 2022), a framework for machine learning application in marketing (Ngai & Wu, 2022), a framework of the drivers and outcomes of AI adoption for innovation (Mariani et al., 2023), a framework for adopting AI for financial services marketing (Mogaji & Nguyen, 2022), and a framework regarding the antecedents, dimensions, and outcomes of creativity in marketing and AI (Ameen et al., 2022). The diverse marketing frameworks function as navigational guides for AI-based marketing systems across existing domains of our present time.

Data science and marketing AI competencies serve to evaluate market shifts and forecast upcoming customer actions, according to Fan et al. (2023) and Lalicic and Weismayer (2021).

These predictions help marketers develop strategic approaches to interact with customers from start to finish. AI utilizes predictive analysis to boost customer understanding by predicting needs and delivering personal experiences which enhance the overall customer experience. AI analyzes retail checkout data to understand consumer needs and preferences, which enhances customer satisfaction because of personalized real-time communication, according to van Esch et al. (2021). CRM systems enhanced by AI technologies utilize purchase history evaluation to estimate customer buying patterns for developing customized marketing approaches that strive to increase loyalty and revenue (Chatterjee et al., 2019). The advanced personalization features, along with enhanced forecasting accuracy, create loyal customer relationships because customers show appreciation when brands understand their requirements well (Arora et al., 2021). The opening segment of this paper addresses the AI-powered generation of consumer insights, which represent an essential component of data-driven marketing abilities. AI-enhanced CRM produces predictive analysis, which forms the first element, while algorithmic-based customer segmentation and customization work as the second component. This analysis examines both execution and benefits together with the disadvantages of these elements while highlighting different real-world instances. Many researchers start conducting investigations to determine how AI affects purchase intention by studying effective data protection methods to build customer trust.

Research Questions

1. How does AI-driven personalization affect purchase intentions?
2. What is the role of customer experience quality and the relevance of personalized recommendations in enhancing purchase intentions?
3. How do customer engagement, perceived value, and satisfaction with personalization mediate the relationship between AI-driven personalization and purchase intentions?
4. How do consumer data privacy concerns, digital trust, and tech-savviness moderate the effects of AI-driven personalization on purchase intentions?

Significance of the study:

The influence of AI-powered personalization on enhancing customer experience and purchase intentions in today's digital market is remarkable. This transformative development has significantly changed the way businesses interact with customers, particularly in terms of enhancing customer experiences, increasing purchase intent, safeguarding customer data privacy, building trust in digital marketing, and devising inventive business strategies. This research is especially groundbreaking because it integrates state-of-the-art technology into marketing approaches.

The study "Examining the Consequences of Consumer Concerns about Privacy of Data and Trust in the Digital Sphere" is highly important as it explores the connection between cutting-edge technology, consumer habits, and ethical dilemmas. It highlights the potential of AI in customizing customer experiences while stressing the vital significance of privacy and trust, providing valuable perspectives for businesses, policymakers, and the public.

Theoretical Contribution:

- Provides a comprehensive understanding of how AI-driven personalization impacts purchase intentions, mediated by key variables.

Practical Contribution:

- Offers insights for marketers on how to effectively implement AI-driven personalization while addressing consumer privacy concerns and building digital trust.

Methodological Contribution:

- Introduces an innovative framework for studying the complex relationships between AI-driven personalization and purchase intentions.

Justification:

Research about this topic proves timely because AI continues to become central to marketing plans. Research on the impact of AI-driven personalization on purchase intentions through customer engagement and perceived value and satisfaction exists, but new exploration is needed. An examination of the moderation effects of consumer data privacy concerns, as well as digital trust and tech-savviness, expands the research scope, making it an essential contribution to the field.

This research extensively examines AI-powered personalization and its effects on purchase intentions to generate significant findings which will benefit the current marketing research industry. The proposed research delivers practical advice about how to use AI technologies for enhancing customer interaction while simultaneously delivering recommendations.

Li**terature Review:**

During the middle of the 20th century, customer demands underwent significant modifications. The key to market success during that period depended on having products easily available to customers. Customers today seek items which set them apart without sacrificing their connection to the mainstream consumer base. There exists an obvious requirement for products that reflect personal unique characteristics. Advancements in technology merged with this unspoken customer need, for which marketers actively used personalization as their business strategy. Personalization means making products specifically match individual consumer needs based on the definition from Oxford Dictionary. Every customer deserves unique attention since personalization enables companies to deliver items which match their individual choices (Suprenant & Solomon, 1987). The practical application of personalization uses proper methods to design unique customer interactions that result in better customer experience (Polk et al., 2020). Organizations provide exceptional user experiences through the analysis of customer

behaviour along with personal data. Besides customer interaction for shared experience development, personalization explores customer feedback and transaction records together with social media user engagement (Lim et al., 2022).

