Customer Satisfaction Drivers with Digital Therapeutic Platform Experiences: The Mediating Effect of Perceived Hedonic Value

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Abstract

Underpinned by expectancy disconfirmation theory and perceived value theory, this paper explores customer satisfaction drivers towards digital therapeutic platforms (i.e., reliability, product diversity, and sales promotion). Besides, this paper examines the role of perceived hedonic value in three drivers–customer satisfaction relationships. Employing online survey, 416 Saudi customers' responses were collected. ADANCO-PLS findings indicated that reliability, product diversity, and sales promotion directly affect perceived hedonic value. Further, perceived hedonic value was partially mediated in the relationships between customer satisfaction towards therapeutic service-related digital platforms and its three drivers. This paper contributes to the existing literature on digital platforms by providing evidence on how digital platforms that incorporate pleasure, and utilitarian dimensions positively influence customers' experiences in digital therapeutic services. Our findings have valuable implications for platform providers who want to maximize customer involvement and satisfaction.

Keywords: customer satisfaction, digital platforms, therapeutic services, perceived hedonic value, sales promotion

Introduction

The wellness delivery landscape of Saudi Arabia is altered rapidly due to the increasing digital media usage for therapeutic purposes (Hassounah et al., 2020). These platforms have become more attractive to Saudi citizens and expatriates as part of a broader transformation process in accordance with Saudi Vision 2030 (AlNemer, 2024), improving access, care quality, and therapeutic system efficiency through digitalization. The increasing dependence on digital therapeutic platforms, from mental-health counseling and physical therapy sessions to holistic wellness schemes, also represents a significant shift in how care is provided and accessed (Rostami et al., 2025). This change caters to the increased need for personalization in more convenient environments (Bhuiyan, 2024) and solves access problems for conventional therapeutic delivery (Lorscheider et al., 2021).

Previous discussion on customer satisfaction has been extensively studied in digital service domains and e-commerce contexts (Al-Omoush et al., 2022; Mofokeng, 2021; Wu & Dong, 2023; Yang et al., 2024). However, few studies have been conducted on digital therapeutic services, showing different drivers of customer satisfaction like perceived ease of use (Carrera et al., 2023) and trust in digital platforms (Soleimani, 2022). This paper seeks to fill this crucial gap to explore the impact of particular drivers (i.e., reliability, product diversity, and sales promotion) on customer satisfaction toward digital therapeutic service adoption in the Saudi context. Second, this paper poses perceived hedonic value as a mediating effect. Since emotional benefits and experiential pleasure

obtained from platform usage are instrumental in forming customer perceptions and satisfaction effects (Yum & Kim, 2024).

Our theoretical foundation lies in two theories, namely expectancy disconfirmation theory (EDT) and perceived value theory (PVT). According to EDT, the difference between pre-service expectations and actual service performance is a key determinant of customer satisfaction (Komba & Komba, 2024). Satisfaction occurs when services rendered meet or exceed expectations, and dissatisfaction occurs when not (Mofokeng, 2021). Hence, this is critical when digital services are therapeutic, highly reliable, and need professional attention (Rostami et al., 2025). EDT affords a valuable perspective for mapping what influences customer satisfaction toward using therapeutic service-related digital platforms (Schiebler et al., 2025). For example, if digital platforms continually offer reliable services and several therapy options, customers are more likely to feel that their expectations are fulfilled and exceeded (Kitsios et al., 2023). In contrast, PVT provides a more nuanced perspective in its focus on customers between perceived benefits of service consumption and its associated costs (Hu et al., 2025). This theory is the notion of hedonic value, encapsulating emotional pleasure and experiential richness that customers experience during service use (Zhang et al., 2024).

In therapeutic services, such aspects could resemble user-friendly interfaces, compelling content, aesthetically pleasant spaces, or compassionate connections with therapists (Soleimani, 2022). Employing PVT, this paper includes the more subjective and emotional aspects of customer satisfaction, which are increasingly significant in digital wellness systems. Based on this theoretical groundwork, this paper sets three main goals. The first is to empirically evaluate customer satisfaction drivers of customer satisfaction towards therapeutic digital platforms in the Saudi context. In particular, the existing paper examines the impact of platform reliability (i.e., performance/uptime and technological reliability), product diversity (i.e., therapeutic service diversity and treatment type), and sales promotion (i.e., discount features, special deals, and reward tools dimensions) on customer satisfaction. These were chosen because they are relevant to digital platforms' pursuit of competitive positions in dynamic environments.

Second, this paper examines the mediating role of perceived hedonic value. Customers might have digital therapeutic service platforms upon expectation value and emotional reward pleasure (Kemppainen & Paananen, 2024). Via quantifying such a mediating effect, this paper provides a deeper understanding of psychological and emotional processes that contribute to customer satisfaction. Third, this paper delivers a holistic framework to understand how integrating functional and emotional values shapes satisfaction with therapeutic digital platforms. This dual emphasis reflects an integrated view that considers customer experiences' utilitarian and hedonic aspects. This approach is relevant and valuable in the Saudi context, where digital transformation changes are changing how digital therapeutic services are delivered and customer expectations (Zhang et al., 2024).

As KSA progresses with Vision 2030 objectives, there is an emphasis on therapeutic service digitalization with a focus on improving access to therapeutic services and innovation of care delivery models (Mani & Goniewicz, 2024). Digital therapeutic service platforms are playing a pivotal role in these endeavors (Asif & Fazel, 2024) as digital platforms have the potential to provide scalable solutions to promote mental health among populations, chronic disease management, and overall wellness (Kitsios et al., 2023). For these platforms to realize their full potential, it is essential to identify what determines customer satisfaction and continued use. The existing paper fills this research gap and evidence-based knowledge. This paper adds to the limited literature studying digital therapeutic services in emerging economies. The existing paper also has practical implications for digital platform developers and therapeutic practitioners who wish to enhance service design, cus-

tomer experience, and promotional strategies. For policymakers, this paper delivers evidence-based guidelines for maximizing digital therapeutic intervention success.

Literature review and hypothesis development

Underpinning theories

This paper is rooted in EDT and PVT theories as theoretical foundations. According to EDT, customer satisfaction is created by the gap between customer expectations and a product or service's performance (Hallencreutz & Parmler, 2021). This theory holds that when customers perceive that their expectations have been exceeded, positive disconfirmation results in satisfaction (Komba & Komba, 2024), whereas negative disconfirmation arises when the performance of a product or service does not measure up to expectations, leading to dissatisfaction (Schiebler et al., 2025). For service-product platforms that are related to therapies, EDT proposes that customers have expectations about reliability, product diversity, and sales promotion when they start service processes (Komba & Komba, 2024). Their satisfaction will increase if expectations about these attributes are surpassed or confirmed (Hallencreutz & Parmler, 2021). This theoretical background allows customers to evaluate digital platforms' performance according to their expectations and how these are met or exceeded, increasing customer satisfaction. In contrast, PVT involves the trade-off between perceived benefits and perceived service sacrifices (Hu et al., 2025). Customers judge their satisfaction according to service benefits is more significant than the costs (i.e., monetary, time, and effort) of obtaining it (Kim et al., 2023). For therapeutic services, perceived value is influenced by the functional and emotional aspects.

