



Can Artificial Intelligence (AI) - driven personalization influence customer experiences?

- A quantitative study on TikTok
integration with artificial intelligence

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Abstract

The advent of the digital era has profoundly transformed marketing and various organizational functions, largely driven by the accessibility to vast repositories of digitized data and the integration of artificial intelligence (AI). The purpose of this study is to examine the impact of artificial intelligence-driven personalization on customer experience within the context of TikTok, a leading social media platform known for its innovative use of AI technology. TikTok leverages AI to analyze user behaviors and preferences, delivering tailored content that enhances user engagement and satisfaction. The deductive approach is the selected approach to fulfill this study is objective. Particularly, the research hypothesis (H1) posits that AI-driven personalization positively influences customer experience on TikTok. To test this hypothesis, we conducted a quantitative study involving structured questionnaires distributed to a diverse sample of TikTok users via social media platforms, resulting in 365 usable answers. The findings confirm a significant positive relationship between AI-driven personalization and customer experience, underscoring the critical role of AI in shaping user interactions and experiences on social media platforms - TikTok. This study contributes to the literature on digital marketing and customer experience management by highlighting the effectiveness of AI-driven personalization in fostering engagement and satisfaction.

Keywords: Personalization, AI-driven personalization, artificial intelligence, AI, customer experience, TikTok

Table of Contents

Acknowledgments	1
Abstract	2
1. Introduction	5
1.1 Background	5
1.2 Problem Discussion	7
1.3 Purpose	8
2. Literature review	8
3. Theoretical Framework and Conceptual Model	13
3.1 AI-driven Personalization	13
3.1.1 Content Personalization	13
3.1.2 Message Personalization	14
3.1.3 Location-based Personalization	15
3.1.4 Recommender System (RS)	15
3.2 Customer Experience	16
3.2.1 Emotions	18
3.2.2 Cognitive Processes	18
3.2.3 Social Dimension	19
3.3 Conceptual Model	19
4. Methodology	22
4.1 Research Approach	22
4.1.1 Deductive Research	22
4.1.2 Quantitative Research	22
4.2 Research Design	23
4.3 Data Collection Method	23
4.3.1 Data Collection Instrument	24
4.3.2 Operationalisation and Measurement of Variables	24
4.3.3 Questionnaire Design	28
4.3.4 Pre-test	29
4.4 Sampling	30
4.5 Data Analysis Method	31
4.5.1 Data Coding, Entry, and Cleaning	31
4.5.2 Descriptive Statistics	32
4.5.3 Regression Analysis	33
4.6 Quality Criteria	34
4.6.1 Reliability	34
4.6.2 Validity	34
4.7 Ethical Considerations	35
4.8 Reflections	36

4.9 Summary of Methodology	37
5. Results	38
5.1 Demographics and Descriptives	38
5.2 Descriptive Analysis	40
5.3 Correlation Analysis	41
5.4 Quality Criteria	43
5.4.1 Reliability	43
5.4.2 Validity	43
5.5 Regression Analysis	44
6. Analysis	46
7. Conclusion	50
7.1 Theoretical Contributions	51
7.2 Managerial Implications	52
7.3 Limitations and Directions for Further Research	52
8. Reference List	55
Appendix I - Questionnaire I	68
Appendix II - Questionnaire II	74

1. Introduction

1.1 Background

Marketing has perpetually aimed to leverage existing technology for comprehending and engaging with the market. The advent of the digital era has ushered in profound transformations for marketing and various organizational functions (Caesarius and Hohenthal, 2022). A pivotal shift stems from the accessibility to vast repositories of digitized data (Caesarius and Hohenthal, 2022; Varian, 2014). Information technology has played a crucial role in data processing, augmenting, and facilitating human decision-making processes. Until now, there exists a plethora of algorithms capable of processing vast amounts of data, learning from it, and leveraging this knowledge to make highly informed decisions. This revolutionizes job roles by streamlining tasks and accelerating processes, harnessing data at a scale beyond human capacity for analysis. Central to this paradigm shift is artificial intelligence (AI), which encompasses machines' ability to replicate intelligent human behaviors, such as knowledge acquisition and problem-solving (Christian et al., 2023; Libai et al., 2020; Syam and Sharma, 2018; Sujata et al., 2019). The developers' true challenge is to design AI capable of learning, reasoning, and experiencing emotions autonomously, without human intervention. This autonomous AI would be able to make decisions independently, exhibiting true intelligence (Sujata et al., 2019).

Artificial intelligence (AI) technology has deeply integrated into today's mainstream social media platforms, empowering machines to participate in communication processes actively. Behind the scenes, AI-based algorithms autonomously analyze consumers' behaviors and inputs, learning their preferences and interests. This enables the algorithms to select personalized content for each consumer. Furthermore, AI enhances content creation with features like face-detecting filters and smart sound editing tools. AI-powered recommendations further assist users in expanding their social networks. As a result, artificial intelligence technology shapes customer interaction and experiences on social media platforms (Kang and Lou, 2022).

In social media, personalization involves delivering content tailored to a user's specific preferences and interests (Chu et al., 2024; Komiak and Benbasat, 2006; Wan et al., 2017). In the realm of social commerce, personalization plays a crucial role in creating value by providing customized recommendations to individual consumers, thereby encouraging purchases (Chu et al., 2024; Ho and Lim, 2018; Kalaignanam et al., 2018). Nevertheless, based on Christian et al. (2023), personalization refers to a company's capacity to identify consumers as unique individuals and treat them accordingly through tailored communications such as targeted ads, personalized offers, or individualized transactions, aiming to enhance their overall brand experience and foster customer loyalty. Yet, Wind and Rangaswamy (2001) suggest that personalization can originate from either customers such as customizing web page content, or companies such as offering personalized products or using customer names in greetings.

It is expected that AI's impact on personalization will greatly increase within marketing settings (Christian et al. 2023). Kumar et al. (2019) explored the intersection of AI and personalization, revealing that personalization plays a crucial role in the acceptance and use of AI. With the integration of AI, personalization has become ingrained in companies worldwide, experiencing substantial growth in its significance. As a result, AI-driven personalization capabilities have made it simpler for companies to deliver superior personalized services (Christian et al. 2023; Kumar et al., 2019).

TikTok, a prominent social media platform, harnesses artificial intelligence across its operations, content delivery, and customer interactions (Lynch, 2024). Since its debut, TikTok has gained widespread popularity and became the most downloaded application globally in 2022. Developed by ByteDance, TikTok has become a dominant force in the social media landscape, captivating users with its unique and compelling user-generated content (Anjelita et al., 2023). A key feature of TikTok is its algorithm, which functions as a recommendation engine, utilizing users' viewing preferences to curate content on the For You page (Anjelita et al., 2023; Gabor, 2023; Lynch, 2024). Through this approach, users encounter diverse content on the For You page, with content selection adapting over time based on individual usage patterns (Anjelita et al., 2023).

1.2 Problem Discussion

The topic of the influence of artificial intelligence on customer experience has been to a certain extent studied. When it comes to AI-driven personalization, there have been various studies executed on AI-driven personalization, however, the research conducted by Sodiya et al. (2024) focuses on web content delivery despite they found that AI-driven personalization could offer customized user experience. Gao and Liu (2022) assert that artificial intelligence technology has transformed customers' interactive marketing experiences, particularly by introducing AI-driven personalization. Nevertheless, Gao and Liu (2022) also highlight that more research needs to be done to study the concept and application of AI-driven personalization. By studying AI-driven personalization in eCommerce advertising, Adhikari and Singh (2023) mention that more research could further assess the influence of AI-driven personalization on consumer behaviors. Raji et al. (2024) delve into the diverse effects of AI-driven personalization, analyzing its impact on consumer decision-making, its role in establishing trust through transparent practices, its ability to solicit feedback and adapt to personalized experiences, and its contribution to fostering long-term customer loyalty within the e-commerce domain. They claim that AI-driven personalization stands as a cornerstone in influencing consumer decision-making by delivering customized and pertinent experiences. The previous research either emphasizes AI-driven personalization on web content delivery or consumer behavior on eCommerce. The application of AI-driven personalization and its impact on customer experience has not been studied. Therefore, there is a research gap existing in this area. Hence, the obvious research gap is the lack of study on the influence of AI-driven personalization on customer experiences in general, especially in the context of social media platforms.

TikTok, as one of the most popular social media platforms, has been well-known for its integration of algorithms to capture customers' attention and generate personalized links to provide offers based on customers' needs and preferences, including content, recommendations, offers, and so on. By applying AI-driven personalization, TikTok influences the customer experience and customer engagement (Lynch, 2024). Moreover, Bresnick (2019) and Cha et al. (2022) contend that TikTok's content personalization features reshape it into a virtual playground, blurring the line between a social media

platform and a creative tool. The diverse array of filters allows users to elevate their videos, emulating the styles of celebrities. Further, TikTok's algorithm, prioritizing user preferences, holds greater sway compared to peer network-driven recommendation strategies on other social media platforms. This makes TikTok an ideal setting for accessing the interaction between AI's algorithmic influence and user experience (Kang and Lou, 2022). Christian et al. (2023) conclude that artificial intelligence (AI) positively influences personalization and customer experience. They further deduce that with personalization as the mediator, the impact of artificial intelligence (AI) on customer experience is largely (41%) increased. However, the influence of AI-driven personalization on customer experiences is not further tested and investigated with the integration of a specific firm such as TikTok. Therefore, the problem this thesis addresses is the association between AI-driven personalization and customer experience when TikTok integrates AI. More specifically, the impact of AI-driven personalization on customer experience in the context of TikTok.

1.3 Purpose

The purpose of this study is to examine the impact of artificial intelligence-driven personalization on the customer experience within the context of TikTok. This study dives into TikTok's integration of artificial intelligence to provide AI-driven personalization, as well as test the association between such AI-driven personalization that TikTok offers and the customer experience. This study focuses on the customer experience in general on TikTok.

2. Literature review

The domain of AI is experiencing rapid expansion nowadays, with increasing interest among researchers in investigating its influence within the marketing realm. Researchers aim to explore how AI and AI-driven personalization can elevate customer experience, ultimately leading to enhanced customer loyalty and increased profitability. This section will delve into prior research on AI technology, personalization, customer experience, and their interconnections. Additionally, the articles will be rehearsed in chronological order of publication.

In the context of exploring the impact of personalization on customer experience, the seminal work by Hoffman and Novak (1996), "Marketing in Hypermedia Computer-Mediated Environments: Conceptual Foundations," offers a critical foundation. This paper is chosen for its pioneering insights into how digital environments transform marketing strategies, emphasizing the role of personalization in these new settings. Hoffman and Novak's research is highly relevant to our study as it provides a comprehensive conceptual framework that underscores the importance of interactive and personalized marketing in hypermedia environments, which are now central to contemporary digital marketing practices. Hoffman and Novak (1996) delved into the unique characteristics of hypermedia computer-mediated environments (CMEs), highlighting their potential to foster highly interactive and personalized consumer experiences. They argued that CMEs enable marketers to create tailored content and experiences that can adapt to individual user preferences and behaviors in real-time. Moreover, one of the key theoretical contributions of Hoffman and Novak's paper is the concept of the "flow" experience in digital environments. They suggested that a state of flow, characterized by deep engagement and immersion, can be achieved through personalized content that resonates with the user's interests and needs. This flow experience enhances user satisfaction and loyalty, thereby illustrating the profound impact of personalization on customer experience.

Daqar and Smoudy (2019) investigated the impact of artificial intelligence (AI) on enhancing customer experience (CX) across different industries, including banking and telecommunications, within Palestine. This study is particularly relevant to our research on the effects of personalization on customer experience because it underscores the transformative potential of AI-driven personalization in enhancing CX. Daqar and Smoudy employed structured questionnaires and interviews as primary data collection methods. Interviews were conducted with employees from two selected companies to explore the potential benefits of AI implementation. A close-ended questionnaire was utilized to assess internet users' attitudes towards AI, employing both quantitative and qualitative analyses. Results suggested a positive and significant correlation between CX and AI, although the study acknowledged limitations such as the small sample size due to the low population within the selected companies in Palestine. Furthermore, since the

companies were in the planning phase of AI implementation, the data relied on projections and hypotheses. Despite these limitations, the findings provide valuable insights into the prospective advantages of AI in personalizing customer experiences, making this study a pertinent reference for examining the broader impact of personalization on CX.