Studies demonstrate that implementation of effective personalization generates five to fifteen percent higher revenue besides improving marketing efficiency by ten to thirty percent for single marketing channels (Boudet et al., 2019). As a foundational principle in marketing, personalization spreads across business management, computer science, decision science, information systems and psychology yet maintains a fundamental tie to the marketing discipline.

Academic research on personalization has expanded rapidly since the recent past, turning into an emerging interdisciplinary field of study. Research on personalization has expanded substantially yet lacks organized evaluations to collect dispersed writings from different fields. Research results that show varied effects from personalization present barriers to achieving clarity about the entire field and its general applicability. Jon et al. (2021), Smink et al. (2020), and Tran et al. (2020) united to showcase how personalization affects customer reactions, but Pfiffelmann et al. (2020) said personalized offers usually fail to provoke target customer engagement through marketing customization adaptation.

AI personalization decision impact on Consumers' Purchase intention

The consumer buying decision encompasses the physical activities which consumers perform to acquire products along with services that fulfil their needs as well as their wants. Research-based analysis of this process enables future action prediction (Qazzafi, 2019). The consumer purchase decision process includes five stages, which indicate how people buy products. The purchase behaviours of consumers prove difficult to understand since these patterns stem from human psychology, but AI-based technological systems manage to predict such behaviours through digital platforms. Customers interact with online platforms through various forms of communication such as website browsing and mobile interactions as well as person-to-person contacts and use platforms like searches, comments, blogs and Tweets, likes, videos and other forms of dialogue (Court et al., 2009). A person utilizes physical and mental steps to obtain and utilize products which satisfy their requirements along with their wants during the buying process.

Studying this process enables businesses to predict customer actions in the future (Qazzafi, 2019). Before acquiring products, consumers go through a five-step decision-making process. The complexities of human cognition connected to consumer buying behaviour make it possible for digital AI-based technology on digital platforms to assess and forecast such patterns, specifically in digital domains. Through various digital platforms, which include searches, comments, blogs, tweets, likes, videos and website and mobile-related interactions and offline discussions (Court et al., 2009), customers share their needs along with their opinions and

attitudes. Consumers follow sequential mental steps to seek and utilize products and dispose of services whenever they find solutions to satisfy their personal wants or requirements.

The analysis brings valuable predictions regarding future consumer actions (Qazzafi, 2019). Consumer purchasing decisions follow a method which contains five sequential stages before acquiring products. The complexity of consumer purchasing patterns drives research about AI-based technology on digital platforms to examine and predict such behaviour, specifically on digital platforms. Customers demonstrate their requirements along with their preferences and feedback through diverse digital contact points spanning from online searches to written content and shortened messages across platforms that range between digital systems and physical outreach (Court et al., 2009). The growing amount of consumer data keeps expanding because of its increasing characteristics of volume, velocity, variety, and accuracy. The massive amount of data becomes intelligible consumer insights for retailers through AI, which lets the system determine product displays and classification. Thus, comprehension of the consumer journey remains essential for all business activities. Researchers have found through ongoing studies in AI marketing that Instagram shopping enabled by AI produces three main advantages: smart recognition and search functionality and automatic suggestions together with artificially intelligent customer service chatbots. The research adopts an original approach to investigate the possible impact of digital technology driven by AI on Instagram users' buying intentions regarding their perceived electronic word-of-mouth, perceived emotional value, perceived quality and, perceived risk and perceived price. Recent research indicates that purchase intention response to AI customizations shows dependency on customer engagement levels.

Personalized marketing messages, along with recommendation systems based on AI technology, deliver more actionable customer engagement since they provide customized, relevant experiences to users (Smith & Anderson, 2021). The actions of active customers lead them to form positive brand attitudes, which strengthens their purchase intention (Chen et al., 2020). Through AI personalization, customers receive custom care experiences along with appreciation, which raises engagement and subsequently purchase intentions (Johnson, 2022). The achievements of AI-facilitated personalization strategies demonstrate the vital role advanced technologies play in improving customer interactions and business sales.