Product diversity and reliability might be seen as functional benefits that deliver actual value to customers (Mehrolia et al., 2021), while sales promotion can increase perceived value by lowering prices or offering extra inducements (Bondarenko & Vyshnivska, 2023). Perceived hedonic value, which is enjoyment or emotional satisfaction obtained from services, is also an essential factor that affects customer evaluation (Calvo-Porral & Otero-Prada, 2021). Therefore, PVT indicates that customer satisfaction depends on utilitarian benefits and hedonic values that customers get out of platform usage (Akdim et al., 2022). By integrating EDT and PVT, this paper investigates the effects of reliability, product diversity, and sales promotion on customer satisfaction on therapeutic service-related digital platforms. EDT offers a structure to evaluate the degree to which attributes have performed about customers' expectations (Kitsios et al., 2023), while PVT draws attention to the expected trade-off between functional and hedonic benefits in forming satisfaction (Akdim et al., 2022). The research model (see Figure 1) suggests that perceived hedonic value will mediate the effects of three drivers (i.e., reliability, product diversity, and sales promotion) on customer satisfaction.

Customer satisfaction with digital platform experiences

Customer satisfaction with digital services is increasingly vital as the nation is stepping up its digitalization efforts across wellness tourism (Hadjielias et al., 2022; Shoukat et al., 2025). With the increasing popularity of digital platforms for therapeutic service delivery, keeping customers satisfied is key to ongoing care management and retention (Kitsios et al., 2023). In this vein, platform reliability, ease of use, product range, and service availability are key drivers of customer experiences (Felix & Rembulan, 2023). With a unique cultural background in KSA, consisting of citizens and expatriates who use social media (Yusuf et al., 2021), it is essential to understand key factors contributing to customer satisfaction in wishing to offer services that satisfy expectation levels (Hadjielias et al., 2022). With the Saudi government focusing on Vision 2030 and technology innovation, digital health platforms should be agile to keep pace with customers' quickly changing needs (Zaki et al., 2025). Customer satisfaction can be defined as the level to which customer needs have

been met or exceeded by digital platforms in terms of performance or experience they expected (Ruiz-Alba et al., 2022). Thus, it is essential to understand how functional and emotional aspects of digital platforms are interdependent and work to enhance customer experience on these platforms (Ramasundaram et al., 2023).
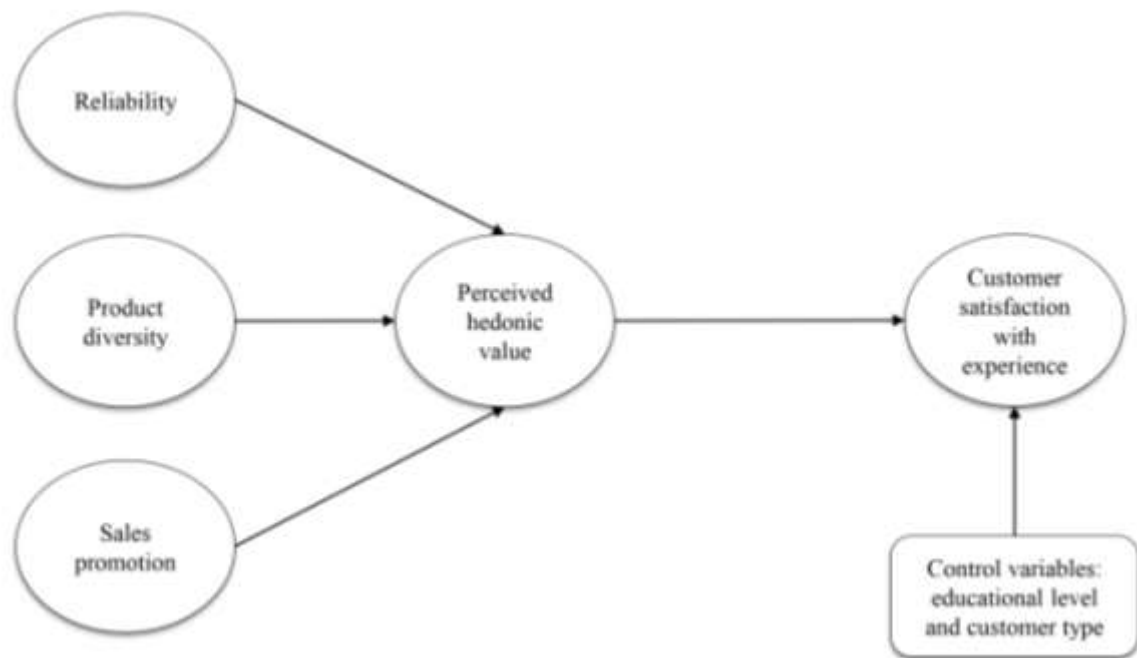

Figure 1. Research model
Source: Author preparation

Perceived hedonic value customer satisfaction with experience

Perceived hedonic value is the emotional and pleasure-related dimension of services, which leads to enjoying and being intrinsically satisfied with services (Ozturk et al., 2023). In digital therapeutic platforms, this value relates to how easy platforms are to use, how entertaining taking part in them is, and how much customers feel emotionally connected to interactions with them. Perceived hedonic value is commonly opposed to utilitarian value, which refers to functional and task-oriented dimensions of services (Barrett et al., 2024). However, utilitarian value pertains to platform usability, productivity, and reliability, and perceived hedonic value refers to more subjective, emotional, and experiential forces that produce customer experiences (Ozturk et al., 2023). EDT implies satisfaction derives from customer expectations being confirmed or not confirmed (Komba & Komba, 2024). In digital therapeutic services, customers may develop high reliability, effectiveness, and diversity expectations (Kitsios et al., 2023); while emotions they get from platform usage might significantly affect customer satisfaction (Hadjielias et al., 2022). When digital therapeutic services are unexpectedly emotionally satisfying, customer satisfaction is further facilitated (Ruiz-Alba et al., 2022).

Further, PVT explains the benefits and costs that customers exchange for a given product or service (Akdim et al., 2022) and incorporates hedonic value by stating that the enjoyment produced by such benefits is as critical as utilitarian elements (Hu et al., 2025). PVT indicates that customers are more likely to perceive higher values if platforms can provide utilitarian benefits (i.e., usable

therapies) and hedonic benefits (i.e., emotional enjoyment or personal pleasure). Nonetheless, hedonic value has not been studied within EDT and PVT in digital therapeutic service settings. Prior studies in digital services have concentrated on functional issues, such as service reliability (Meng et al., 2022) and technical performance (Kim & Chung, 2024) with relatively lower attention to customer interactions' affective and experiential aspects. Although several studies have examined hedonic value in the e-commerce industry (Huang et al., 2024; Kumar & Ayodeji, 2021), its influence on customer satisfaction in therapeutic services within the Saudi context remains marginally examined. Thus, this gap in understanding how hedonic value influences customer satisfaction toward digital therapeutic platforms. Given the increasing importance of the emotional and psychological dimensions of customer interactions with wellness services, this paper assumes that:

H1. Perceived hedonic value positively affects customer satisfaction with experience.