Kumar et al. (2019) examined the interconnected relationship between artificial intelligence (AI) and personalized engagement marketing, providing insights for our paper on AI-driven personalization. The authors highlighted how AI technologies empower marketers to deliver tailored and relevant experiences to individual customers, thereby enhancing engagement and driving business outcomes. By leveraging AI-driven analytics and machine learning algorithms, organizations can harness vast amounts of data to uncover actionable insights into customer preferences and behaviors, enabling them to deliver personalized content, recommendations, and interactions across various touchpoints. However, while the theoretical framework offers valuable insights into the conceptual underpinnings of AI-driven personalized marketing, the absence of empirical evidence limits the depth of analysis and applicability of the findings.

Tyrväinen et al. (2020) investigated how personalization and hedonic motivation impact customer experience (CX) and loyalty in omnichannel retail settings. Their research is particularly relevant to our study on the effects of personalization on CX, although the areas of focus are different. Employing a mixed-methods approach, the researchers conducted surveys among customers of omnichannel retail establishments in Finland and Sweden. The study sample comprised a diverse range of customers from various demographic backgrounds, ensuring a comprehensive understanding of the research phenomenon. Data collection involved both quantitative surveys and qualitative interviews, allowing for a thorough exploration of customer perceptions and experiences. Through rigorous analysis, the researchers identified a significant positive correlation between personalization, hedonic motivations, and CX. Despite its valuable contributions, the study acknowledged limitations related to sample size and the reliance on survey data. Nonetheless, it sheds light on the pivotal role of personalization strategies in enhancing CX and fostering loyalty in the omnichannel retail landscape.

Kang and Lou (2022) explored the dynamics of human-AI interactions on TikTok and their effects on user engagement, offering valuable insights into AI-user collaboration on TikTok for our study. The research focused on TikTok users who frequently engaged with AI-driven features, employing a mixed-methods approach for thorough data collection. Quantitative data was gathered through structured questionnaires to assess user perceptions of AI versus human agency on the platform and their content preferences, revealing patterns and trends in user behavior and engagement metrics. Moreover, qualitative interviews with a subset of participants offered deeper insights into their experiences and attitudes toward human-AI interactions, adding nuanced perspectives to the study. The findings indicated that TikTok users are receptive to personalized experiences enabled by AI, highlighting the complex nature of human-AI interactions and their significant implications for user engagement and content consumption. This study underscores the critical role of the personalization driven by AI in shaping customer experiences, making it a pertinent reference for examining personalization's broader impact on user engagement and satisfaction.

Lambillotte et al. (2022) examined the role of personalization in enhancing playful customer interactions within retail settings, a study that is directly relevant to our research on the impact of personalization on customer experience. Through a lab experiment, the study explored the impact of personalization on playful customer experiences, utilizing both subjective and objective methods. Structured questionnaires were utilized to gather quantitative data on customer perceptions of personalized experiences and their impact on playfulness in retail environments. Additionally, qualitative interviews provided deeper insights into customers' subjective experiences and attitudes toward personalized interactions. By combining these quantitative and qualitative analyses, the research offers a thorough understanding of the relationship between personalization and playful customer experiences. The findings demonstrate that both actual and perceived personalization significantly enhance playful customer experiences, leading to increased customer engagement and satisfaction in retail contexts. Furthermore, personalized content leads customers to focus more attention on their preferred products, even when spending the same time on the platform. By emphasizing the role of personalization in fostering playful experiences, this research contributes to

the literature on customer experience management and provides practical guidance for marketers seeking to create memorable and enjoyable interactions with their customers.

In summary, the literature review provides valuable insights into the evolving landscape of customer experience (CX) and the role of artificial intelligence (AI) and personalization in shaping it. Hoffman and Novak (1996) provide a foundational perspective on the transformative role of personalization in digital marketing, illustrating how hypermedia environments can create deeply engaging and satisfying customer experiences through tailored content and interactions. Daqar and Smoudy (2019) shed light on the positive correlation between AI implementation and CX enhancement, although acknowledging limitations such as sample size and reliance on projections. Kumar et al. (2019) highlight the symbiotic relationship between AI and personalized engagement marketing, emphasizing the potential of AI-driven analytics to deliver tailored experiences and drive business outcomes. Tyrväinen et al. (2020) delve into the significance of personalization and hedonic motivation in fostering CX and loyalty within omnichannel retail contexts, despite limitations related to sample size and survey data. Kang and Lou (2022) offer insights into human-AI interactions on TikTok, revealing user openness to personalized experiences facilitated by machine agency. Lastly, Lambillotte et al. (2022) explore the impact of personalization on playful customer experiences in retail settings, demonstrating its effectiveness in enhancing engagement and satisfaction.

Overall, the reviewed studies collectively emphasize the importance of CX in contemporary business contexts and highlight the pivotal role of AI-driven personalization in enhancing CX across various industries and platforms. By leveraging AI technologies, organizations can gain deep insights into customer preferences and behaviors, enabling them to deliver personalized experiences that resonate with customers and drive positive outcomes. However, the literature also points out limitations such as small sample sizes and the need for empirical evidence to validate theoretical frameworks. This study seeks to bridge these gaps by employing quantitative methods to further investigate AI-driven personalization and its effect on CX in the context of TikTok, building on existing research to provide more comprehensive and robust empirical evidence.

3. Theoretical Framework and Conceptual Model

3.1 AI-driven Personalization

AI-driven personalization is defined as “the use of advanced algorithms and machine learning techniques to tailor content, product recommendations, and user experiences to individual preferences” (Raji et al., 2024, p.3). According to Gujar (2024, p. 3), “AI personalization is the process of using artificial intelligence to tailor experiences, content, and recommendations to individual users based on their unique preferences, behavior, and data.” Likewise, Bhuiyan (2024), Xu (2023), and Zia (2023) define AI-driven personalization as the use of artificial intelligence (AI) technologies to customize products, services, and marketing to suit individual customer preferences and customer experience.

Based on the previous studies and the application of AI-driven personalization by TikTok, the features of AI-driven personalization mainly include content personalization (Bhuiyan, 2024; Boeker and Urman, 2022; Gujar, 2024; Kang and Lou, 2022; Raji et al., 2024; Sodiya et al., 2024; Xu, 2023; Zanker et al., 2019; Zia, 2023), messages personalization (Ahumada, 2019; Christian et al., 2023; Deng et al., 2019; Syam and Sharma, 2018), location-based personalization (Ahumada, 2019; Boeker and Urman, 2022; Gujar, 2024; Yunos et al., 2003) and recommender system (RS) (Ahumada, 2019; Boeker and Urman, 2022; Christian et al., 2023; Kang and Lou, 2022; Lanneskog, 2023; Zanker et al., 2019; Zhao and Wagner, 2022; Gujar, 2024).

3.1.1 Content Personalization

Content personalization involves delivering specific content to customers based on their preferences. Personalized content is also defined as dynamic content due to its continuous updates in real-time to provide tailored user experiences (Housman, 2024). AI-driven personalization entails analyzing extensive datasets, encompassing user behavior, preferences, and past interactions, to derive insights enabling platforms to predict and deliver exceptionally relevant content (Bhuiyan, 2024; Raji et al., 2024). This approach involves ongoing learning and adaptation. As customers engage with the platform, AI algorithms collect data, enhance their comprehension of customers’ preferences, and

dynamically refine recommendations. Through this iterative process, personalization remains pertinent over time, aligning with shifts in user behavior and preferences (Sodiya et al., 2024; Raji et al., 2024). TikTok's algorithm sets it apart from other social media platforms by focusing on content and user interactions rather than followed accounts. The content featured on the "For You" page is influenced by users' past viewing habits, popular sounds, videos, and hashtags. The algorithm evaluates data such as whether a user watched a video in full, how frequently it was viewed, if the user engaged with it, and the nature of the interaction to determine the next content set for the user. Moreover, TikTok's algorithm dissects videos into text, audio, and visual components, utilizing real-time computer technologies to identify visual objects. This comprehensive analysis enables the algorithm to evaluate all aspects of a video and present it to users who may find it interesting (Klug et al., 2021; Koç, 2023).

3.1.2 Message Personalization

Message personalization involves customizing marketing messages for individual customers, taking into account their unique needs, interests, behaviors, and preferences (Breuer et al., 2021; Gujar, 2024; Wisniach, 2023). Message personalization operates on the principle that aligning messages with users' demographics and personality profiles enhances the persuasion effect (Chu et al., 2024). The automated creation of personalized marketing messages is an emerging field that is gaining traction in both practical applications and research endeavors (Christian et al., 2023). Deng et al. (2019) introduced a system capable of generating personalized advertising copy, which automatically customizes advertising content to meet the specific needs of individual customers. AI-powered personalization enables automatic image captioning or facilitates visual-linguistic question answering and delivers tailored marketing content by considering demographics, purchase history, and browsing patterns (Gujar, 2024). According to Brug et al. (2003), customers are more likely to read, retain, and perceive personalized messages when they are immediately relevant. Personalized marketing messages tend to yield higher click-through rates (Christian et al., 2023). Through AI-driven personalization, TikTok could deliver personalized messages that align with a customer's demographics and brand preferences (Chu et al., 2024).

3.1.3 Location-based Personalization

Location-based personalization refers to analyzing consumer behavior and preferences to propose pertinent products and services tailored to their location and interests (Andallo, 2023). Leveraging a customer's wireless data, such as their location, seasonal trends, and time, can enhance the creation of a more personalized online environment (Ahumada, 2019; Yunos et al., 2003). The content served to a user on TikTok varies based on their location settings (Boeker and Urman, 2022). TikTok utilizes location data to display users' popular content within their vicinity and, when relevant, to present advertisements that are more tailored to their interests (TikTok, 2024).

3.1.4 Recommender System (RS)

The recommender system (RS) stands as a prevalent and frequently cited instance of AI-driven personalization (Zanker et al., 2019). Defined by Han et al. (2004), an RS is a system designed to provide users with access to desired items by suggesting them based on either content similarity to previously used items or ratings from similar users. Essentially, the role of the recommender system is to deliver tailored product suggestions to meet consumer needs (Singh et al., 2023). The “For You” page (FYP) is one of the most crucial elements distinguishing TikTok and its user experience from other social media platforms. The algorithm powering content recommendations on the FYP lies at the core of TikTok's success. TikTok encourages users to primarily engage with content recommended to them through the FYP, with many users seldom venturing beyond this page despite the platform offering additional features and pages (Bhandari and Bimo, 2022; Syrjälä, 2024). Zhao and Wagner (2022) explore the concept of a TikTok user's state of flow and how the platform aims to enhance this experience. TikTok employs various design principles to sustain this state of flow, focusing on perceived recommendation accuracy, perceived recommendation serendipity, and perceived effortlessness. These factors are considered “technology affordances,” indicating the action potential facilitated by a technological tool (Syrjälä, 2024; Zhao and Wagner, 2022).

Perceived recommendation accuracy assesses how accurately users perceive TikTok's algorithm to align with their preferences. TikTok's recommendation algorithms utilize intricate factors like historical usage data and peripheral data to provide personalized content. Users prefer content that matches their preferences due to time constraints, promoting a positive flow experience. However, excessively accurate algorithms may lead to an "information cocoon," where content becomes predictable, hindering the user's flow state. This is where perceived recommendation serendipity becomes crucial (Zhao and Wagner, 2022; Syrjälä, 2024). *Perceived recommendation serendipity* measures the extent to which recommended videos exceed user expectations, evoking feelings of surprise and delight that enhance the flow experience. Unexpected recommendations positively influence user engagement, even if they deviate from user preferences. Users then become passive receivers of information, with perceived recommendation serendipity significantly correlating with user engagement on short-video platforms like TikTok (Zhao and Wagner, 2022; Syrjälä, 2024).