Cu**stomer Experience Quality impact on Purchase intention**

According to Igbaria, Guimaraes, and Davis (1995), the tailored Technological Acceptance Model (TAM) exhibits customer experience as a factor that directly affects purchase intention. The product experience encompasses all product features alongside their qualities with the diverse selection that the service provider presents (Klaus & Maklan, 2012). The wide array of product options on an e-retail platform enables customers to base informed decisions while comparing different alternatives (Klaus & Maklan, 2012), thus affecting consumer behaviour (Srinivasan et al., 2002). Customer product evaluation determines their beliefs and attitudes

towards such items through performance assessment. Perceived experience determines customer attitudes, although this experience results from product functionality, packaging, and display, combined with in-store perceptions (Fatma, 2014). Recent research demonstrates that purchase intention response primarily depends on perceived value when customers experience a product.

Customers who receive beneficial service and operate seamlessly with quick assistance develop enhanced perceptions of product or service value (Lemon & Verhoef, 2016). The price-to-benefit assessment made by customers constitutes an essential part of determining their purchasing decisions, according to Zeithaml (1988). The perception of high value increases purchase probability for customers because it stems from satisfied relationships built through positive experiences (Wang et al., 2020). The relationship demonstrates that companies should adopt improved customer experiences because they enhance perceived product value while increasing purchasing intentions.

Privacy and security.

Internet transactions on any website require the protection of personal information through Security and privacy protocols, which also defend customers from invasions (Vafaeva, 2013). Whoever makes use of OCE services must enjoy complete privacy protection for their personal information. A customer's perception of security includes both the transaction process security and protection against credit card invasions and personal information access (Khanra, 2021). Customers experience security benefits through the professional design of the retailer's website (Azevedo, 2015). The compounds of insecurity with lack of privacy tend to generate fear and increased risk perception among customers (Talwar et al., 2020b)

User Interface Design impact on purchase intention

People enjoy mobile internet shopping during their leisure hours for enjoyment in their routine activities. Multimedia materials are available extensively to users. The combination of gravity sensing with virtual simulation through location-based services (LBS) has developed better shopping features. Each element within mobile web interfaces delivers various levels of entertainment value to users through their functions as UI design, music components and animation features. Through its high-end features, a mobile shopping interface creates higher emotional consumer involvement, which produces enjoyable experiences for shoppers during their purchasing journey (Zhang et al., 2023).

Research in website quality demonstrates that the quality of the shopping application interface impacts consumer buying willingness. The analysis of mobile shopping app interface quality remains important since shopping apps continue growing because it affects consumers' purchase intentions.

An information system called the mobile shopping app interface enables online shoppers to experience the retail store environment (Hausman & Siekpe, 2009). The interface allows users to find products that they can analyze before making a purchase payment. The shopping app

functions between retailers and their customers to become their main competitive tool. The shopping app interface shows all visible features which customers can see in the virtual shopping store. The interface stimulates efficient goal information search and decision-making for customers. The interface quality proves crucial for user responses because it operates as an antecedent. Studies about shopping websites confirmed that interface quality functions as a main factor which directs customer buying intentions (Kuan, Bock & Vathanophas, 2008)

Online shoppers are inclined to make purchases from shopping websites or applications offering important desirable features.

The mobile shopping application functions as an information system to provide customers with virtual access to the online shopping store. The system lets consumers look for products and monitor, judge and finalize their buy decisions. A shopping app's interaction with customers and retailers grants it its major competitive edge in the retail market. The virtual store's interface operates as the primary boundary for consumers who need easy access to required information and must base their choices on this platform. The mobile shopping app interface creates a major influence on how users participate and behave when purchasing online. Research conducted on shopping websites established that interface quality drives consumers toward purchasing through browsing behaviour. People are more inclined to visit shopping websites or applications with desirable interface qualities, which makes them more open to purchases (Bilgihan, Kandampully & Zhang, 2016).

Aesthetically appealing and customized and structurally sound shopping website or mobile application interfaces serve as essential components for developing customer trust (Zhang et al., 2021).

Interface quality within shopping applications serves as a predictive factor which influences customer perceptions regarding app-provided products while simultaneously impacting consumer trust and buying intentions (Patel et al., 2009). Scientists must determine the quality of the shopping app interface because it directly affects the support of online transactions. Earlier studies analyzed mobile shopping app purchase intentions under technology and social dynamics (Vahdat et al., 2020) yet empirical research on mobile shopping app interface quality remains poorly understood. The research addresses this knowledge gap by exploring how shopping app interface quality influences buying intentions. Purchase intention develops according to user interaction behaviour since users connect directly through this channel.