Reliability, product diversity, and sales promotion
Reliability is service uniformity and consistency that operates such that its customers have that it will do as and when required (Krupenev et al., 2023). Hence, this includes metrics for availability, response times, and credibility of therapeutic services. Reliability is one of the main factors as a functional satisfaction driver, while emotional satisfaction rests on it in therapeutic service-related digital platforms (Shah et al., 2021). As such, high perceived hedonic value in therapeutic digital platform experiences is assumed to be influenced by reliability. Underpinned by EDT, reliability directly affects customer satisfaction through confirming or disconfirming customer expectations (Hien et al., 2024). Digital therapeutic platforms can provide promised service types (Tong et al., 2022), which help customer satisfaction be fulfilled in terms of service and functional quality (Lavuri et al., 2022). Inversely, when customer expectations are fulfilled, they can feel positive emotions that increase overall perceptions of platforms' hedonic value (Yum & Kim, 2024). Since customers look for practical solutions and services that will make them a good time and create a high emotional value (Hien et al., 2024), this is critical in this context.

Further, PVT holds that digital service customers evaluate services based on perceived benefit-to-cost ratios and emotional and experiential components (Hu et al., 2025). Reliability increases perceived hedonic values by helping customers feel safe and secure (Lavuri et al., 2022). When platforms always work as customers should, they can interact with services without concern. This emotion satisfaction is a vital part of the pursuit of hedonic value (Yum & Kim, 2024). For example, it is more comfortable for customers to use trustworthy platforms, and their experiences and emotional fulfillment are improved (Tong et al., 2022). Yet, the influence of reliability on perceived hedonic value in therapeutic services has been under-researched in previous studies (Tsiotsou & Boukis, 2022). Recent studies have investigated the pivotal role of reliability on functional satisfaction (Elias & Lubua, 2024; Paulisso et al., 2021), but emotional and pleasure-driven hedonic values are under-explored. Little research has been conducted in digital service contexts, focusing on customer satisfaction (Bankuoru Egala et al., 2021; Demirel, 2022) without addressing unique emotional components and therapeutic service-related value-creating mechanisms. Therefore, this paper proposes that:

H2. Reliability positively affects perceived hedonic value.

Product diversity, which is the extent of variety and the number of services or offerings, is one of the crucial drivers of customer satisfaction in digital platforms (Ding et al., 2023). Regarding

therapeutic service-oriented digital platforms, product diversity corresponds to therapeutic service diversity platforms offers (Chaulagain, 2024), including alternative treatment methods (e.g., mental health counseling, physical therapy, wellness), session types (e.g., virtual consultations, self-guided programs, live workshops), and service versions (e.g., scheduled or on-demand offline). As such, we assume that product diversity may positively affect perceived hedonic value toward digital therapeutic services. In other words, the more diverse offerings those emotional and experiential satisfaction customers obtain when they engage with digital therapeutic platforms (Kitsios et al., 2023). As represented by PVT, perceived hedonic value highlights that the effective use of products is of practical value, and much appreciation is generated by emotional experiences (Ponsignon et al., 2024).

For therapeutic services, hedonic value may also be a result that comes from taking pleasure in using the range of available services and having choice freedom. This broad range of options gives customers a sense of empowerment, which makes them more satisfied, and attends to a larger spectrum of emotional or personal wellness wants (Chan, 2024). Yet, product diversity's impact on perceived hedonic value has been ignored in the existing literature in therapeutic service settings (Chaulagain, 2024). Existing research on product diversity in e-commerce or digital services has been broad (Ding et al., 2023; Dong et al., 2025) and has not focused on the particular emotional dimensions of therapeutic services. There is little research about the effects of product diversity on other domains like customer decision-making (Dong et al., 2024) and digital personalization (McKee et al., 2024). However, the direct linkage between product diversity and perceived hedonic value in the digital therapeutic service context is less explored. Therefore, this paper proposes that:

H3. Product diversity positively affects perceived hedonic value.

Sales promotion refers to short-term discounts or offers to encourage quick responses for purchasing (Mandolfo et al., 2022). It is a key driver in creating customer experiences of digital service platforms (Kadiri, 2024). Within the digital service market, sales promotion offers may include discounts, loyalty programs, and time-limited promotions to increase services' perceived appeal (Liang & Lin, 2023). In this paper, we assume that sales promotion may affect service performance aspects of digital platform usage and enhance the emotional or pleasure aspect of service experiences that underlies perceived hedonic value. In digital therapeutic platforms, this can include customer feelings of relaxation, pleasure, or well-being based on their interaction (e.g., nature of content interaction, perceived quality of therapeutic interaction, or overall experience) (Ruiz-Alba et al., 2022). For example, coupons or promotions may enhance experience values and cause customers to be more rewarded and emotionally satisfied.

Although prior research has noted that sales promotion has a positive effect on customer satisfaction and loyalty to digital services (Cahaya et al., 2023; Kaveh et al., 2021; Urošević & Dukić, 2024), little research is known about this relationship between customer satisfaction toward therapeutic services and its drivers via mediating roles (Suhail & Srinivasulu, 2021). Most conceptualizations in the existing literature have limited their interest to the functional effects of sales promotion on either customer acquisition or service usage rates (e.g., the utilitarian value of getting a discount). Little research was studied about the extent to which such promotions can augment emotional and hedonic features of customer experiences in digital therapeutic settings (Sestino et al., 2023). From EDT and PVT standpoints, this gap is striking. EDT pointed out that satisfaction is a match or absence of a gap between customer performance and expectations (Eren, 2021).

Sales promotion may have effects on customer expectations by increasing perceived values of services and increasing service satisfaction (Liang & Lin, 2023). Yet, previous literature has not

investigated how sales promotion as external stimuli affect emotional satisfaction or hedonic experiences. PVT also pointed out that perceived value is a tradeoff between functional and hedonic benefits (Ruiz-Alba et al., 2022), yet how hedonic dimensions of service use vary with promotional activities is scarcely studied in the digital therapeutic platform context (Sestino et al., 2023). Combining EDT and PVT, this paper will provide a better understanding of promotional activities in satisfaction emotions and pleasure of digital therapeutic service experiences. Therefore, this paper presumes that:

H4. Sales promotion positively affects perceived hedonic value.

Rooted in EDT, customer satisfaction is the level to which service performance does or does not exceed customer expectations (Eren, 2021). EDT is more concerned with platform performance functionality (e.g., platform reliability and quality) (Komba & Komba, 2024). Although it provides critical knowledge of customer satisfaction drivers, emotion and experience-related needs are highly relevant for digital services not covered by EDT. PVT fills this gap, which enhances traditional satisfaction models by including emotional and hedonic aspects of customer experiences (Ponsignon et al., 2024). Hedonic value is the pleasure customers feel while using services, which can be related (e.g., ease of use, aesthetics, or emotional value) (Yuan et al., 2022). For digital therapeutic platforms, the factors contributing to customers' usage may include platform reliability and emotional pleasure and satisfaction during actual experiences (Ruiz-Alba et al., 2022). Hence, this affective factor may be a mediator effect between customer satisfaction and its drivers.

Previous literature has mainly investigated the direct linkages among platform reliability, product diversity, sales promotion, and customer satisfaction (Azhari et al., 2023; Kaveh et al., 2021), underestimating the indirect effect of perceived hedonic value. For example, reliability has been associated with increased customer satisfaction through expectations (Balinado et al., 2021). However, limited efforts have been made to investigate how customer enjoyment or pleasure experienced in using digital therapeutic services may impact their satisfaction (Kemppainen & Paananen, 2024; Kitsios et al., 2023). Moreover, previous studies concerning product diversity and sales promotion pay little attention to their indirect influences on customer satisfaction through the mediation effect of hedonic value (Chan, 2024; Madhu et al., 2023). Accordingly, perceived hedonic value serves as a mediating mechanism that will helps this paper to connect the functional and emotional components of customer satisfaction grounded in EDT and PVT. Thus, this provides a broader perspective of customer experiences in digital therapeutic platforms. Hence, this paper posits that:

H5. Perceived hedonic value mediates the nexus between customer satisfaction with experience and a) reliability, b) product diversity, and c) sales promotion.