Perceived effortlessness evaluates the ease of platform usage, with less cognitive effort indicating a better user experience (Zhao and Wagner, 2022; Syrjälä, 2024). The For You page (FYP) on TikTok offers users a refreshing departure from conventional social media platforms by minimizing the cognitive effort needed to browse and allowing users to effortlessly enjoy content without actively seeking it out. Unlike traditional platforms where users skim through content or speed-scroll to find what they want to watch, TikTok removes these barriers, creating a seamless viewing experience (Syrjälä, 2024). However, video length weakens the correlation between perceived effortlessness and user flow experience on TikTok, as short-form videos require more frequent browsing and cognitive effort. Nonetheless, TikTok's For You page simplifies browsing by delivering recommended videos without cognitive selection, enhancing user experience, especially for newer users (Zhao and Wagner, 2022; Syrjälä, 2024).

3.2 Customer Experience

The significance of customer experience has grown substantially during the last few years. Both industry professionals and academic researchers have recognized the significant and strategic impact of customer experience on the advancement of

contemporary businesses (Johnston and Kong, 2011; Bilgihan et al., 2016). Nowadays, achieving competitive advantages in the market often hinges on delivering exceptional customer experiences (Pei et al., 2020). An excellent customer experience might be associated with customer satisfaction, loyalty, and expectations (Johnston and Kong, 2011).

In the 1950s, Abbott (1955) proposed the idea that what people truly desire are not just products, but fulfilling experiences. This notion laid the groundwork for later discussions on customer experience. Pine and Gilmore (1998) further refined this concept, distinguishing it from mere goods and services. They defined customer experience as a series of memorable events orchestrated by a company for its customers. Subsequent researchers, such as Schmitt et al. (2015), viewed customer experience as a holistic phenomenon, covering every interaction between customers and service providers. Similarly, according to Bansal (2016), customer experience encompasses the collective sentiment of customers towards a particular brand, formed by their interactions across various touchpoints. Consumers seek personalized interactions, and companies are keen to meet this demand (Boudet et al., 2019). Specifically, companies aim to elicit positive customer responses, known as customer experience, by customizing touchpoints according to individual preferences and needs, a process referred to as personalization.

In general, customer experience is a product of various factors (Piotrowicz and Cuthbertson, 2014). To get a better understanding of customer experience, Verhoef et al. (2009) present a comprehensive conceptual framework suggesting that customer experience involves various dimensions, including cognitive, affective, emotional, social, and physical aspects. Similarly, Lemon and Verhoef (2016) emphasized that customer experience is a multifaceted concept that encompasses cognitive processes, customer emotions, social responses, customer actions, and sensory perceptions of a company's offerings. Besides, Gentile et al. (2007) identified six components of customer experience: cognitive, emotional, pragmatic, sensorial, relational, and lifestyle. Moreover, Rose et al. (2012) suggested that the core logic behind these components lies in the interpretation of online store stimuli by customers, who consider both emotional and cognitive perspectives in shaping their overall customer experience. Overall, the analysis of various definitions of customer experience suggests that it is a highly

subjective and individual concept that tends to vary between interactions, collectively shaping the consumer journey (Hollebeek et al., 2020).

3.2.1 Emotions

Emotions play a great role in shaping the customer experience. Bagozzi et al. (1999) described emotions as a psychological state that emerges from the cognitive evaluation of events or thoughts, characterized by a subjective tone and accompanied by physiological responses. Pullman and Gross (2004) discovered that experience design focuses on establishing emotional connections with customers by strategically arranging tangible and intangible elements in both physical and relational settings. Customers derive significant satisfaction when their emotions are engaged, prompting companies to employ various innovative methods to evoke and fulfill customers' emotional needs (Bagdare, 2015). According to Kuuru et al. (2020), emotions arise from an individual's unique assessment of their experiences, formed through the evaluation and interpretation of actions and the surrounding environment. This means that emotions are inherently subjective, leading different individuals to have varied emotional responses to the same action in identical circumstances. Additionally, emotions exhibit variability and can manifest diversely. Similar to customer experience, emotions are also influenced by social factors; they are socially contagious, implying that individuals are drawn to the emotions expressed by those they interact with (Huang, 2001). Indeed, crafting a comfortable, interesting, enjoyable, and immersive environment, coupled with the creation of a customer journey that evokes emotions, contributes to a more positive customer experience (Tyrväinen et al., 2020).

3.2.2 Cognitive Processes

Apart from emotions, cognitive is another crucial component of customer experience (Gentile et al., 2007). Cognitive processes refer to advanced mental functions such as perception, memory, abstract thinking, problem-solving, and use of knowledge (APA, 2024). In the context of customer experience research, cognitive processes have been examined from two distinct perspectives: the achievement of goals and the confirmation or disconfirmation of prior expectations (Keiningham et al., 2017). The first perspective

operates on the premise that consumers engage in goal-directed behavior. Customers establish goals, whether consciously or subconsciously, within specific contexts and utilize consumption as a means to achieve them (Bagozzi and Dholakia, 1999). Within marketing literature, goal-directed behavior is regarded as a cognitive process, with goal attainment being the outcome of this process (Haugtvedt et al., 2018). Therefore, the achievement of goals constitutes one aspect of customer experience, and assessing goal attainment is essential for evaluating the cognitive component of customer experience (Novak et al., 2003). The second perspective is based on the premise that customers hold expectations prior to selecting a service. Research has examined whether the actual customer experiences align with or deviate from these prior expectations, which influences satisfaction or dissatisfaction (Gentil et al., 2007; Homburg et al., 2006).

3.2.3 Social Dimension

Customer experience is also affected by the social environment (Verhoef et al, 2009). The social dimension of customer experience involves how employees, other customers, and broader social networks influence customer interaction (Verhoef et al, 2009). Although much attention in existing literature has centered on the interaction between the company or its staff and the customer (Tsiros and Parasuraman, 2006), researchers should also recognize that interactions among customers can significantly impact customer experience (Martin, 1996). Just as customers interact with each other in a physical setting, they can also participate in "interaction" online through actions by sharing comments on different websites, blogs, or chat rooms (Verhoef et al, 2009). Studies have shown that this type of information is highly impactful and serves as a modern form of conventional word-of-mouth communication (Hagel, 1999; Spaulding, 2010).

Furthermore, physical and sensorial elements are also key factors in customer experience but are commonly measured by experimental methods (Keiningham et al., 2017). Hence, this article excludes them from the measurement indicators.

3.3 Conceptual Model

Integrating artificial intelligence tools such as sentiment analysis, emotion detection, virtual assistants, chatbots, and content curation improves personalization, enhances

service quality, and streamlines customer interactions, thereby enhancing the overall customer experience. Positive experiences foster satisfaction and build trust in the brand, influenced by the level of customer engagement and the perceived value of the brand. Customers who benefit from personalized, seamless, and high-quality service are more likely to exhibit brand loyalty, advocate for the brand, and provide valuable feedback for further improvements (Sujata et al., 2019). Christian et al. (2023) found that artificial intelligence significantly enhances customer experience, customer loyalty, and personalization. Moreover, the impact of artificial intelligence on both customer experience and loyalty is mediated by AI-driven personalization. Gujar, (2024) suggests that AI-driven personalization can enhance the personalization and humanization of experiences across various touchpoints and stages of the customer journey, therefore, it is transforming marketing practices and improving customer experiences.

AI-driven personalization has been widely used by many companies. Numerous B2C corporations, such as Amazon and Microsoft Premier, have pioneered sophisticated iterations of recommender systems, employing them to suggest series to users based on their observed behaviors. Even within popular social networks like Instagram, Twitter, and TikTok, the recommender system is prominently integrated, offering video and content recommendations tailored to users' characteristics and behaviors. Users are greeted by their registered names, and content is suggested based on their previous viewing history (Christian et al., 2023). Moreover, Syam and Sharma (2018) evaluated the utilization of AI in marketing and sales operations. It revealed that AI plays a substantial role in lead generation by facilitating the delivery of customized and highly personalized marketing content to individuals. Besides, Syam and Sharma (2018) explored the integration of robo-advisors into the sales process and found that robo-advisors can access customers' communication histories to personalize their interactions according to each customer's specific requirements.

TikTok stands out from other prominent social media platforms such as Instagram or Twitter due to a crucial distinction: its content distribution strategy relies entirely on algorithms, unlike other platforms where user relationships significantly influence content distribution (Bandy and Diakopoulos, 2021; Klug et al., 2021). The success of TikTok is largely credited to its high degree of personalization enabled by

recommendation algorithms (Zhao, 2021). TikTok employs its AI algorithms primarily to detect users who demonstrate a higher propensity for engaging with videos (Herman, 2023). By analyzing users' previous interactions, TikTok curates content to populate their "For You" page, offering a highly personalized browsing experience (Cervi, 2021). This approach enables customers to discover TikTok videos that align with their preferences, resulting in a unique and tailored viewing experience (Syrjälä, 2024). Therefore, it is necessary to conduct a comprehensive examination of the association between AI-driven personalization and customer experience when it comes to TikTok. Based on the discussions above, the following hypothesis is formulated:

H1: AI-driven personalization has a positive impact on customer experience in the context of TikTok.

Based on the above discussion, the conceptual model of the hypothesis testing is exhibited in Figure 1.

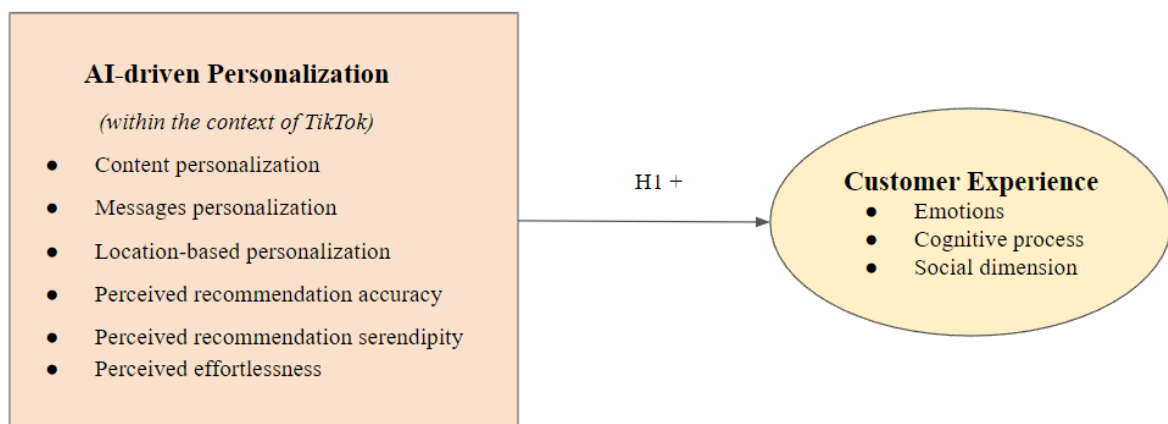


Figure 1. Conceptual Model of AI-driven Personalization's impact on customer experience within the context of TikTok (own).

4. Methodology

4.1 Research Approach

4.1.1 Deductive Research

Given the nature of this study, a deductive research approach has been adopted. Previous studies have utilized deductive methods, and as the aim of this study is to test and contribute to existing theories, deductivism is deemed most appropriate. Additionally, a deductive approach elucidates the relationship between theory and empirical research, allowing researchers to test their area of interest or build upon existing knowledge (Bell et al., 2022). In conducting deductive research, the researcher begins with theory, as deductive reasoning seeks to test these theories (Streefkerk, 2019). By leveraging knowledge within the field of interest and theoretical considerations, the researcher establishes the hypothesis, which is then subjected to empirical scrutiny. The formulation of the hypothesis enables them to undergo empirical testing. Moreover, the deductive approach necessitates specifying how empirical data are collected based on the deductions made from existing concepts. Upon acceptance of the hypotheses, the final step of the deductive process involves integrating the findings back into the theory.