More customer engagement results from enhanced customer care along with adaptive web interfaces and personalized communication channels, leading to improved experience quality (Brodie et al., 2013). Customers who identify as part of the brand and feel genuinely important to it tend to develop positive brand attitudes together with strong emotional connections and, therefore, demonstrate high purchase motivation (Hollebeek et al., 2014). User experiences that meet high-quality standards enable enhanced loyalty as well as trust with customers, leading to increased customer engagement, resulting in higher purchase likelihood (Bowden, 2009).

Improving user interaction methods constitutes a critical step to boosting customer dedication and driving purchasing choices.

Frequency of Personalized interaction impact on purchase intentions

Social media marketing plays a key role in advertising designs because it reshapes consumer actions through gradual changes to their opinions until they become brand-loyal customers who demonstrate increased purchase readiness. The basis of advertisement targeting exists in the advertisement under examination. The process begins with consumers so marketers can supply advertisements which match individual customer requirements precisely. văn phòng trình bày thông tin người tiêu dùng đã mở ra những phương thức mới cho các nhà quảng cáo nhằm đối chọn người tiêu dùng thông qua nội dung tùy ích (Bleier and Eisenbeiss, 2015).

The digital trail of potential customers that OBA obtains derives from tracking their web browsing activities, their streaming site usage, their search records, and their video preferences. Experts from the industry mark higher advertisement relevance and efficiency as the critical element that changed everything. The study of OBA user resistance and acceptance performed by Boerman and colleagues (2017) utilized Theoretical Modeling as their research method. The research findings from Boerman and colleagues (2017) reinforce earlier studies showing how personalizing advertising presents both positive and negative effects that balance between useful data collection and invasion of personal privacy.

Social media users developed a behavioural pattern called "banner blindness", where they automatically dispose of displayed promotional content because they have learned to ignore ads. Kasper et al. (2017) conducted research using eye movement tracking to show how well the viewed advertisement attracts viewer attention. The results provided extensive evidence about consumer cognitive disregard. Personal characteristics influence personal relevance in tailored advertising, according to the research, which benefits marketers. Belch and Belch (2012) describe three stages in attitude formation, which together form a tri-component model according to their research.

A person's mental evaluation regarding an object happens under the Cognitive component.

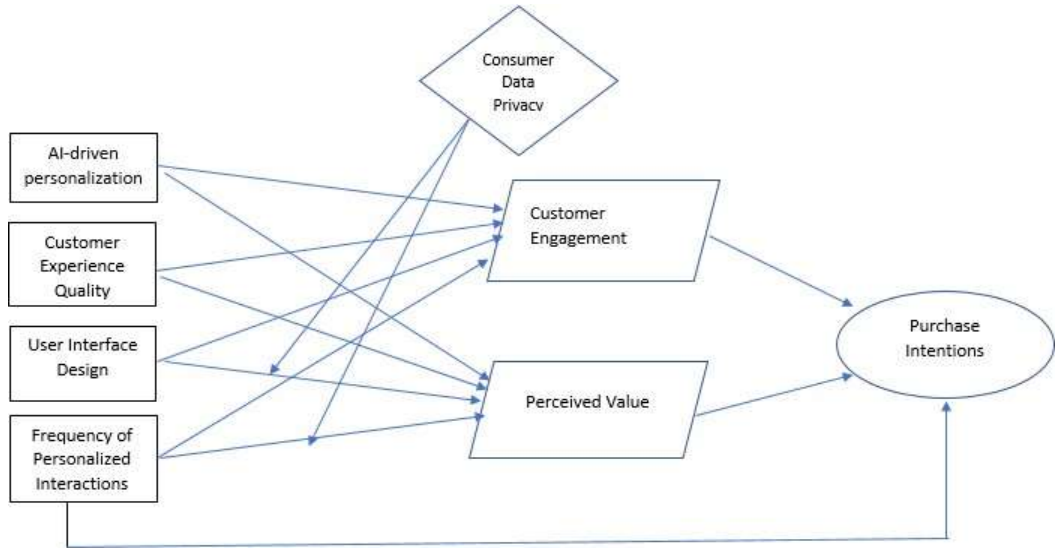
An emotional evaluation of an object exists as the affective component within this model, which transfers information concerning positive or negative emotional reactions to products.