Materials and Methods
Research rationale and instruments
Our research rationale is to manage the increasing significance of therapeutic intervention delivery via digital platforms in the Saudi context. Given the rapid evolution of digital technology and online therapeutic service provider accumulation (Asif & Fazel, 2024), customer satisfaction with online wellness services has become critical. Digital therapeutic service platforms are becoming a key part of the Saudi healthcare ecosystem (Alghamdi et al., 2021) as the government promotes digital transformation within the healthcare industry as part of Vision 2030 (Mani & Goniewicz, 2024). The importance of driving customer satisfaction is justified, which was little studied

when placed into context with digital therapeutic services (Kitsios et al., 2023; Mainardes & Freitas, 2023). Our sampling frame was chosen as Saudi citizen and expatriate representatives, who are the major individuals who use digital therapeutic service platforms. This finding recognizes the diverse nature of the Saudi market, with citizens and expatriates possibly having diverse cultural and economic backgrounds (Dousin & Sulong, 2022).

Our research design adopts a structured quantitative approach to investigate customer satisfaction drivers toward therapeutic service-related digital platforms in the Saudi context. Based on the cross-sectional design, this paper examines the links among reliability, range of products, sales promotion, and perceived hedonic value as mediating customer satisfaction. Respondents were purposive sampling among those who had experience using digital platforms related to therapeutic services. To verify content validity and instrument reliability, pretest and reverse-translated questionnaires were used, which minimized potential language and interpretation biases. To determine content validity, a small sample of 62 potential customers participated in the pretest via Google Form before undertaking the final questionnaire. The pretest's purpose was to test item clarity, relevance, and appropriateness in construct measurement. Results indicated that sales promotion item ambiguities (i.e., SPR2 and SPR3) should improve clarity and consistency. Hence, respondent feedback was taken into consideration. Before performing pretest, the reverse-translation approach was employed to secure linguistic validity and take into account respondents from different cultures and language groups.

The questionnaire was developed in English and translated into Arabic, Urdu, and Bengalese by three bilingual experts and independently back-translated into English by three bilingual experts. They expressed the terminology simplicity used in each item and edited some items that had spelling errors (e.g., PRD4, PHV3, CSE1, RLB4, and RLB5). Through pretest and reverse translation findings, instrument measurement increased its measures' validity, decreasing the chance of misinterpretation and the accurate grasp of concepts about main variables (Lim, 2024). All measurement items (see Appendix A) were adapted from relevant studies in the social commerce literature. To gauge sales promotion, three items were modified from Sohn and Kim (2020). Six items were employed to assess reliability, while product diversity was measured using four items derived from Choi and Kim (2018). Three items were employed to reckon perceived hedonic value created from Wang et al. (2019).

To measure customer satisfaction with experience, three items were adapted and modified from Qin et al. (2021). A seven-point Likert scale was employed as a suitable option to answer the questionnaire items, with its indicators ranging from strongly disagree = 1 to strongly agree = 7. We included customer type and educational level as control variables in our model and examined the impact of these variables on customer satisfaction with experiences. Customer type (citizen vs. expatriate) may shape emotional expectations and preferences for therapeutic service platforms, which could relate to differences in customer satisfaction (Helkkula et al., 2023). Educational level, as a measure of cognitive capability, could also affect customer experiences toward digital service platforms (Zhao & Wang, 2021).

Data collection process

Data was gathered in the present study using a Google Form survey over 50 days in December 2024-February 2025. The sample was distributed to citizens and expatriates in Saudi Arabia to obtain a broad representation and a fair overview of customer satisfaction with therapeutic services on digital platforms. Saudi digital platforms used by respondents were Cura, Clinicy, Labayh, Altibbi, and Sanar. This survey was widely disseminated through online platforms. The survey content included screening questions, including whether the platforms used were related to therapeutic ser-

vices, not medical services, with mention of the platform name used. During the data collection period, 800 sample questionnaires were distributed. We obtained 428 valid questionnaires, a response rate of 53.5%. The research team followed the survey progress regularly and provided reminders to increase response rates by employing a data collection company in KSA. Data sample obtained from 428 customers was enough to run a vigorous statistical analysis. Respondents were also sample diversity, which supported the findings' generalizability to a sample of Saudi and non-Saudi customers.

With data collection and an acceptable response rate, this survey's results are reliable and valid. After data sorting, 12 responses were excluded because of the presence of outliers by more than 10%. Thus, the final sample size was 416 valid responses. Furthermore, anonymity and confidentiality of participant responses were adopted to obtain the most accurate responses. As such, the existing paper managed to reduce the effect of social desirability bias and report respondents' actual responses and behaviors. The sample size was sufficient using G*Power analysis, a statistical application that assists probe minders in estimating their ideal sample size needed to detect size effect (Giner-Sorolla et al., 2024). In this paper, a power analysis was performed to calculate the sample size required for accurate results, which exceed 80% (power = 0.965583).

Common method bias (CMB)

Various statistical methods are utilized in this paper to minimize CMB issues. Variance inflation factor (VIF) is one critical technique that is employed for checking multicollinearity between independent variables in a regression model (Kyriazos & Poga, 2023). If VIF values are high (above 3.3), multicollinearity is problematic and can act as a sign of CMB when variables are taken from the same source (Kock, 2025). In this paper, VIF values for predictor variables included in the model were computed. Hence, none of the VIF values was higher than the 3.3 threshold. Likewise, this paper included a marker-correlation test (MCT), another way to handle CMB (Shoukat et al., 2025). MCT is a non-mediated criterion variable that is theoretically unrelated to interest constructs (Khan et al., 2025). In this paper, results did not yield any significant correlations between the model with and without MCT. Hence, this supports dataset robustness and adds weight to the assertion that CMB is not a major concern (Kock, 2025).

Analytical strategy

Partial least square structural equation modeling (PLS-SEM) is a multivariate statistical technique, which is used to analyze complex relationships between latent variables (Hair & Alamer, 2022). PLS-SEM also permits to have a comprehensive view of the measurement and structural models (Guenther et al., 2023; Kono & Sato, 2023). Further, PLS-SEM can be used with non-normally distributed data and sample sizes between 100-5,000 instances (Sarstedt et al., 2022). The choice of ADANCO-PLS allows for a test of direct and indirect relationships among variables and emphasizes model goodness-of-fit (Shoukat et al., 2025). ADANCO-PLS is suitable for assessing mediation effects (Tan et al., 2025) since perceived hedonic value mediates the association between customer satisfaction with digital therapeutic platforms and its drivers.

Results

Respondent profile

Appendix B highlights respondent profiles, showing that 59.9% were female. Regarding ages, 39.9% of respondents have 25 to below 35 years, followed by 34.6% have 35 to below 45 years. Besides, most respondents (54.6%) have a bachelor's degree, followed by 25% who have high school. Moreover, 54.1% of customers were Saudi citizens, while 45.9% were expatriates. Regarding non-Saudi customers, 15.7% were Egyptians, followed by 14.7% were Pakistanis.