4.1.2 Quantitative Research

Quantitative research is employed in this study, representing a distinguished research strategy for gathering pertinent information through numerical data, which is subsequently used to analyze relationships between statistical data and the desired outcomes. Quantitative researchers primarily adopt a deductive approach due to the inherent logic in quantitative research steps (Bell et al., 2022). In this report, existing theory is applied to a novel context, and the hypothesis is formulated and tested against the theory for validation or refutation. Moreover, quantitative research aims to examine relationships between variables by collecting measurable and numerical data. This inquiry is regarded as unbiased and independent of the researcher's opinions, emphasizing objective measurements. Consequently, quantitative methods are perceived as neutral and prioritize objective assessments.

As previously mentioned, the purpose of this study is to examine the impact of artificial intelligence-driven personalization on customer experience within the context of TikTok. Therefore, a quantitative approach is applied to view the relationship between AI-driven personalization and customer experience. This means that customer experience is the dependent variable and AI-driven personalization is the independent variable. As such, one hypothesis was formulated, and upon testing, the researcher will either reject or fail to reject it. To examine this hypothesis, researchers need to collect measurable data to unveil the relationships between different variables.

4.2 Research Design

The selected research design for this study is the cross-sectional research design, also known as survey research. According to Bell et al. (2022), the cross-sectional design is particularly useful for collecting extensive and diverse data across multiple variables, facilitating the exploration of variations between variables and the examination of their associations. To establish this variation, multiple cases must be examined, making the cross-sectional design well-suited for the researcher's needs. In cross-sectional research, participants receive and respond to the questionnaire simultaneously, enabling data collection within a relatively short timeframe and minimizing researcher manipulation (Bell et al., 2022). Given that this project aims to elucidate the impact of AI-driven personalization on customer experience, the collection of extensive and diverse data is crucial. The cross-sectional design is ideal for this study as it allows for the examination of variations between variables through the detection of numerous cases and the exploration of associations between variables. Therefore, the cross-sectional design is the most suitable choice for this study.

4.3 Data Collection Method

In this study, a self-completion questionnaire was chosen as the method of data collection. This type of questionnaire allows respondents to read and answer survey questions independently. The questionnaire was administered online, selected for its accessibility to both researchers and respondents, as well as its cost-effectiveness and time-saving advantages compared to other quantitative research methods like interviews and postal questionnaires. Self-completion questionnaires typically include fewer

open-ended questions, as closed-ended questions are generally easier to respond to. To ensure clarity and comprehension among respondents, the questionnaire and research instrument were carefully crafted. Questions were formulated consistently, often beginning with phrases like "It is important to me that..." followed by the specific indicator being measured. This clear and user-friendly design aimed to minimize errors resulting from respondents' misunderstanding or skipping questions. Moreover, the questionnaire was kept concise to prevent respondent fatigue and ensure higher response rates.

When creating self-completion questionnaires online, researchers have access to various functions such as requiring respondents to answer all questions before submitting the questionnaire. Furthermore, based on the research purpose, researchers can utilize online survey functions to manage relevant data by permitting respondents to skip questions. For example, if the researcher aims to gather data from TikTok users, respondents who do not use TikTok can skip to the end of the questionnaire.

4.3.1 Data Collection Instrument

In this study, data collection is facilitated through a self-completion questionnaire initially created using Google Forms in English. Nevertheless, later on, considering the convenience for the Chinese users to fill out the questionnaire, the authors decided to create one more questionnaire through Wenjuanxing both in Chinese and English. Since the two authors of this article are both from China, it is easier to expand the sample size by distributing questionnaires through Chinese social media platforms in China and Europe. Wenjuanxing is the most popular tool for online surveys in China. However, it is available for not only Chinese users but also for Western users. The choice of Google Forms and Wenjuanxing is based on its ease of use, enabling users to create and distribute online surveys effortlessly. Additionally, its cost-free nature makes it accessible and budget-friendly, particularly beneficial for students.

4.3.2 Operationalisation and Measurement of Variables

To validate the formulated hypotheses, theoretical concepts must be measured, and operationalization serves as a valuable tool for this purpose. Operationalization enables

researchers to translate abstract concepts into measurable indicators that represent the underlying constructs for examination (Bell et al., 2022; Saunders et al., 2019). These indicators are then used to formulate clear, easily understandable, and relevant questions derived from broad and abstract theoretical constructs (Bell et al., 2022).

Table 1. Operationalization, (own).

Theoretical Concept	Definition	Operational Definition	Construct/ Indicator	Code	Measurement	Reference(s)
AI-driven personalization	AI-driven personalization is defined as “the use of advanced algorithms and machine learning techniques to tailor content, product recommendations, and user experiences to individual preferences” (Raji et al., 2024, p.3). According to Gujar (2024, p.3), “AI personalization is the process of using artificial intelligence to tailor experiences, content, and recommendations to individual users based on	Content personalization involves delivering specific content to customers based on their preferences. Personalized content is also defined as dynamic content due to its continuous updates in real-time to provide tailored user experiences (Housman, 2024).	Content personalization	Per_1	It is important to me that I am offered AI-driven personalized content based on my preferences while using TikTok.	Andallo (2023); Breuer et al.(2021); Gujar (2024); Housman (2024); Zhao and Wagner (2022); Zia (2023); Raji et al. (2024); Syrjälä (2024);
		Message personalization involves customizing marketing messages for individual customers, taking into account their unique needs, interests, behaviors, and preferences (Breuer et al., 2021; Gujar, 2024; Wisniach, 2023).	Messages personalization	Per_2	It is important to me that I am offered AI-driven personalized marketing messages to meet my specific needs while using TikTok.	Wisniach (2023)

	their unique preferences, behavior, and data.”	Location-based personalization refers to analyzing consumer behavior and preferences to propose pertinent products and services tailored to their location and interests (Andallo, 2023).	Location-based personalization	Per_3	It is important to me that I am offered AI-driven personalized content based on my location while using TikTok.
		Perceived recommendation accuracy assesses how accurately users perceive TikTok's algorithm to align with their preferences (Zhao and Wagner, 2022; Syrjälä, 2024).	Perceived recommendation accuracy	Per_4	It is important to me that I am offered AI-driven personalized recommendations that are accurately aligned with my preferences while using TikTok.
		Perceived recommendation serendipity measures the extent to which recommended videos exceed user expectations, evoking feelings of surprise and delight that enhance the flow experience (Zhao and Wagner, 2022; Syrjälä, 2024).	Perceived recommendation serendipity	Per_5	It is important to me that I am offered AI-driven personalized unexpected recommendations that make me surprised and delighted while using TikTok.

		Perceived effortlessness evaluates the ease of platform usage, with less cognitive effort indicating a better user experience (Zhao and Wagner, 2022; Syrjälä, 2024).	Perceived effortlessness	Per_6	It is important to me that I am offered personalized recommendations without extra effort while using TikTok.	
Customer Experiences	Pine and Gilmore (1998) defined customer experience as a series of memorable events orchestrated by a company for its customers. According to Bansal (2016), customer experience encompasses the collective sentiment of customers towards a particular brand, formed by their interactions across various touchpoints.	Bagozzi et al. (1999) described emotions as a psychological state that emerges from the cognitive evaluation of events or thoughts, characterized by a subjective tone and accompanied by physiological responses. Crafting a comfortable, interesting, enjoyable, and immersive environment, coupled with the creation of a customer journey that evokes emotions, contributes to a more positive customer experience (Tyrväinen et al., 2020).	Emotions (Comfortable, interesting, enjoyable, and immersive)	CX_1	It is important to me that I am able to get positive emotions while using TikTok, such as feeling comfortable, interesting, enjoyable or immersive.	APA, 2024; Bansal (2016); Bagozzi et al. (1999); Gilmore (1998); Keiningham et al. (2017); Meyer and Andre, 2007; Tyrväinen et al. (2020); Verhoef et al. (2009)

		<p>Cognitive processes refer to advanced mental functions such as perception, memory, abstract thinking, problem-solving and use of knowledge (APA, 2024). Cognitive processes have been examined from two distinct perspectives: the achievement of goals and the confirmation or disconfirmation of prior expectations (Keiningham et al., 2017).</p>	<p>Cognitive (Confirmation of prior expectations)</p>	<p>CX_2</p>	<p>It is important to me that I am able to obtain the content that meets my expectations while using TikTok.</p>	
		<p>The social dimension of customer experience involves how employees, other customers, and broader social networks influence customer interaction (Verhoef et al, 2009).</p>	<p>Social (Interaction)</p>	<p>CX_3</p>	<p>It is important to me that I am able to interact with others while using TikTok.</p>	

4.3.3 Questionnaire Design

The questionnaire designed for this study starts by providing participants with a brief explanation of the research's purpose and its intended use, aligning with ethical considerations as discussed in Chapter 4.7. The questionnaire includes a brief

introduction to key concepts to aid participants in understanding the questions and interpreting them correctly. The first question simply asks participants whether they use TikTok. This question is pivotal as it allows researchers to distinguish between relevant and irrelevant responses. Since the research focuses on TikTok, respondents who do not use it are considered irrelevant and will be excluded from the study. Subsequent questions inquire about participants' age, gender, and education level. Asking such questions aids researchers in forming a general understanding of the participant demographic. The following questions are drawn up to embody the variables and items outlined in the operationalization table (refer to Table 1, pp. 25-28).

The questionnaire devised for this study adopts a 7-point Likert scale format, as recommended by Bell et al. (2022). This scale allows respondents to express their level of agreement with statements across a range of responses, spanning from one extreme to another. A 7-point Likert scale offers advantages over a 5-point Likert scale by providing a broader spectrum of responses, thereby yielding a more precise reflection of respondents' evaluations for each question. Consequently, this facilitates clearer differentiation between various responses during the study's analysis phase (Bell et al., 2022). The complete questionnaires are provided in Appendix I and Appendix II at the end of this report (see pp. 68-79).

4.3.4 Pre-test

A pre-test is utilized to enhance the online survey and optimize the overall data collection process to elicit the best possible responses from the selected sample. In this study, the researchers distributed the self-completion online survey to two participants chosen due to the limited data collection time to represent the sample. The accuracy of pre-test feedback hinges more on its thoroughness and value than on the number of test pilots involved (Bell et al., 2022; Thomas, 2004). These respondents, all TikTok users, encompassed diverse genders and age groups. They all live in Sweden, one is from Singapore and the other is from the Netherlands. Consequently, the researchers obtained a range of perspectives and assessments regarding the survey's design. Based on the feedback obtained from the pre-tests, adjustments were made, such as changing the word from “when” to “while” and revising the question from “It is important to me that I am

able to obtain the desired content when using TikTok” to “It is important to me that I am able to obtain the content that meets my expectations while using TikTok” to ensure the clarity and easy-to-understand.

4.4 Sampling

In this research, the population comprises all TikTok users. A non-probability sampling approach was adopted, specifically convenience sampling, to gather participants. Convenience sampling involves selecting participants based on their accessibility or convenience to the researcher (Edgar and Manz, 2017; Galloway, 2005). Given that the study aims to explain how AI-driven personalization impacts customer experience on TikTok, the target population consists of individuals who use the platform. With a convenience sampling method, researchers can easily reach out to participants and collect data swiftly and inexpensively. Moreover, since most people known to the researchers are TikTok users, identifying and surveying participants becomes more straightforward and convenient.

Consequently, the researchers disseminated the Google Form and Wenjuanxing questionnaires across various social media platforms, including Facebook, Messenger, WeChat, WhatsApp, Weibo, and The Little Red Book (Xiaohongshu) in both China and Europe for all the TikTok users to answer. Besides, they shared survey links with acquaintances and individuals within their network to maximize data collection. Given that the initial survey question inquired about TikTok usage, individuals using TikTok were considered representative of the total sample. However, the users' locations are not the focus of this study. The questionnaire does not include a question regarding the respondents' location since this study does not make a comparison with the responses gathered from China and Europe.