The Behavioral Component illustrates how people show their reaction readiness to different objects through behavioural action.

According to Carrillat et al. (2014), consumers showed positive attitudes toward Facebook messages, enabling the authors to investigate recruitment message responses on the site.

People are more likely to buy something after experiencing frequent personalized communications, while personalization satisfaction plays an essential role in this process. Rated-on interactions such as personalized emails and specialized ads and recommendations help

customers perceive greater benefits during interactions, which leads to higher satisfaction outcomes (Ansari & Mela, 2003). The regular availability of personalized experiences to customers results in stronger brand loyalty and trust, which leads to increased purchase intentions, according to Zahay et al. (2015). A vital aspect of personalization satisfaction is that it enables frequent consumer interactions to develop positively, which leads to improved purchase- want (Li & Kannan, 2014). The establishment of relevant, personalized contacts stands crucial for both customer satisfaction growth and purchase intention improvement.



Hypotheses:

Direct Effect

H1: There is a significant interaction effect between AI-driven personalization on purchase intention

H2: There is a significant interaction effect between Customer Experience Quality and Purchase intentions.

H3: There is a direct relationship between User Interface design and purchase intention

H4: There is a direct relationship between the frequency of personalized interaction and purchase intentions

H5: There is a positive relationship between AI personalization and Customer Engagement.

H6: there is a positive relationship between Customer experience quality and customer engagement.

H7: There is a positive relationship between user interface design and customer engagement.
H8: there is a positive relationship between user interface design and perceived value.
H9: there is a positive relationship between the frequency of personalized interaction and purchase intention.
H10: The significant relationship between AI personalization and purchase intention is mediated by Customer Engagement.
H11: The significant relationship between AI personalization and purchase intention is mediated by perceived value.
H12: The significant relationship between customer experience quality and purchase intention is mediated by customer engagement.
H13: The significant relationship between customer experience quality and purchase intention mediated by perceived value.
H14: The relationship between user interface design and purchase intention mediated by perceived value.
H15: The relationship between the frequency of personalized interaction and purchase intention is mediated by customer engagement.
H16: The relationship between the frequency of personalized interaction and purchase intention is mediated by perceived value.
H17: Customer data privacy moderates the relationship between user interface design and perceived value.

H18: Customer data privacy moderates the relationship between the frequency of personalized interaction and perceived value

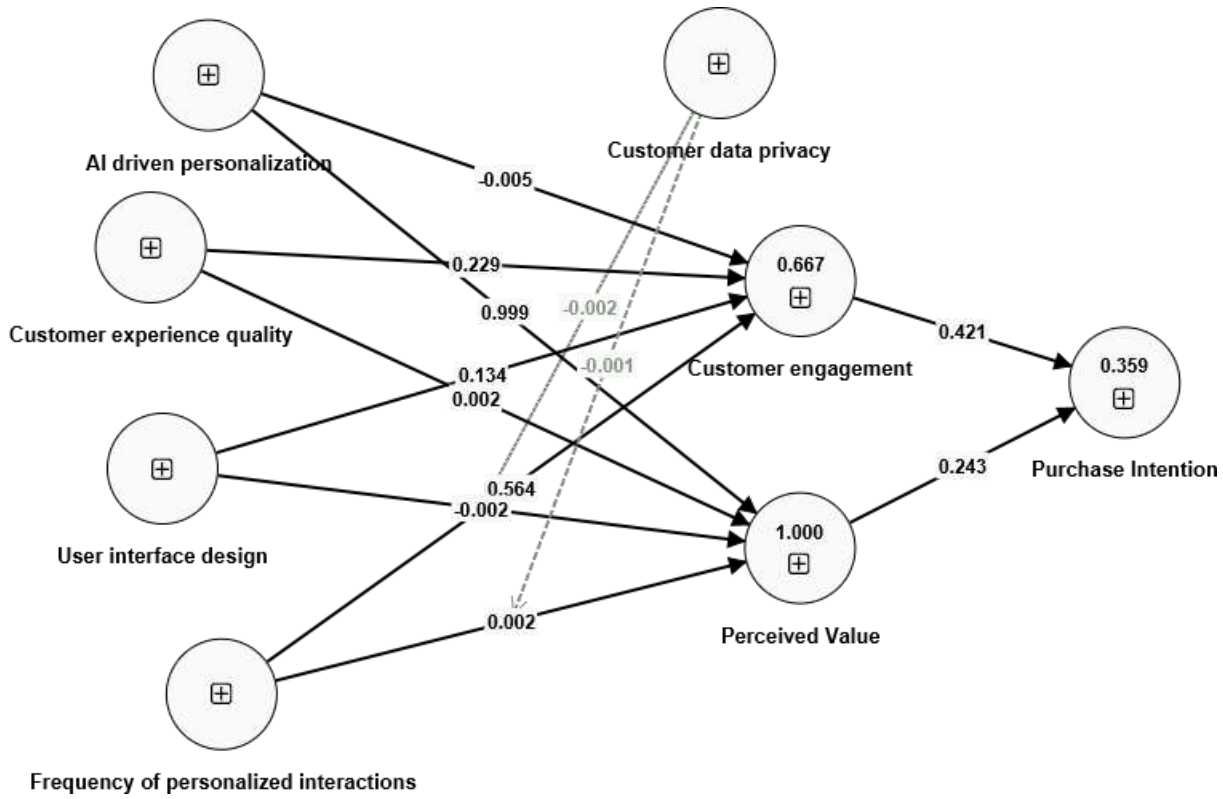
Methodology:

This study is positivist and adopts a deductive approach, as Crossan (2003) recommends this approach where the research has a set of hypotheses to be confirmed or rejected. Further, this is based on the Mono Method Quantitative (MMQ) and a cross-sectional data collection method has been used as the data required from the research participants is primary and can be collected at once from all of the research participants of this study. The targeted population of the present study is the consumers using digital platforms for shopping-buying purposes.

By applying purposive sampling, the sample size of this research would be 388 consumers. The gathered data have been compiled and analyzed statistically by employing the appropriate statistical tests in both descriptive statistics and inferential analysis to test the formulation of hypothesized statements. Based on the objectives and hypothesis of this study, regression and correlation statistics are run to see the impact of AI-driven personalization, Customer experience quality, Relevance of personalized recommendations, User interface design and frequency of personalized interaction on purchase intention. Furthermore, the mediating role of customer engagement, perceived value, satisfaction with personalization and moderating role of customer data privacy and digital trust will be analyzed.

Results

Measurement Model



Structural Model

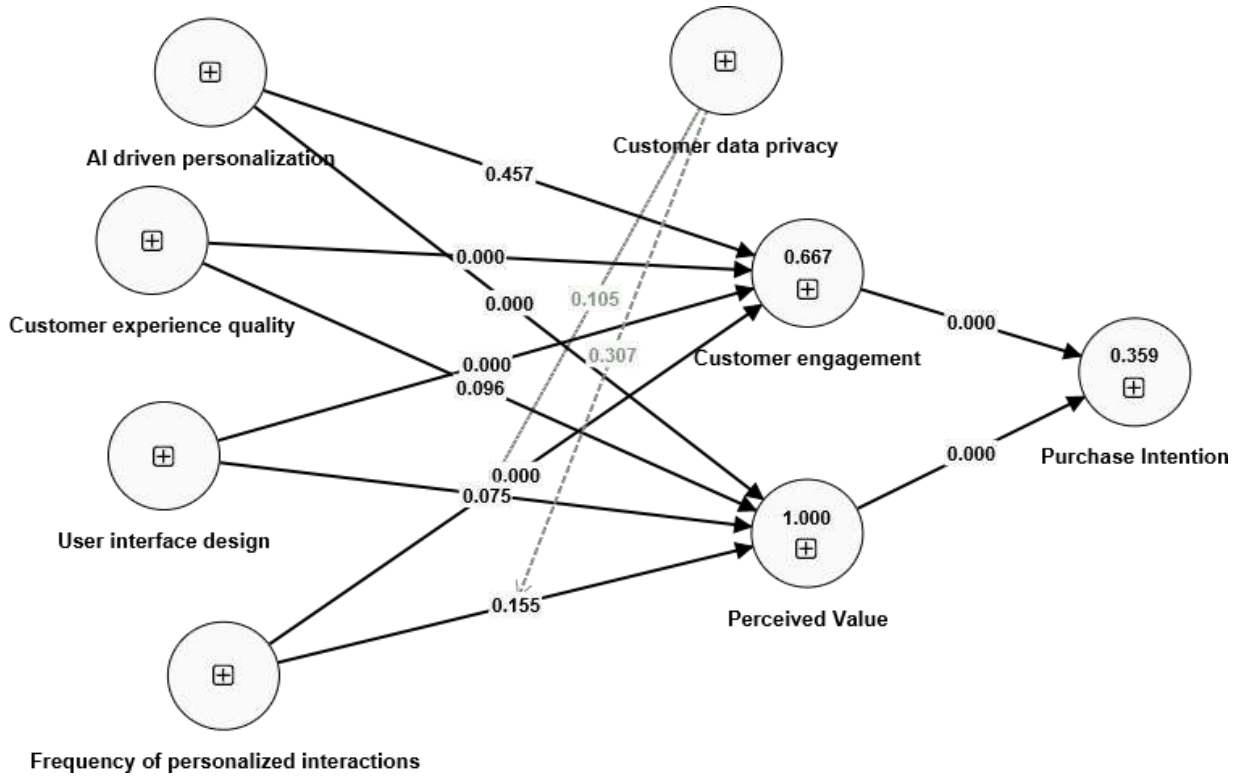


Table 1: Reliability and Validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
AI-driven personalization	0.818	0.834	0.875	0.586
Customer data privacy	0.897	0.908	0.925	0.713
Customer engagement	0.868	0.881	0.901	0.606
Customer experience quality	0.896	0.899	0.927	0.762
Frequency of personalized interactions	0.908	0.913	0.927	0.646
Perceived Value	0.818	0.833	0.875	0.586
Purchase Intention	0.784	0.891	0.853	0.599
User interface design	0.811	0.811	0.869	0.573

Convergent validity explains the convergence of indicators into their respective latent variables. The values of the Cronbach alpha, composite reliability, and AVE values are within the prescribed range as recommended by Aburumman et al. (2022), suggesting the construct meets the requirements of internal consistency and convergent validity.

Table 2: Discriminant Validity

Fornell & Lackler