Outer model estimation

Convergent validity refers to the extent to which the items measure saturation to constructs that are relevant to them (Hair et al., 2020). First, item reliability and total scores were evaluated with Cronbach's alpha coefficient above 0.70 (Guenther et al., 2023). Second, Hair et al. (2020) used item loadings that depended on indicators that were estimated, which would mean items being over 0.708 for each item. Third, Hair et al. (2020) suggested measuring the internal consistency of each indicator by using composite reliability (CR), which should exceed 0.70. To establish how much of each indicator variation is explained by remaining statistical indicators (Hair & Alamer, 2022) that refers to average variance extracted (AVE). In this case, AVE values must exceed 50% of the overall variation. According to Table 1 results, AVE values of independent constructs were greater than 0.50, Cronbach's alpha values and composite reliability values were higher than 0.70 (Sarstedt et al., 2022).

Further, factor loadings were greater than 0.708 (see Figure 2 and Table 1), indicating a robust convergent validity (Guenther et al., 2023). Next, discriminant validity is another approach for examining the outer model. Hence, this demonstrates the extent to which a construct differs conceptually and statistically from other concepts that are incorporated into one conceptual domain (Hair & Alamer, 2022). In PLS-SEM, discriminant validity is assessed via the heterotrait-monotrait (HTMT) ratio (Rasoolimanesh, 2022), which reveals the correlation between constructs; if the ratio is less than 0.85; they are different constructs (Sarstedt et al., 2022). Table 2 results confirmed that HTMT values were less than 0.85, implying the discriminant validity was robust (Rasoolimanesh, 2022).

Table 1. Construct reliability and validity

Constructs	Codes	Factor loadings	CR	Alpha	AVE
Sales promotion	SPR1	0.895	0.890	0.887	0.726
	SPR2	0.819			
	SPR3	0.840			
Reliability	RLB1	0.903	0.931	0.929	0.684
	RLB2	0.751			
	RLB3	0.860			
	RLB4	0.851			
	RLB5	0.768			
	RLB6	0.818			
Product diversity	PRD1	0.876	0.907	0.905	0.703
	PRD2	0.799			
	PRD3	0.894			
	PRD4	0.779			
Perceived hedonic value	PHV1	0.812	0.841	0.838	0.635
	PHV2	0.747			
	PHV3	0.829			
Customer satisfaction with experience	CSE1	0.871	0.869	0.865	0.686
	CSE2	0.794			
	CSE3	0.816			

Source: Author preparation

Table 2. Discriminant validity (HTMT)

	Constructs	1	2	3	4	5	6	7
1	Sales promotion							
2	Reliability	.182						
3	Product diversity	.306	.299					
4	Perceived hedonic value	.530	.406	.579				
5	Customer satisfaction with experience	.384	.485	.466	.633			
6	Educational level	.072	.058	.054	.021	.046		
7	Customer type	.134	.109	.005	.167	.042	.077	

Source: Author preparation

Inner model estimation

After evaluating the outer model, the next step was to evaluate the inner model using determination coefficient (R^2), standardized root mean square residual (SRMR), effect sizes (f^2), and path testing. First, R^2 is tested by how much variance in the dependent construct is accounted for by independent constructs (Hair & Alamer, 2022). Findings revealed (see Figure 2 and Table 3) that 70.7% of the variance in perceived hedonic value and 40.6% of variance in customer satisfaction with experiences. These results indicate the model's strong explanatory power. Second, SRMR is the average absolute discrepancy between observed and predicted correlations where values ≤ 0.08 reflect a good model fit (Pavlov et al., 2021). Results proved that the SRMR value was 0.068, which is less than the permit threshold, indicating the model has an acceptable fit. Third, f^2 represents the extent of an independent construct in predicting a dependent one (Hair et al., 2020). Results confirmed (see Table 3) that f^2 values ranged between 0.118 and 0.770, implying direct paths' effect sizes ranged from moderate to strong (Khalilzadeh & Tasci, 2017).

Next, direct paths were tested using t-values (> 1.96), beta values, and statistical significance (< 0.05) values. According to Table 3 and Figure 2, education level (β = -0.028, t = 0.586, p > 0.05) and customer type (β = 0.063, t = 1.427, p > 0.05) did not significantly affect customer satisfaction with digital therapeutic platform experiences. Yet, perceived hedonic value positively affected customer satisfaction with experience (β = 0.643, t = 12.940, p < 0.001), supporting H1. Likewise, perceived hedonic value was positively affected by reliability (β = 0.591, t = 11.307, p < 0.001), product diversity (β = 0.196, t = 4.160, p < 0.001), and sales promotion (β = 0.338, t = 6.623, p < 0.001). Thereby, hypotheses H2-H4 were supported.

Lastly, indirect paths were evaluated by employing perceived hedonic value as a mediating variable using confidence interval (CI) values (Guenther et al., 2023). As such, findings (see Table 3) showed that reliability positively affected customer satisfaction with the experience through perceived hedonic value (β = 0.380, t = 9.070, p < 0.001, CI = 0.275; 0.464), supporting H5a. Likewise, product diversity positively affected customer satisfaction with the experience through perceived hedonic value (β = 0.126, t = 3.691, p < 0.01, CI = 0.038; 0.199), supporting H5b. Further, sales promotion positively affected customer satisfaction with the experience through perceived hedonic

value (β = 0.217, t = 5.716, p < 0.001, CI = 0.124; 0.300), supporting H5c. These results confirmed that perceived hedonic value partially mediated customer satisfaction with digital therapeutic service platform experiences and its three drivers (reliability, product diversity, and sales promotion).

Table 3. Structural model assessment

H	Structural paths	β	t-value	p-value	f²		Decision
Control variables' effects							
	Educational level → Customer satisfaction with experience	-0.028	0.586	0.558	0.001		Not supported
	Customer type → Customer satisfaction with experience	0.063	1.427	0.154	0.006		Not supported
Direct effects							
H1	Perceived hedonic value → Customer satisfaction with experience	0.643***	12.940	0.000	0.676		Supported
H2	Reliability → Perceived hedonic value	0.591***	11.307	0.000	0.770		Supported
H3	Product diversity → Perceived hedonic value	0.196***	4.160	0.000	0.118		Supported
H4	Sales promotion → Perceived hedonic value	0.338***	6.623	0.000	0.329		Supported
Indirect effects							
H	Structural paths	β	t-value	p-value	97.5% CI		Decision
H5a	Reliability → Perceived hedonic value → Customer satisfaction with experience	0.380***	9.070	0.000	0.275	0.464	Supported
H5b	Product diversity → Perceived hedonic value → Customer satisfaction with experience	0.126**	3.691	0.006	0.038	0.199	Supported
H5c	Sales promotion → Perceived hedonic value → Customer satisfaction with experience	0.217***	5.716	0.000	0.124	0.300	Supported
Quality indicators							
R² for Perceived hedonic value		0.707	R² for Customer satisfaction with experience				0.406
SRMR		0.068					