Moreover, the researchers employed a formula to determine the sample size, following Pallant's (2020) recommendation of $N > 50 + 8m$, where "m" denotes the number of independent variables in the study. As this study features only one independent variable, the minimum required sample size was calculated to be at least 58 cases.

4.5 Data Analysis Method

For conducting data analysis, researchers often turn to the IBM Statistical Package for Social Sciences (SPSS) software. SPSS is widely utilized for quantitative data analysis due to its user-friendly interface and diverse data processing capabilities (Bell et al., 2022; Bryman and Cramer, 2011).

4.5.1 Data Coding, Entry, and Cleaning

Before proceeding with data analysis, several preliminary tasks must be completed, including data coding, data entry, and cleaning. Firstly, To code data, survey responses are converted into codes to facilitate computerized analysis. These codes are then inputted into software like SPSS Statistics, meaning data entry. When a question remains unanswered, it results in a missing value, which may occur due to respondent oversight, lack of understanding, or reluctance to answer (Stopher, 2012; Bell et al., 2022). Since the questionnaire in this study required respondents to answer all questions before submission, no missing data was encountered, obviating the need to address how to code missing data.

When coding the data, the questions related to AI-driven personalization represent the independent variable and are coded as Per_1-6. The questions concerning customer experience represent the dependent variable and are coded as CX_1-3. The respondents' demographic information questions were assigned specific codes to facilitate measurement. For age, categories were coded as follows: <18 as 1, 18-24 as 2, 25-34 as 3, 35-44 as 4, 45-54 as 5, and >=55 as 6. Gender categories were coded as male=1, female=2, other=3, and prefer not to say=4. Similarly, education levels were coded as high school=1, bachelor degree=2, master degree=3, doctoral degree=4, and other=5. Regarding time spent on TikTok per week, categories were coded as follows: less than 5 hours=1, 5 to 10 hours=2, 11 to 20 hours=3, 21 to 30 hours=4, 31 to 40 hours=5, and more than 40 hours=6.

Furthermore, ensuring the accuracy of the data analysis requires data cleaning, including identifying errors such as extreme values and missing values, and then correcting or eliminating them. In this paper, extreme values were identified using descriptive

statistics. As all questions were required to be answered, no data was missing. The data collected from respondents who responded “No” to the question “Do you use TikTok?” is considered invalid responses, There were 380 responses collected through Wenjuanxing with 340 valid responses and 34 responses were gathered through Google Forms with 25 valid responses. Therefore, 365 responses were considered valid and used for the data analysis in this study.

4.5.2 Descriptive Statistics

By offering summaries of basic information and measures within a dataset, descriptive statistics describe the characteristics of the sample. This facilitates a straightforward understanding of the research outcomes and aids in their interpretation (Pallant, 2020). Hence, descriptive statistics are utilized in this study. To test the hypothesis, various descriptive statistics about the variables need to be obtained, including measures such as mean, standard deviation, and skewness (Pallant, 2020). Mode, median, and mean are the three primary types of averages used to measure central tendency (Saunders et al., 2019). Moreover, measures of variability, or dispersion, illustrate how data values are spread across a distribution. Standard deviation is a common method used to describe dispersion, with its value indicating the extent of deviation from the mean (Saunders et al., 2019).

Furthermore, skewness and kurtosis are measures used to describe the distribution of data values (Pallant, 2020; Malhotra and Birks, 2007). Skewness indicates whether the distribution of data values is skewed or symmetric, while kurtosis reveals whether the distribution of data values is peaked or flat. In a perfectly normal distribution, both skewness and kurtosis have a value of zero, indicating a symmetric distribution where the mean, median, and mode are equal (Saunders et al., 2019). According to Ho and Yu (2015) and Hair et al. (2015), skewness values between -1 and +1 and kurtosis values between -3 and +3 are considered acceptable for a normal distribution. A normal distribution helps in identifying outliers or extreme values (Moore et al., 2009).

4.5.3 Regression Analysis

Regression analysis aims to elucidate the connection between a solitary, continuous dependent variable and one or multiple independent variables. When examining the association between a single dependent variable and one independent variable, this statistical method is referred to as simple linear or bivariate regression (Hair et al., 2019). This analysis is utilized to determine the relationship between the dependent and independent variables, involving two primary tests. One test assesses whether a linear relationship exists between the dependent and independent variables, commonly known as Pearson's correlation coefficient (r). The other test, known as the coefficient of determination (R-square), aims to explain the variation in the dependent variable (Hair et al., 2019).

Pearson's correlation coefficient (r) is also known as correlation analysis, which is a method used to assess whether there is a linear relationship between two variables (Pallant, 2020). It examines pairs of variables to determine if one variable changes as the other variable changes, although the causality between them remains uncertain. The Pearson correlation coefficient (r) is commonly employed to gauge the strength and direction of the association between continuous and/or categorical variables (Saunders et al., 2019). The value of r ranges from -1 to +1, where positive values denote a positive correlation between variables, negative values indicate a negative correlation and a value of 1 or -1 signifies a perfect positive or negative correlation, respectively. A value of 0 suggests no relationship between the variables.

The coefficient of determination test evaluates the significance of the model by analyzing the R-square (R^2). The typical significance level (α) is set at 0.05, representing that when the significance ('Sig.') of the R-square is below 0.05 ($p < 0.05$), the hypothesis is accepted (Hair et al., 2019). R-square signifies the goodness of fit of the model examined. Both R^2 gauge the overall strength of the model, reflecting the percentage of variance in the dependent variable explained by the independent variable. The value of R^2 is between 0 to 1 (Pallant, 2020; Hair et al., 2019; Saunders et al., 2019).

In this study, there is one dependent variable, customer experience, and one independent variable, AI-driven personalization. Bivariate regression analysis was utilized to examine the hypothesis and determine whether the independent variable has a significant positive or negative impact on the dependent variable.

4.6 Quality Criteria

In business research, especially from a quantitative perspective, according to Bell et al. (2022), reliability and validity are fundamental assessment criteria. Reliability pertains to the stability and consistency of the instrument for the research, ensuring the accuracy of the findings of the study. Conversely, validity concerns whether the findings can be deemed trustworthy.

4.6.1 Reliability

Saunders et al. (2019) highlight the importance of reliability in research, emphasizing that reliable results can be reproduced consistently by other researchers. Gray (2017) further underscores this point in quantitative research, stating that reliable studies should yield consistent outcomes no matter how many times they are measured. Bell et al. (2022) delineate three key principles for assessing reliability: stability, internal reliability, and inter-observer consistency. *Stability* refers to the consistency of results over time, while *internal reliability* assesses the consistency of results across different items within the same test. *Inter-observer consistency* measures agreement among participants when evaluating the same thing. *Cronbach's Alpha* is commonly employed in research as a common indicator of internal reliability, with values above 0.7 generally considered reliable. However, differing views exist, with Malhotra (2010) suggesting a range of 0.6 to 1.0. In this study, the assessment of the reliability transparently utilized Cronbach's Alpha, detailed in the following results chapter.

4.6.2 Validity

Bell et al. (2022) propose that assessing a study's validity involves questioning how accurately its results reflect reality. A study with high validity is seen as a reliable reference, indicating that its findings align well with those one might observe among

similar groups outside of the research context. Within this framework, several aspects of validity stand out, including internal validity, external validity, and construct validity. *Internal validity* evaluates whether the observed effect is truly generated by the independent variable outlined in the theory. For this study, achieving internal validity would mean that the impact of the dependent variable is solely attributable to the independent variable. *External validity*, on the other hand, concerns how well the study's findings can be applied to other individuals and settings, essentially gauging the generalizability of the results. Finally, *construct validity* involves ensuring that the research data effectively supports the underlying theoretical framework, demonstrating that the operationalization accurately represents how these concepts function beyond the study's confines (Bell et al., 2022). In this research, to ensure construct validity, factor analysis was applied, more specifically, the KMO and Bartlett's Test were executed. Therefore, the authors of this study have taken deliberate steps to transparently illustrate the connections between theory, hypotheses, and the operationalization of concepts.

4.7 Ethical Considerations

Bell et al. (2022) highlight several ethical considerations that researchers must address in any research endeavor. For quantitative questionnaires, like the one used in this research, ensuring voluntary participation and obtaining informed consent from participants is paramount. This entails disclosing the purpose of the study upfront, which the researchers did at the beginning of the questionnaire. Anonymity should also be guaranteed to protect participants' identities and the confidentiality of their responses. To maintain anonymity, sensitive information such as names, addresses, and phone numbers was not requested, and respondents were not required to provide email addresses to access the online questionnaire. Regarding data analysis, Bell et al. (2022) stress the importance of accurately reporting all analytical approaches and results without any fabrication or distortion. Researchers must resist the temptation to manipulate findings to fit preconceived notions or biases. Transparency throughout the research process, including data collection and analysis methods, is crucial to ensure the integrity of the findings. To adhere to this principle, the researchers of this report prioritized transparency by providing a comprehensive account of their research trajectory, from planning and execution to analysis and conclusion. Furthermore, Bell et al. (2022) emphasize the need

for full disclosure of all sources and approaches used to capture and analyze the data to prevent misinterpretation of the findings. In this study, the authors diligently followed this advice by offering readers detailed insights into their research methodology and findings, allowing for a clear understanding of the study's outcomes.

4.8 Reflections

The data gathered through questionnaires does not consider the location of the users and which versions of TikTok they use. When examining the influence of AI-driven personalization on customer experience on TikTok, the differences between the Chinese version (Douyin) and the international version may lead to distinct customer experiences for Chinese and Western users. These differences, rooted in cultural and regulatory variances between China and Europe, can significantly affect how users interact with and perceive the platform and ultimately affect their experience. The data collected through Google Forms and Wenjuanxing may lead to bias. This bias can cause several effects. Firstly, the data might need to accurately represent the overall customer experience, leading to *skewed results* that favor one user group over another. Secondly, researchers might *misinterpret the findings*, assuming that the observed experiences are universal, when in fact they are specific to the sample population. Thirdly, the *insights* drawn from biased data could be *inaccurate*, affecting the overall understanding of how AI-driven personalization impacts customer experience across different regions. Fourthly, the findings may *not be generalizable* to the entire TikTok user base, particularly if the sample does not adequately represent both Chinese and Western users. Next, cultural nuances and regulatory differences that influence customer experience might be *overlooked*, leading to a one-size-fits-all approach that does not cater to the unique needs of different user groups. Last, it may lead to *platform-specific user bias*. It is unclear through which platform the respondents filled out the questionnaire. Different social media platforms usually attract different demographics. Additionally, two pre-tests may be questioned in their effectiveness. If time is allowed, more pre-tests can be done to increase the reliability and validity of the survey, improve response quality, and ensure that the final sample is representative.

4.9 Summary of Methodology

The methodology used in this research when explaining the impact of AI-driven personalization on customer experience within the context of TikTok is summarized in the following table to give a general understanding of the study.

Table 2. Summary of methodology (own).

Subject	Measurement
Research Approach	<ul style="list-style-type: none">• Deductive research• Quantitative research
Research Design	<ul style="list-style-type: none">• Cross-sectional design
Data Collection Method	<ul style="list-style-type: none">• Survey
Data Collection Instrument	<ul style="list-style-type: none">• Self-completion questionnaire
Sampling	<ul style="list-style-type: none">• Convenience Sampling
Data Analysis Method	<ul style="list-style-type: none">• Data coding, entry, and cleaning• Descriptive statistics• Regression analysis
Quality Criteria	<ul style="list-style-type: none">• Reliability• Validity
Ethical Consideration	<ul style="list-style-type: none">• Voluntary participation• Anonymity• Consent• No fabrication or distortion• Full transparency

Reflections	<ul style="list-style-type: none"> ● Skewed results ● Misinterpretation of findings ● Inaccurate insights ● Limited generalizability ● Cultural oversights ● Platform-specific user bias
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5. Results

5.1 Demographics and Descriptives

This part presents the background information of the participants in the study, encompassing the following attributes: age, gender, education level, and time spent on TikTok per week. As previously stated, the initial question inquired whether participants used TikTok. Given that the study centers on TikTok, respondents who do not use TikTok are deemed irrelevant and excluded from the study, thus terminating their participation in the questionnaire. The survey was conducted via online platforms and personal contacts, and a total of 414 responses were collected. Out of these, there were 365 valid data (i.e. 365 respondents use TikTok), which were then put into SPSS for further analysis.