	AI-driven personalization	Customer data privacy	Customer engagement	Customer experience quality	Frequency of personalized interactions	Perceived Value	Purchase Intention	User interface design
AI-driven personalization	0.766							
Customer data privacy	0.481	0.844						
Customer engagement	0.6	0.703	0.779					
Customer experience quality	0.593	0.39	0.648	0.873				
Frequency of personalized interactions	0.711	0.608	0.764	0.666	0.804			
Perceived Value	1	0.481	0.6	0.595	0.712	0.765		
Purchase Intention	0.492	0.302	0.567	0.853	0.59	0.495	0.774	
User interface design	0.507	0.581	0.552	0.348	0.604	0.505	0.248	0.757

Discriminant validity explains how unique (Richter et al., 2003) and distinct (Aburumman et al., 2022) the latent variables used in the study are. The results in the table show that the construct has acceptable discriminant validity.

Outer Loading

	A-I driven personalization	Customer experience quality	User interface design	Frequency of personalized interactions	Customer data privacy	Customer engagement	Perceived Value	Purchase Intention
3	0.644							
4	0.698							
5	0.868							
6	0.87							
7	0.721							
13		0.902						
14		0.868						
15		0.898						
16		0.821						
21			0.777					
22			0.758					
23			0.778					
24			0.833					
26			0.621					
27				0.846				
28				0.886				
29				0.789				
30				0.806				
31				0.741				
35				0.785				

36	0.764				
43		0.879			
44		0.901			
45		0.864			
46		0.853			
47		0.711			
49			0.676		
50			0.659		
51			0.806		
52			0.846		
53			0.8		
54			0.861		
71				0.651	
72				0.706	
73				0.867	
74				0.866	
75				0.711	
78					0.616
79					0.636
81					0.91
82					0.885

The above table shows that the outer loading values are within the acceptable range.

Hypotheses Results

	Original sample (O)	**Sample mean (M)**	**Standard deviation (STDEV)**	**T statistics (|O/STDEV|)**	**P values**
1. AI-driven personalization -> Purchase Intention	0.241	0.24	0.051	4.719	0
2. Customer experience quality -> Purchase Intention	0.097	0.1	0.026	3.684	0
3. User interface design -> Purchase Intention	0.056	0.056	0.017	3.209	0.001
4. Frequency of personalized interactions -> Purchase Intention	0.238	0.238	0.026	9.018	0
5.AI personalization→ Customer engagement -> Purchase Intention	0.421	0.424	0.048	8.743	0
6. AI-driven personalization -> Perceived Value→ purchase intention	0.999	0.999	0.001	795.222	0
7. Customer experience quality ->	0.229	0.231	0.043	5.344	0