Note: 2-tailed test; ***p < 0.001
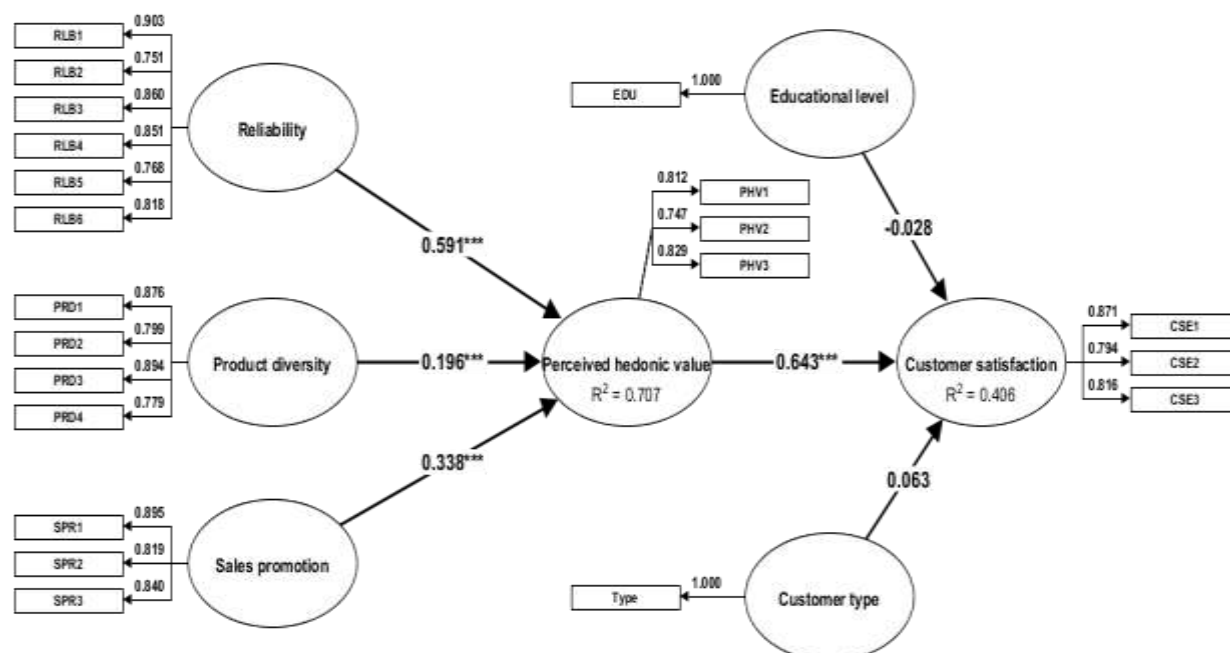
Source: Author preparation

Figure 2. Structural model findings
Source: Author preparation

Discussion
General discussion
The study's conclusions considerably advance our knowledge of customer satisfaction in digital therapeutic platforms, especially in the context of Saudi Arabia. Based on Perceived Value Theory (PVT) and Expectation Disconfirmation Theory (EDT), the study demonstrates that sales promotion, product diversity, and dependability all directly increase perceived hedonic value, which in turn raises customer satisfaction. Furthermore, the relationship between the three service qualities and customer satisfaction is considerably mediated by perceived hedonic value, highlighting its crucial role in creating favourable user experiences.

Perceived hedonic value and customer satisfaction are strongly correlated, which supports earlier claims that the emotional and experience aspects of digital platforms are just as significant as the functional ones (Ozturk et al., 2023; Hadjielias et al., 2022). In Saudi Arabia, where wellness and digital health platforms are becoming more popular under Vision 2030, this conclusion is very pertinent. Consumers in this area are looking for more engaging and emotionally enlightening experiences in addition to successful therapeutic results. The importance of PVT in this situation is confirmed by the substantial mediating impact of perceived hedonic value, which emphasises that the benefits of digital therapeutic platforms go beyond practical ones (Akdim et al., 2022).

In line with EDT's claim that positive disconfirmation and satisfaction follow expectation confirmation, reliability was found to be a significant predictor of perceived hedonic value and satisfaction (Komba & Komba, 2024; Hallencreutz & Parmler, 2021). PVT's hedonic dimension is further supported by the emotional comfort and trust that come from dependable service delivery (Lavuri et al., 2022; Yum & Kim, 2024). Reliable service environments give customers psychological safety, which improves emotional satisfaction and usage retention in Saudi Arabia, where digital literacy differs among demographic groups.

Product diversity was also found to have a significant impact on perceived hedonic value, confirming the idea that variety empowers customers by providing a sense of autonomy and personal fit (Chan, 2024; Chaulagain, 2024). This is consistent with Saudi Arabia's distinct socio-cultural setting, in which healthcare preferences vary between expatriates and nationals. Offering a diverse range of therapeutic services enables platforms to cater to this diversity, hence strengthening users' emotional relationships with the platform.

Although it has traditionally been seen as a utilitarian driver, sales promotions have shown a strong impact on hedonic value, indicating that relevant and timely promotions can produce excitement, joy, and emotional fulfilment (Mandolfo et al., 2022; Suhail & Srinivasulu, 2021). By showing how promotional cues can simultaneously increase both functional and emotional value, this research broadens the applicability of PVT. Well-designed promotions may have two functions for Saudi consumers, where gamified promos and digital offers are becoming more prevalent: they can save costs while also strengthening the platform's emotional resonance.

The combined framework of EDT and PVT is supported by the mediation impact of perceived hedonic value across all three drivers (reliability, product diversity, and sales promotion). Although expectation confirmation and disconfirmation are captured by EDT (Schiebler et al., 2025), long-term customer satisfaction is ultimately explained by affective satisfaction, which is embodied by hedonic value. This is consistent with the dual-process approach of satisfaction, which holds that the total customer experience is influenced by both emotional experiences (such pleasure and enjoyment) and cognitive assessments (like service dependability) (Barrett et al., 2024; Yuan et al., 2022).

Unexpectedly, the control variable (i.e., educational level and customer type) did not show significant effects, indicating that emotional and service-related experiences rather than demographic segmentation may have a more universal impact on satisfaction with digital therapeutic platforms in Saudi Arabia. This is a significant discovery, particularly considering the Kingdom's socioeconomic variety and the ways in which locals and foreigners engage with its healthcare services (Yusuf et al., 2021). These controls' insignificance may point to a levelling effect of digitalisation in healthcare expectations and access, where user experience surpasses conventional demographic differences.

In conclusion, incorporating EDT and PVT into digital therapy platforms deepens our understanding of customer satisfaction and confirms the significance of hedonic value as a mediating mechanism. The study reaffirms that to maintain long-term satisfaction and loyalty, digital therapy platforms must engage users emotionally in addition to being clinically beneficial. Practically speaking, Saudi Arabian providers of digital health platforms ought to put an emphasis on platform dependability and broaden their range of services to accommodate a variety of medical requirements while incorporating pleasurable, emotionally impactful user experiences.

Theoretical implications

Our theoretical contributions are rooted in two well-established theories, EDT and PVT, to investigate customer satisfaction drivers in the digital therapeutic service context. EDT suggests that satisfaction is directly related to the extent to which pre-purchase expectations are exceeded or disconfirmed (Komba & Komba, 2024). For digital therapeutics platforms, it is feasible for their customers to have specific references about the kinds and number of services provided and promotional offers that can determine their satisfaction (Rostami et al., 2025). This paper proposes that when these anticipations are matched or surpassed–platform reliability, product diversity, and sales promotion–customers experience positive disconfirmation, eliciting satisfaction differentials. This theoretical perspective highlights the pivotal roles of these drivers in shaping customer satisfaction,

which is consistent with the emphasis on expectation and post-purchase appraisal (Schiebler et al., 2025).