The table below displays the demographic characteristics of respondents who fully completed the distributed questionnaire. The survey sought to include respondents of all genders and age groups as much as possible to achieve broad diversification. The demographics firstly imply that the age group “25-34” was the highest composition of the total number of respondents where it was (30.96%). The age group “18-24” consisted of (27.40%) of the total number of respondents received from the survey. From the total study sample, (2.47%) was the lowest number of respondents who belonged to the age group “>=55”, where (6.03%) of the respondents were “<18” years old. Secondly, regarding the gender presentation, the ratio of male and female proportion was 39.18% and 60.82%, respectively. No participant identified themselves as “other” or preferred not to state their gender. Thirdly, the survey asked the respondents to specify their education level. Of the studied sample, the educational category with the highest number of

respondents is Bachelor's degree (66.30%), followed by Master's degree (15.62%), followed by High school (10.14%), followed by Other (7.40%), followed by Doctoral degree (0.55%).

As descriptives, we had questions regarding how much time the respondents spent on TikTok per week. Since the purpose of this study is to examine the impact of AI-driven personalization on customer experience in the context of TikTok, this issue deserves attention. We can see in Table 3 that the answers were quite mixed, even though the biggest proportion spends less than 5 hours and 5-10 hours per week.

The demographic information is valuable for understanding how to maximize the contributions of the respondents. Analyzing these results ensures a positive contribution to the study by leveraging insights from individuals most knowledgeable about TikTok and its use.

Table 3. Frequency of age, gender and education level (own).

Variable	Answer option	Frequency	Percentage
Age group	<18	22	6.03%
	18-24	100	27.40%
	25-34	113	30.96%
	35-44	62	16.99%
	45-54	59	16.16%
	>=55	9	2.47%
Gender	Male	143	39.18%
	Female	222	60.82%
	Other	0	0%
	prefer not to say	0	0%
Education level	High school	37	10.14%
	Bachelor degree	242	66.30%
	Master degree	57	15.62%
	Doctoral degree	2	0.55%

	Other	27	7.40%
Time spent on TikTok per week	Less than 5 hours	176	48.22%
	5 to 10 hours	103	28.22%
	11 to 20 hours	46	12.60%
	21 to 30 hours	17	4.66%
	31 to 40 hours	9	2.47%
	More than 40 hours	14	3.84%

5.2 Descriptive Analysis

After analyzing the demographics, it is important to identify any outliers in the data. To do this, we conduct a descriptive analysis of the data presented in Table 4. The analysis reveals that each item has a total of 365 respondents, indicating no missing values. Furthermore, apart from the demographic variables, all items have responses ranging from 1 to 7. This aligns with our 7-point Likert scale, where 1 represents 'Strongly Disagree' and 7 represents 'Strongly Agree'.

Items 1-6 in the survey are related to the independent variable “AI-driven personalization”. The mean for item 1 (Per_1) is 5.48, which shows that the respondents were above the median range of 4. This indicates that most of the respondents agreed with the statement. The means of the remaining items are also greater than the median of 4, which also indicates an agreement toward the items by the majority of respondents. Items CX_1 - CX_3 are related to the dependent variable “Customer Experiences”. The items have the following means respectively, 5.38, 5.40 and 5.01, which are values ranging above the median of 4 meaning also that the higher percentage of the answers show an agreement toward the statements.

The standard deviation is centered around 1.5. This means that, on average, the responses deviate from the mean by 1.5 units on the 7-point scale. A standard deviation of 1.5 on a scale of 1 to 7 indicates a considerable spread in the responses. Participants' answers vary widely around the mean.

Furthermore, skewness, which assesses the symmetry of the distribution, should fall between -3 and +3 to be considered acceptable. As indicated in Table 4 below, the skewness for all variables is within this acceptable range. Similarly, kurtosis, which measures the peakedness of the distribution, should be between -10 and +10 for a reasonable level. As shown in Table 4, all kurtosis levels are within the accepted level as well.

Table 4. Descriptive statistics of dependent and independent variables (own).

Items	Valid N	Min	Max	Mean	Std. Deviation	Skewness		Kurtosis	
						Statistic	Std. Err	Statistic	Std. Err
Per_1	365	1	7	5.48	1.433	-0.680	0.128	-0.107	0.255
Per_2	365	1	7	5.08	1.607	-0.602	0.128	-0.279	0.255
Per_3	365	1	7	4.89	1.718	-0.492	0.128	-0.673	0.255
Per_4	365	1	7	5.25	1.468	-0.569	0.128	-0.355	0.255
Per_5	365	1	7	5.18	1.492	-0.413	0.128	-0.586	0.255
Per_6	365	1	7	5.17	1.545	-0.444	0.128	-0.683	0.255
CX_1	365	1	7	5.38	1.466	-0.595	0.128	-0.307	0.255
CX_2	365	1	7	5.40	1.367	-0.541	0.128	-0.298	0.255
CX_3	365	1	7	5.01	1.577	-0.323	0.128	-0.723	0.255

5.3 Correlation Analysis

Correlation coefficients measure the strength of the relationship between variables. The correlation results range from -1 to 1. A value of 0 indicates that the pair of components have little to no impact or relationship with each other, while values of 1 and -1 indicate a perfect connection, either positive or negative, respectively. The closer the result gets toward 1 and -1, the stronger the relationship between the variables. A result between 0 and -1 indicates a negative relationship, where an increase in one variable corresponds to a decrease in the other. Conversely, a result between 0 and 1 indicates a positive relationship, where an increase in one variable corresponds to an increase in the other (Pallant, 2020).

In SPSS, this analysis examines the relationship between pairs of variables, requiring the creation of a representative variable for each component. To achieve this, a new variable is computed by averaging all items within that component. For example, the variable "AI-driven personalization" is calculated as the mean of its six subscales: Per_1, Per_2, Per_3, Per_4, Per_5 and Per_6. The "Customer Experiences" variable is the mean of three subscales CX_1, CX_2 and CX_3. The mean method is used for computation because the study involves Likert scale data. These newly computed variables are then used for both correlation and subsequent regression analysis.

Table 5 shows the correlations between the variables "AI-driven personalization" and "Customer Experiences". According to Asuero et al. (2006), there is a recommended measurement for interpreting the r value in correlation analysis. An r value between 0.90 and 1.00 indicates a very strong correlation, 0.70 to 0.89 signifies a strong correlation, 0.50 to 0.69 represents a medium correlation, 0.30 to 0.49 suggests a weak correlation and 0.10 to 0.29 indicates a minimal correlation. In the study examining the relationship between AI-driven personalization (independent variable) and customer experience (dependent variable), the two-tailed Pearson correlation analysis yielded a correlation coefficient of $r=0.796^{**}$ with a significance level of $p=0.000$. This strong positive correlation indicates that as the level of AI-driven personalization increases, customer experience significantly improves. Furthermore, the correlation is statistically significant with a p-value of 0.000. This means we have strong evidence to suggest that the observed correlation is not due to random chance.

Table 5. Correlation Matrix (own)

		Per	CX
AI-driven personalization	Pearson Correlation	1	0.796**
	Sig. (2-tailed)		0.000
	N	365	365
Customer Experiences	Pearson Correlation	0.796**	1
	Sig. (2-tailed)	0.000	
	N	365	365

Note. ** signifies correlation being statistically significant at 0.01 significance level.

5.4 Quality Criteria

5.4.1 Reliability

Reliability testing is conducted to assess the consistency of responses and estimate the reliability of the survey (George and Mallery, 1999). In this study, we used a Likert scale to gather participants' opinions and their intensity on specific matters. According to Bryman and Bell (2022), research employing the Likert scale may encounter unavoidable errors, as respondents often struggle to relate to the questions, leading to inconsistencies and confusion between concepts. Therefore, reliability testing also evaluates and ensures the consistency of the measurement items within the research (Bryman and Bell, 2022).

Cronbach's Alpha is a widely used method for testing consistency among researchers. This approach divides the criterion into two halves and compares them to check for correlation and consistency. The resulting coefficient ranges from 0 to 1, with 0 indicating no consistency or correlation and 1 indicating perfect consistency. A reliability coefficient above 0.6 is considered desirable for the variables to be valid for analysis (Malhotra, 2010).

As shown in Table 6 below, all variables have a Cronbach's alpha value above 0.6, indicating that these variables are reliable and suitable for analysis.

Table 6. Reliability Testing (own)

Variable	Reliability Statistics	
	Cronbach's Alpha	N of items
AI-driven personalization	0.912	6
Customer Experiences	0.853	3

5.4.2 Validity

The KMO and Bartlett's Test results are crucial for assessing the validity of the data. The Kaiser-Meyer-Olkin (KMO) value, ranging from 0 to 1, indicates the adequacy of the data set. A value closer to 1 signifies higher efficiency, whereas 0 suggests insufficiency.

It is recommended that the KMO index exceeds 0.6 for the data set to be considered adequate (Tabachnick et al., 2013). Additionally, the significance value should not surpass 0.05 in Bartlett's test of sphericity to remain suitable for further analysis (Field, 2013).

As noted earlier, the KMO index should not fall below 0.6 to ensure the dataset's adequacy for analysis. According to Table 7 below, the KMO Measure of Sampling Adequacy is 0.935, which is exceptionally high, indicating that the sample is more than adequate. Values close to 1 suggest that the patterns of correlations are relatively compact and thus reliable for analysis. Moreover, Bartlett's Test of Sphericity has a significance value (Sig.) of 0.000, which is lower than the threshold of 0.05, thereby qualifying the data set for subsequent analysis steps.

Table 7. KMO and Bartlett's Test (own)

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.935
Bartlett's Test of Sphericity	Approx. Chi-Square	2361.652
	df	36
	Sig.	0

5.5 Regression Analysis

The linear regression, as previously mentioned, is used to identify the correlation between variables. Utilizing SPSS software for the linear regression analysis, the findings are displayed in Tables 8 and 9 below.

R-value represents the simple correlation coefficient between the independent variable and the dependent variable. The R-value of 0.796 indicates that there is a strong positive relationship between the independent variable and the dependent variable. In addition, the R-squared value indicates the proportion of variance in the dependent variable that can be explained by the independent variable. An R^2 of 0.633 means that 63.3% of the variance in the dependent variable can be accounted for by the independent variable,

demonstrating that the model has strong explanatory power. In this case, it implies that 63.3% of the variation in customer experience is associated with AI-driven personalization.

The standardized regression coefficient, also known as the Beta coefficient, measures the size and direction of the independent variable's impact on the dependent variable (Moore et al., 2016). The larger the Beta coefficient, the stronger the effect. The Beta coefficient is 0.796, indicating that the independent variable has a significant positive impact on the dependent variable. Here, when the level of AI-driven personalization increases by one standard deviation, the level of customer experience will increase by 0.796 standard deviations.

The t-value is utilized to test the significance of the regression coefficient, with a larger value indicating a more significant impact of the independent variable on the dependent variable. In this case, the t-value is 25.014, signifying a highly significant regression coefficient.

The significance, denoted as Sig., determines whether the model or variable effectively predicts the variance in the dependent variable. Since the Sig. value is 0, which is less than the usual significance level of 0.05, the Beta coefficient is highly significant.

Based on the above interpretation, the simple linear regression results show that the independent variable (AI-driven personalization) has a significant positive impact on the dependent variable (customer experience), and this impact is statistically highly significant.