Customer engagement→ Purchase intention					
8. Customer experience quality -> Perceived Value→ purchase intention	0.002	0.003	0.002	1.305	0.096
9. User interface design→ Customer Engagement→ Purchase Intention	0.134	0.135	0.038	3.507	0
10. User interface design→ Perceived value→ Purchase intention	-0.002	-0.002	0.003	1.442	0.075
11. Frequency of personalized interactions -> Customer engagement→	0.564	0.564	0.055	10.34	0
12. Frequency of personalized interactions -> Perceived Value→ purchased intention	0.002	0.001	0.002	1.016	0.155
13.Customer data privacy x User interface design -> Perceived Value	-0.002	-0.002	0.001	1.254	0.105
14.Customer data privacy x User interface design -> Purchase Intention	0	0	0	1.153	0.124
15.Customer data privacy x Frequency of personalized interactions -> Perceived Value	-0.001	-0.001	0.001	0.506	0.307
16. Customer data privacy x Frequency of personalized interactions -> Purchase Intention	0	0	0	0.479	0.316

The results of the hypothesis on the relationship between AI personalization and purchase intention (STD=0.051, T-stat=4.719, P-value=0) show significant results. The results of the direct relationship between customer experience quality and purchase intention (STD=0.026, T-stat=3.684, P-value=0.0) show a significant relationship between the variables. The direct relationship between user interface design and purchase intention (STD=0.017, T-sat=3.209, P-Value=0.001) shows a significant relationship between variables. The direct impact of the frequency of personalized interaction on purchase intention (STD=0.026, T-stat=9.018, P-value=0) shows a significant direct impact. The result of the relationship between AI personalization and purchase intention mediated by customer engagement (STD=0.048, T sat=8.743, P value=0) shows a significant mediation effect among variables. The results of the AI personalization and purchased intention mediated by perceived value (STD=0.001, T sat= 795.22, P value= 0.00) show a significant relationship among variables. The results of the mediating impact of customer experience quality and purchase intention mediated by customer engagement (STD= o.o48, T-stat=8.743, P value = 0) show significant results. The results of the hypothesis on the relationship between customer experience quality and purchase intention mediated by perceived value

Discussion

A research study demonstrated that AI-based customization demonstrates a positive and statistically meaningful influence on purchase probability. The results indicate that AI-powered personalization demonstrates a strong effect on purchasing behaviour since the t-statistic value stands at 4.719. The study findings match previous research that validates how AI helps customers enjoy better experiences when making choices (Davenport et al., 2020; Bleier et al., 2021). The personalized content brands provide leaves with a positive impact on consumer trust while simultaneously increasing their purchase intent, according to (Lommatzsch et al., 2022). The combination of highly personalized AI-based marketing techniques gives greater customer participation and conversion rates, according to Tam & Ho (2021), because personalization reduces customer choice problems and generates the higher perception of suitability. Business organizations need to establish AI-based personalization as their main marketing operation through machine learning algorithm execution with behaviour analytics and predictive methods to build highly individualized shopping experiences. Consumer data privacy requires ethical consideration when individualization approaches are selected (Sharma et al., 2023).

The second research model analyzes how AI personalization with customer experience quality and user interface design, together with personalized interaction frequency, affects purchase intent. Investigations within this research examined how customer engagement, along with perceived value, acts as an intermediary and customer data privacy functions as a moderator between variables under study. Direct Effects on Purchase Intention

According to the research data, a strong positive relationship exists between AI-based personalization and purchase intention. The positive impact of artificial intelligence-driven recommendations and personalized content on trust levels among consumers matches findings from Davenport et al. (2020) and Bleier et al. (2021) that lead to consumer purchasing decisions. Increasing customer productivity by offering suitable product suggestions alongside reduced search requirements and optimized convenience experience leads to better purchasing choices, according to Tam & Ho (2021).

Bronland & Verhoef (2016) establish that elevated customer experience standards boost brand recognition together with consumer dedication. Previous studies about user interface design that influence online consumer behavior (Rose et al., 2012) received support from the current research which demonstrated positive effects of user interface design on purchase intention.

The research showed that purchase intention was primarily influenced by how personalized customers experience becomes in the shopping journey. The outcomes demonstrate that standard personalized connections through AI-driven chatbots and recommendation engines plus automated follow-up services create trust between consumers and brands leading to enhanced purchase chances (Grewal et al., 2018).

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