PVT is also prominent in our theoretical background. According to this theory, customers consider the total costs and benefits of decision-making (Hu et al., 2025). Considering therapeutic service platforms, perceived hedonic value serves as a critical mediating variable, influencing customer satisfaction due to an emotional and experimental dimension to the functional benefits of digital platforms. This paper indicates that reliability and product diversity are utilitarian measures, while believed hedonic value (i.e., enjoyment, pleasure, or emotional fulfillment in platform usage) can substantially increase customers and perceived values. This mediating effect of perceived hedonic value suggests a comprehensive view of customer satisfaction, in which utilitarian and emotional dimensions jointly influence overall experiences.

Integrating EDT and PVT, this expanded framework provides a more detailed insight into customer satisfaction toward digital therapeutic services. The existing paper suggests that customer satisfaction is a rational feature and is subject to hedonic value. This theoretical integration has implications for digital platform providers, highlighting the need for a two-sided approach (e.g., ensuring that expectations about reliability and product diversity are met and creating emotionally satisfying experiences). Through this dual paradigm, the existing paper makes a valuable theoretical contribution by providing an integrative model of customer satisfaction that includes rational and emotional aspects of service encounters. This conceptual contribution is critical in the fast-emergent digital therapeutic service context. Hence, utilitarian and hedonic aspects of customer satisfaction carry an increasingly central role in customer loyalty and engagement.

Practical implications

This paper has valuable implications for digital wellness practitioners regarding customer satisfaction drivers toward therapeutic service-related digital platforms. This empirical evidence supports the idea that three cues (e.g., reliability, product diversity, and sales promotion) are operating on customer satisfaction. For managers, this translates into recognition that customers are motivated by the instrumental benefits that platforms offer and relatively emotionally satisfied by interactions in the platforms. The problem is to develop efficient and reliable experiences that are also interesting, fun, and emotional experiences. Reliability continues to be an essential cue to ensure digital therapeutic platforms can satisfy customer needs. Hence, businesses should provide value-added due to consistent service quality. A stable marketplace where customers can count on access to therapy will foster trust, which is critical for customer retention.

In therapeutic services, businesses must address customer needs, from mental counseling to wellness coaching to fitness and holistic treatments. Hence, this leads to digital therapeutic platforms that provide guided meditations, sleep stories, breathing programs, and therapeutic music, which is a testament to the impact of product diversity. By constantly testing and adding services to satisfy customer desires, businesses can develop platforms that are more inclusive to customer types and make them fulfill their wants and needs. For managers, providing product diversity would involve examining what customers are adjusting offers to match existing demand. Further, promo tactics (e.g., discounts, loyalty programs, or discounted service bundles) can lead to customers believing they are getting more bang for their buck. For example, digital platforms could provide a 30-day free trial and allow for discounts for annual subscriptions to keep customers interacting with products over a long period. Promotions drive new customers and increase perceived hedonic value for their satisfaction. Managers face the trade-off of giving appealing deals while preserving service quality. It might be counterproductive for platforms to rely too heavily on discounts or advertising in such a niche industry or hurt its perceived value when calling premium therapeutic services.

Further, this paper offers practical implications for managers to manage digital therapeutic platforms that evolve to match high expectations considering tech-savvy customer base diversity. By paying attention to the functional and emotional views of customer experiences, businesses can respond to customer needs more effectively and increase customer satisfaction in the digital therapeutic domain. The emphasis on customer experiences, emotional fulfillment, and engagement can increase customer satisfaction and churn. Lastly, hedonic values should be built into digital therapeutic platform development strategies to ensure customer experiences. Managers should try to achieve a sufficient balance between service reliability and emotional service to increase customer satisfaction. Providing a good range of services (e.g., high-max, rent battle items, good-quality sales, fun to use) will increase customer value.

Limitations and future studies

This study has some limitations despite its contributions. First, the results are based on self-reported data, which could be skewed by individual perceptions or social desirability bias. Although this method is frequently used in satisfaction studies, it could be advantageous for future research to triangulate results by including usage or behavioural data (such as clickstream or retention rates). Second, the study is Saudi Arabia-specific, which restricts the findings' applicability to other geographical or cultural contexts. Even though the healthcare market in Saudi Arabia is active and fast digitizing, more studies are required to test the model in other nations, especially those with various levels of digital maturity and healthcare legislation. Third, while the study integrated EDT and PVT, it focused solely on hedonic value as the emotional mediator. Future studies could explore other affective constructs such as trust, perceived enjoyment, or psychological empowerment to enrich understanding of user-platform interactions.

Moreover, the control variables, educational level and customer type, did not yield significant effects in this study. Future research could employ qualitative or mixed method approaches to uncover latent demographic or psychographic factors that may influence digital health experiences but are not captured through standard survey measures. Lastly, longitudinal studies are encouraged to examine how customer satisfaction evolves over time with prolonged platform use. Since digital therapeutic engagement often involves ongoing participation, temporal dynamics could offer richer insights into loyalty and health outcomes.

Conclusion

This study aimed to investigate how reliability, product diversity, and sales promotions affect consumer satisfaction with digital therapeutic platforms, as well as the mediating function of perceived hedonic value. Based on expectancy disconfirmation theory and perceived value theory, this study adds to our understanding of how utilitarian and hedonic characteristics interact to create consumer evaluations in a fast-developing segment of digital health services. The findings, based on responses from 416 customers in Saudi Arabia, show that reliability, product diversity, and sales promotions not only have a direct impact on satisfaction, but also significantly increase perceived hedonic value, which partially mediates the relationship between service drivers and user satisfaction.

Overall, this study provides strong evidence that digital therapy platforms must be developed to engage users' minds and emotions. Reliability and service diversity are important, but incorporating hedonic value is what ultimately distinguishes platforms and keeps users satisfied. As the global healthcare ecosystem becomes increasingly digitalised, understanding this interplay will be critical to building platforms that produce not only good therapeutic outcomes but also meaningful and delightful user experiences.

. **References**

Akdim, K., Casaló, L. V., & Flavián, C. (2022). The role of utilitarian and hedonic aspects in the continuance intention to use social mobile apps. *Journal of Retailing and Consumer Services, 66*, 102888.

Alghamdi, S. M., Alsulayyim, A. S., Alqahtani, J. S., & Aldhahir, A. M. (2021). Digital health platforms in Saudi Arabia: Determinants from the COVID-19 pandemic experience. *Healthcare, 9*(11), 1517.

AlNemer, A. M. (2024). *Examining the Kingdom of Saudi Arabia's tourism sector and assessing its potential contributions in achieving the kingdom's Vision 2030* (Doctoral dissertation, Pepperdine University).

Al-Omoush, K.S., de Lucas Ancillo, A., & Gavrila, S.G. (2022). The role of cultural values in social commerce adoption in the Arab world: An empirical study. *Technological Forecasting and Social Change, 176*, 121440.

Asif, M., & Fazel, H. (2024). Digital technology in tourism: A bibliometric analysis of transformative trends and emerging research patterns. *Journal of Hospitality and Tourism Insights, 7*(3), 1615-1635.