Table 8. Model Summary (own)

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.796 ^a	0.633	0.632	0.785

- a. Predictors: (Constant), Per
- b. Dependent Variable: CX

Table 9. Linear Regression Coefficients (own)

Coefficients ^a							
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	1.138	0.170	0.796	6.689	0.000	0.803	1.472
Per	0.798	0.032		25.014	0.000	0.735	0.860

a. Dependent Variable: CX

6. Analysis

H1: AI-driven personalization has a positive impact on customer experience in the context of TikTok.

The results in Chapter 5 revealed that H1 was accepted, meaning that TikTok's integrating AI-driven personalization can significantly positively impact customer experience and there is a clear association between the two variables. This finding aligns with the research conducted by Christian et al. (2023) and Gao and Liu (2022), which claimed that AI-driven personalization shapes customer experience through customer journey and improves customer experience by providing personalized offers. It also reflects Daqar and Smoudy's (2019) assert that both AI and AI-powered personalization positively influence the customer experience. Although the research executed by Daqar and Smoudy (2019) highlights AI, AI-driven personalized customer service and customer experience in the banking and telecommunications industry other than social media platforms.

Content personalization on TikTok is driven by algorithms that analyze user interactions, such as viewing habits, engagement levels, and the nature of user interactions with content. The platform's "For You" page is a prime example of this, where the algorithm recommends videos based on past user behavior and preferences, including viewing history, popular content, and user interactions (Klug et al., 2021; Koç, 2023). This

dynamic and iterative process ensures the content remains relevant and engaging, aligning with users' evolving preferences. It reflects that the AI-driven personalization applied by TikTok offers personalized content and recommendations based on customers' preferences and interactions. This is consistent with Kumar et al. (2019) and further evidences their arguments in the scenario of TikTok. Such personalized content is more likely to match customers' interests and resonate with customers. This also saves a lot of time for consumers to search for the content they prefer. By immediately offering content customized for them, customers may feel emotionally comfortable, which shapes customized experiences and leads to positive customer experiences. This is supported by Gujar's (2024) study. As per Bagdare (2015), customers experience significant satisfaction when their emotions are effectively engaged. AI-driven personalized content resonates with customers in emotion and then creates strong emotional connections with customer emotions, this ultimately contributes to the findings of this study.

AI facilitates the creation of personalized marketing messages, which enhances user engagement and satisfaction (Breuer et al., 2021; Gujar, 2024; Wisniach, 2023). TikTok utilizes AI-driven personalization to deliver tailored advertisements and messages that resonate more deeply with customers, thereby increasing the effectiveness of these communications. Likewise, TikTok uses location data to further personalize the customer experience by showing content and advertisements relevant to the user's geographic location. This approach not only enhances the relevance of the content but also improves engagement by aligning with users' local trends and interests (Boeker and Urman, 2022; TikTok, 2024). It reveals that TikTok's ability to deliver content that resonates on a personal level enhances customers' emotional engagement. Customers feel a sense of connection and satisfaction when the content they see aligns with their interests and preferences. This supports the findings of this study and aligns with Tyrväinen et al.'s (2020) claim that creating a comfortable, engaging, enjoyable, and immersive environment, along with a customer journey designed to elicit emotions, enhances the overall customer experience. Moreover, this research corroborates Tyrväinen et al.'s (2020) conclusion that personalization positively impacts both customer experience and loyalty, even though their study focused on the retail context. Thus, by providing personalized content, personalized messages, and location-based recommendations,

TikTok's AI-driven personalization evokes strong emotional responses from customers, customizes the online environment for customers, and thus creates an immersive customer experience, leading to a positive customer experience.

TikTok's recommender system is central to its personalization strategy. By analyzing user interactions and preferences, the algorithm suggests content that aligns with individual tastes, significantly enhancing user engagement and satisfaction (Han et al., 2004; Singh et al., 2023). The concept of flow, where users are completely immersed in the content, is crucial here. TikTok's design aims to sustain this state of flow by balancing recommendation accuracy and serendipity, ensuring that users are consistently engaged without feeling trapped in an "information cocoon" (Zhao and Wagner, 2022; Syrjälä, 2024). Perceived recommendation accuracy evaluates how well users think TikTok's algorithm aligns with their preferences. Customers favor content that matches their preferences due to time constraints, enhancing their flow experience (Zhao and Wagner, 2022; Syrjälä, 2024). Irrelevant and/or uninteresting content results in negative customer experiences. On the contrary, relevant and/or interesting content leads to positive experiences. Furthermore, the effectiveness of TikTok's recommendation system is reflected in the high level of user engagement and the platform's ability to sustain users' attention. Users often find themselves immersed in a continuous flow of content that feels highly relevant and interesting, which is a testament to the power of AI-driven personalization in shaping user experiences.

Moreover, perceived recommendation serendipity gauges how much recommended videos surpass customer expectations, eliciting feelings of surprise and delight that enhance the flow experience. Unexpected recommendations positively impact customer engagement, even when they diverge from customer preferences (Zhao and Wagner, 2022; Syrjälä, 2024). This is strongly connected with the social dimension of customer experience, which involves interactions between users and the influence of social networks (Verhoef et al, 2009). TikTok's AI-driven recommendations facilitate social interactions by connecting users with content that is popular within their social circles. It also encourages user-generated content and interactions, which further enhance the social experience. In addition, perceived effortlessness measures how easy the platform is to use, with reduced cognitive effort indicating an improved user experience (Zhao and

Wagner, 2022; Syrjälä, 2024). TikTok's ability to deliver relevant content and messages reduces the cognitive effort required to find interesting content, revealing that TikTok's AI-driven recommendations make it easy for customers to reach their objectives. This effortless browsing experience enhances customer satisfaction and contributes to a positive overall experience. This is supported by the cognitive aspect of customer experience, which involves the mental processes (APA, 2024) customers go through when interacting with TikTok. The achievement of goals is a key aspect of customer experience, making the assessment of goal attainment essential for evaluating the cognitive component of customer experience (Novak et al., 2003). Hence, TikTok's recommendation system, to a large extent, contributes to the improvement of customer experience.

In summary, with the content, message, and location-based personalization as well as the recommendation system as the main components and the bridge, AI-driven personalization applied by TikTok and customer experience are closely linked together, thus it could explain the finding that AI-driven personalization has a significant positive impact on the customer experience within the context of TikTok. However, how these components of AI-driven personalization separately influence the customer experience cannot be revealed by the findings of this study. Besides, it also cannot explain through which dimension(s) of customer experience, AI-driven personalization has achieved a positive impact.

Due to the acceptance of hypothesis 1, the model is the same as the conceptual model presented in the conceptual framework. The accepted model is shown in the following figure 2:

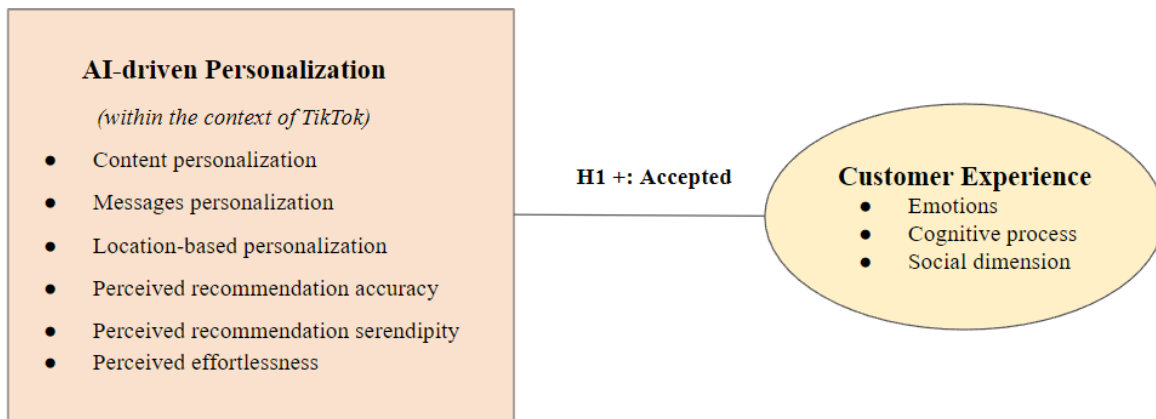


Figure 2. The accepted model of AI-driven personalization's impact on customer experience within the context of TikTok (own).

7. Conclusion

This study set out to examine the impact of artificial intelligence (AI)-driven personalization on customer experience within the context of TikTok. The research hypothesis (H1) proposed that AI-driven personalization has a positive impact on customer experience in the context of TikTok. The findings of empirical tests confirmed this hypothesis, demonstrating a significant positive relationship between AI-driven personalization and customer experience. The results revealed that AI-driven personalization, through mechanisms such as content recommendation, message personalization, and location-based personalization, greatly enhances the user experience on TikTok. These components collectively contribute to a more tailored and engaging experience, aligning closely with individual user preferences and behaviors. Specifically, content recommendation systems powered by AI ensure that users are presented with videos and materials that match their interests, thereby increasing the likelihood of prolonged interaction with the app. Personalized messaging further strengthens the connection between users and the platform by delivering relevant and timely communications. Additionally, location-based personalization enhances relevance by providing contextually appropriate content based on the user's geographical location.

Overall, the integration of AI-driven personalization on TikTok significantly improves customer experience by making interactions more relevant, engaging, and enjoyable. This

positive user experience is crucial for building strong user loyalty and promoting sustained engagement with the platform. The insights gained from this research provide valuable guidance for brands and marketers seeking to leverage AI technologies to enhance customer engagement and satisfaction. Future research could expand on these findings by exploring the long-term effects of AI-driven personalization on customer experience and loyalty and its potential application across various digital platforms.

7.1 Theoretical Contributions

The findings of this study make a certain degree of theoretical contributions to the existing body of literature on artificial intelligence (AI), personalization, and customer experience, particularly within the realm of social media platforms such as TikTok. By empirically examining the effects of AI-driven personalization on customer experiences, this research extends existing knowledge and provides a robust framework for understanding the dynamics of personalized digital marketing.

Firstly, our findings validate the theoretical models that suggest AI-driven personalization plays a crucial role in enhancing customer experiences and empirically confirm that AI-driven personalization has a positive impact on customer experience. Secondly, this research contributes to the theoretical discourse by highlighting the specific mechanisms through which AI-driven personalization enhances user experience. By dissecting the individual elements of personalization - such as content personalization, message personalization, location-based services, perceived recommendation accuracy, perceived recommendation serendipity, and perceived effortlessness - this study provides a granular understanding of how each component influences customer engagement. This detailed exploration offers a more nuanced perspective on the multifaceted nature of AI-driven personalization, expanding on previous studies that have primarily focused on broader trends. Moreover, the study's focus on TikTok, a rapidly growing social media platform, adds a contemporary dimension to the literature on AI and digital marketing. By situating the research within this context, the study addresses the unique challenges and opportunities presented by social media platforms that rely heavily on user-generated content and interactive features. This contextual specificity enhances the applicability of

the findings to other similar platforms, thereby broadening the scope of AI-driven personalization research.

7.2 Managerial Implications

The results of this study underscore the significant potential of AI-driven personalization to enhance customer experiences on TikTok. For marketers and brand managers, this indicates a strategic opportunity to leverage AI technologies to foster deeper customer engagement and satisfaction. By integrating AI technologies that tailor content and messages to individual user preferences, managers could create more engaging and relevant user interactions. This personalization may not only increase customer satisfaction but also foster greater loyalty and retention. Therefore, brands should invest in advanced algorithms and machine learning techniques that can accurately analyze user behavior and preferences to deliver personalized content and recommendations.

In addition, the study highlights the importance of specific personalization elements such as content and message personalization, location-based personalization, and recommendation systems. Managers should prioritize these components to maximize their impact. For instance, content and message personalization could make user interactions more meaningful and engaging, while location-based services may provide contextually relevant offers and information. Effective recommendation systems that deliver perceived accuracy and serendipity could enhance user satisfaction by suggesting relevant and unexpected content that users may find delightful. This multi-faceted approach to personalization ensures a holistic improvement of the customer experience.

7.3 Limitations and Directions for Further Research

Limitations are inherent in quantitative research, and this study is no exception. The data for this study was collected through an online survey questionnaire, forming the basis for subsequent analyses and results; however, this method, while effective, does have certain constraints. One significant limitation is the generalizability of the findings. The survey targeted TikTok users regardless of their current locations, but due to the sample size of 365 respondents, it is difficult to extend the results globally. In addition, the majority of participants were between the ages of 18 to 34, which may not fully represent the

experiences and perceptions of other age groups. This age bias could potentially skew the results, as younger users may have different interactions with AI-driven personalization compared to older users.

Another noteworthy limitation of this study is the potential sampling bias arising from the data collection method. Utilizing Google Forms and Wenjuanxing to gather questionnaire responses may not yield a representative sample of the overall TikTok user base. This issue is particularly pronounced given the significant differences between the Chinese version of TikTok (Douyin) and its international counterpart. These platforms attract distinct demographics, and the cultural and regulatory differences between China and Western countries can lead to varied user experiences and perceptions. As a result, the data might disproportionately reflect the experiences of certain user groups, leading to skewed results. This limitation highlights the need for careful consideration of sampling methods and demographic representation in future research to ensure a more balanced and accurate portrayal of user experiences across different regions.

Moreover, the reliance on closed-end questions in the survey limits the depth of insights that could be gathered. While quantitative data provides a broad understanding, it may not capture the nuanced opinions and experiences of users regarding AI-driven personalization on TikTok. A mixed-method approach, incorporating qualitative elements such as interviews or open-ended questions, could provide richer, more detailed data and a better understanding of customer experiences.

Ethical implications and privacy concerns also pose significant challenges in this study. The use of AI to personalize content raises questions about data privacy and the ethical implications of user information. AI-driven personalization relies heavily on the collection and analysis of vast amounts of user data, including browsing habits, preferences, and interaction patterns. This extensive data collection can lead to potential breaches of user privacy, especially if data is not adequately protected or if users are not fully informed about how their information is being used. Additionally, the manipulation of user data to drive engagement may raise concerns about the transparency and fairness of these algorithms. Therefore, when researching this topic, it is necessary to consider these factors that have the potential to negatively impact customer experience.

In summary, future studies could broaden the demographic scope, increase sample sizes from different backgrounds, and employ mixed-method approaches to capture a more diverse range of experiences and insights. At the same time, the impact of moral and privacy constraints should be comprehensively considered. By overcoming these limitations, subsequent research can build on the findings to offer more holistic pictures and more generalizable conclusions about this studied topic.

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Appendix I - Questionnaire I



Section 1 of 3

Does Artificial Intelligence (AI) - driven personalization impact your experiences while using TikTok?

B *I* U  

We are two students from the Marketing Program at Uppsala University. We are currently writing our Master thesis about the impact of AI-driven personalization on customer experience in the context of TikTok.

We would appreciate it very much if you could take a few minutes of your time to answer our questionnaire. Your responses will be kept anonymous and only used for the purpose of this thesis.

If you have any questions or comments, please do not hesitate to contact us:

Caiyan Liu: caiyan.liu.4367@student.uu.se

Zifan Zhang: zhang.zifan.3951@student.uu.se

Good to know:

AI-driven personalization refers to the use of advanced algorithms and machine learning techniques to tailor content, product recommendations, and user experiences to individual preferences".

Customer experience encompasses the collective sentiment of customers towards a particular brand, formed by their interactions across various touchpoints.

TikTok incorporates AI-driven features across fundamental aspects of social media, encompassing information, content consumption, creation, and networking. The platform offers a personalized "For You" feed, curated algorithmically for individual users according to their previous engagement initiatives and preferences regarding presented videos, such as viewing duration, likes, comments, shares, and follows.

Do you use TikTok? *

- Yes
- No

After section 1 Continue to next section

Section 2 of 3

Section title (optional)



Description (optional)

What's your age? *

- <18
- 18 - 24

25 - 34

35 - 44

45 - 54

>= 55

What is your gender? *

Male

Female

Other

Prefer not to say

What is your education level? *

High school

Bachelor degree

Master degree

Doctor degree

Other

How long do you use TikTok per week? *

- Less than 5 hours
- 5 to 10 hours
- 11 to 20 hours
- 21 to 30 hours
- 31 to 40 hours
- More than 40 hours

After section 2 Continue to next section

Section 3 of 3

AI-driven personalization and customer experience



Good to know:

Message personalization involves customizing marketing messages for individual customers, taking into account their unique needs, interests, behaviours, and preferences.

Marketing messaging represents how a brand communicates to its customers and highlights the value of its products. "Messages" refer to not only the actual words and phrases used by a brand in advertising but also feelings and emotions associated with what they say.

...

1. It is important to me that I am offered AI-driven personalized content based on my preferences while using TikTok. *

	1	2	3	4	5	6	7	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

2. It is important to me that I am offered AI-driven personalized marketing messages to meet my specific needs while using TikTok. *

	1	2	3	4	5	6	7	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

3. It is important to me that I am offered AI-driven personalized content based on my location while using TikTok. *

	1	2	3	4	5	6	7	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

4. It is important to me that I am offered AI-driven personalized recommendations that are accurately aligned with my preferences while using TikTok. *

	1	2	3	4	5	6	7	
--	---	---	---	---	---	---	---	--

5. It is important to me that I am offered AI-driven personalized unexpected recommendations * that makes me surprised and delighted while using TikTok.

	1	2	3	4	5	6	7	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

6. It is important to me that I am offered personalized recommendations without extra effort * while using TikTok.

	1	2	3	4	5	6	7	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strong Agree

7. It is important to me that I am able to get positive emotions while using TikTok, such as * feeling comfortable, interesting, enjoyable or immersive.

	1	2	3	4	5	6	7	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

8. It is important to me that I am able to obtain the content that meets my expectations while * using TikTok.

	1	2	3	4	5	6	7	
--	---	---	---	---	---	---	---	--

9. It is important to me that I am able to interact with others while using TikTok. *

	1	2	3	4	5	6	7	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

Appendix II - Questionnaire II

Does Artificial Intelligence (AI)-driven personalization impact your experiences while using TikTok?

我们是来自乌普萨拉大学市场营销项目的两名学生。目前正在撰写关于TikTok背景下人工智能驱动的个性化对客户体验影响的论文。

您的回复将保持匿名，并仅供本论文的研究使用。

相关背景介绍：

人工智能驱动的个性化（AI-driven personalization）是指使用先进的算法和机器学习技术来根据个人喜好定制内容、产品推荐和用户体验。

客户体验（Customer experience）包括客户对特定品牌的整体情感，由他们在各个接触点的互动所形成。

TikTok 在社交媒体方面融入了基于人工智能驱动的功能，涵盖了信息、内容消费、创作和社交等多个方面。该平台提供了个性化的“为你推荐”内容流，根据用户先前的互动行为和对所呈现视频的偏好进行算法策划（例如观看时长、点赞、评论、分享和关注等）。

We are two students from the Marketing Program at Uppsala University. We are currently writing our Master thesis about the impact of AI-driven personalization on customer experience in the context of TikTok.

We would appreciate it very much if you could take a few minutes of your time to answer our questionnaire. Your responses will be kept anonymous and only used for the purpose of this thesis.

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Customer experience encompasses the collective sentiment of customers towards a particular brand, formed by their interactions across various touchpoints.

TikTok incorporates AI-driven features across fundamental aspects of social media, encompassing information, content consumption, creation, and networking. The platform offers a personalized "For You" feed, curated algorithmically for individual users according to their previous engagement initiatives and preferences regarding presented videos, such as viewing duration, likes, comments, shares, and follows.

*1. 您是否使用过TikTok(抖音)? Do you use TikTok?

是 Yes

否 No

*2. 您的年龄段? What's your age?

<18

18 – 24

25 – 34

35 – 44

45 – 54

≥ 55

***3. 您的性别? What is your gender?**

男 Male

女 Female

其它 Other

我不想说 Prefer not to say

***4. 您的受教育程度? What is your education level?**

高中 High school

本科 Bachelor degree

硕士 Master degree

博士 Doctor degree

其它 Other

***5. 您每周的TikTok(抖音)使用时长? How long do you use TikTok per week?**

< 5 小时 hours

5 ~ 10 小时 hours

11 ~ 20 小时 hours

21 ~ 30 小时 hours

31 ~ 40 小时 hours

> 40 小时 hours

人工智能驱动的个性化 & 客户体验 (AI-driven personalization & customer experience)

Good to know:

Message personalization involves customizing marketing messages for individual customers, taking into account their unique needs, interests, behaviours, and preferences.

Marketing messaging represents how a brand communicates to its customers and highlights the value of its products. “Messages” refer to not only the actual words and phrases used by a brand in advertising but also feelings and emotions associated with what they say.

消息个性化涉及为个人客户定制营销消息，考虑到他们的独特需求、兴趣、行为和偏好。

营销信息代表了品牌如何与其客户沟通并强调其产品的价值。“信息”不仅指品牌在广告中使用的实际单词和短语，还指与他们所说的内容相关的感受和情绪。

- *6. 对我来说重要的是，我可以在使用TikTok时根据自己的喜好获得人工智能驱动的个性化内容。

It is important to me that I am offered AI-driven personalized content based on my preferences while using TikTok.

很不同意 Strongly Disagree

很同意 Strongly Agree

①

②

③

④

⑤

⑥

⑦

- *7. 对我来说重要的是，我可以在使用TikTok时获得人工智能驱动的个性化营销信息，以满足我的特定需求。

It is important to me that I am offered AI-driven personalized marketing messages to meet my specific needs while using TikTok.

很不同意 Strongly Disagree

很同意 Strongly Agree

①

②

③

④

⑤

⑥

⑦

*8. 对我来说重要的是，我可以在使用TikTok时根据我的定位获得人工智能驱动的个性化内容。

It is important to me that I am offered AI-driven personalized content based on my location while using TikTok.

很不同意 Strongly Disagree

很同意 Strongly Agree



*9. 对我来说重要的是，我在使用TikTok时获得了人工智能驱动的个性化推荐，这些推荐准确地符合我的偏好。

It is important to me that I am offered AI-driven personalized recommendations that are accurately aligned with my preferences while using TikTok.

很不同意 Strongly Disagree

很同意 Strongly Agree



*10. 对我来说重要的是，由人工智能驱动的个性化带来的意想不到的推荐让我在使用TikTok时感到惊讶和高兴。

It is important to me that I am offered AI-driven personalized unexpected recommendations that makes me surprised and delighted while using TikTok.

很不同意 Strongly Disagree

很同意 Strongly Agree



*11. 对我来说重要的是，在使用TikTok时，我无需付出额外努力即可获得个性化推荐。

It is important to me that I am offered personalized recommendations without extra effort while using TikTok.

很不同意 Strongly Disagree

很同意 Strongly Agree

①

②

③

④

⑤

⑥

⑦

*12. 对我来说重要的是，在使用TikTok时，我能够获得积极的情绪，例如感到舒适、有趣、愉快或身临其境。

It is important to me that I am able to get positive emotions while using TikTok, such as feeling comfortable, interesting, enjoyable or immersive.

很不同意 Strongly Disagree

很同意 Strongly Agree

①

②

③

④

⑤

⑥

⑦

*13. 对我来说重要的是，在使用TikTok时能够获得我期望之中的内容。

It is important to me that I am able to obtain the content that meets my expectations while using TikTok.

很不同意 Strongly Disagree

很同意 Strongly Agree

①

②

③

④

⑤

⑥

⑦

*14. 对我来说重要的是，在使用TikTok时能够与他人互动。

It is important to me that I am able to interact with others while using TikTok.

很不同意 Strongly Disagree

很同意 Strongly Agree

①

②

③

④

⑤

⑥

⑦