Azhari, A., Firman, A., Khalik, A., & Oktaviani, A. R. (2023). The effect of location, product diversity, and store atmosphere on increasing customer satisfaction. *Advances in Business & Industrial Marketing Research, 1*(3), 108-116.

Balinado, J. R., Prasetyo, Y. T., Young, M. N., Persada, S. F., Miraja, B. A., & Redi, A. A. N. P. (2021). The effect of service quality on customer satisfaction in an automotive after-sales service. *Journal of Open Innovation: Technology, Market, and Complexity, 7*(2), 116.

Bankuoru Egala, S., Boateng, D., & Aboagye Mensah, S. (2021). To leave or retain? An interplay between quality digital banking services and customer satisfaction. *International journal of Bank Marketing, 39*(7), 1420-1445.

Barrett, J. A. M., Jaakkola, E., Heller, J., & Brüggen, E. C. (2024). Customer engagement in utilitarian vs. hedonic service contexts. Journal of Service Research, 10946705241242901.

Bhuiyan, M. S. (2024). The role of AI-Enhanced personalization in customer experiences. *Journal of Computer Science and Technology Studies, 6*(1), 162-169.

Bondarenko, V., & Vyshnivska, B. (2023). Promotional marketing as a method of increasing sales. *Three Seas Economic Journal, 4*(2), 21-28.

Cahaya, Y. F., Siswanti, I., Putra, Y. M., & Pattiwael, A. C. (2023). Contributions to customer satisfaction from product quality, promotion and price. *Journal of Economics, Finance and Management Studies, 6*(6), 2434-2440.

Calvo-Porral, C., & Otero-Prada, L. M. (2021). The emotional influence on satisfaction and complaint behavior in hedonic and utilitarian services. *International Journal of Quality and Service Sciences, 13*(3), 471-488.

Carrera, A., Zoccarato, F., Mazzeo, M., Lettieri, E., Toletti, G., Bertoli, S., ... & Fresa, E. (2023). What drives patients' acceptance of Digital Therapeutics? Establishing a new framework to measure the interplay between rational and institutional factors. *BMC Health Services Research, 23*(1), 145.

Chan, E. Y. (2024). *Consumer behavior in practice*. Cham: Palgrave Macmillan.

Chaulagain, S. (2024). Hospitality in healthcare: the impacts of utilitarian and hedonic value perceptions on behavioral intentions in the context of medical hotels. *Journal of Hospitality and Tourism Insights, 7*(5), 3167-3184.

Choi, S.B., & Kim, J.M. (2018). A comparative analysis of electronic service quality in the online open market and social commerce: The case of Korean young adults. *Service Business, 12*(2), 403-433.

Demirel, D. (2022). The effect of service quality on customer satisfaction in digital age: customer satisfaction based examination of digital CRM. *Journal of Business Economics and Management, 23*(3), 507-531.

Ding, C., Zhang, R., & Wu, X. (2023). The impact of product diversity and distribution networks on consumption expansion. *Journal of Business Research, 161*, 113833.

Dong, X., Li, B., Xie, K., Zhao, X., & Xiao, R. (2025). The effect of the product categories diversity recommended on cross-buying in electronic commerce platforms: The moderating role of user navigation heterogeneity. *Journal of Consumer Behavior, 24*(1), 304-331.

Dong, X., Tu, H., Zhu, H., Liu, T., Zhao, X., & Xie, K. (2024). Does diversity facilitate consumer decisions: a comparative perspective based on single-category versus multi-category products. *Asia Pacific Journal of Marketing and Logistics, 36*(4), 936-956.

Dousin, O., & Sulong, R. S. (2022). "Stepping out of the ordinary": exploring cross-cultural challenges of expatriates in the Kingdom of Saudi Arabia. *Rajagiri Management Journal, 16*(2), 131-143.

Elias, J. D., & Lubua, E. W. (2024). The impact of usability, functionality and reliability on users' satisfaction during library system adoption. *The Journal of Informatics, 1*(1), 13-21.

Eren, B. A. (2021). Determinants of customer satisfaction in chatbot use: Evidence from a banking application in Turkey. *International Journal of Bank Marketing, 39*(2), 294-311.

Felix, A., & Rembulan, G. D. (2023). Analysis of key factors for improved customer experience, engagement, and loyalty in the e-commerce industry in Indonesia. *Aptisi Transactions on Technopreneurship, 5*(2), 196-208.

Giner-Sorolla, R., Montoya, A. K., Reifman, A., Carpenter, T., Lewis Jr, N. A., Aberson, C. L., ... & Soderberg, C. (2024). Power to detect what? Considerations for planning and evaluating sample size. *Personality and Social Psychology Review, 28*(3), 276-301.

Guenther, P., Guenther, M., Ringle, C. M., Zaefarian, G., & Cartwright, S. (2023). Improving PLS-SEM use for business marketing research. *Industrial Marketing Management, 111*, 127-142.

Hadjielias, E., Christofi, M., Christou, P., & Drotarova, M. H. (2022). Digitalization, agility, and customer value in tourism. *Technological Forecasting and Social Change, 175,* 121334.

Hair Jr, J. F., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research, 109*, 101-110.

Hair, J., & Alamer, A. (2022). Partial least squares structural equation modeling (PLS-SEM) in second language and education research: Guidelines using an applied example. *Research Methods in Applied Linguistics, 1*(3), 100027.

Hallencreutz, J., & Parmler, J. (2021). Important drivers for customer satisfaction–From product focus to image and service quality. *Total quality Management & Business Excellence, 32*(5-6), 501-510.

Hassounah, M., Raheel, H., & Alhefzi, M. (2020). Digital response during the COVID-19 pandemic in Saudi Arabia. *Journal of Medical Internet Research, 22*(9), e19338.

Helkkula, A., Arnould, E., & Chen, A. (2023). Glocalization in service cultures: Tensions in customers' service expectations and experiences. *Journal of Service Research, 26*(2), 233-250.

Hien, N. N., Long, N. T., Liem, V. T., & Luu, D. X. (2024). Customer responses to airline service failure: Perspectives from expectation disconfirmation theory. *Sage Open, 14*(2), 1-14.

Hu, X., Yusof, R. N. R., & Mansor, Z. D. (2025). Consumers' purchase intentions towards new energy vehicles based on the theory of planned behavior on perceived value: An empirical survey of China. *World Electric Vehicle Journal, 16*(3), 120.

Huang, Q., Dastane, O., Cham, T. H., & Cheah, J. H. (2024). Is 'she'more impulsive (to pleasure) than 'him'during livestream e-commerce shopping? *Journal of Retailing and Consumer Services, 78*, 103707.

Kadiri, S. S. (2024). Assessing the effects of consumer sales promotion and consumer buying behaviour in the telecommunication industry of Nigeria. *British Journal of Marketing Studies, 12*(1), 28-45.

Kaveh, A., Nazari, M., van der Rest, J. P., & Mira, S. A. (2021). Customer engagement in sales promotion. *Marketing Intelligence & Planning, 39*(3), 424-437.

Kemppainen, T., & Paananen, T. E. (2024). Dualities of digital services: Everyday digital services as positive and negative contributors to customer well-being. *Journal of Service Theory and Practice, 34*(3), 464-490.

Khalilzadeh, J., & Tasci, A. D. (2017). Large sample size, significance level, and the effect size: Solutions to perils of using big data for academic research. *Tourism Management, 62*, 89-96.

Khan, M. A., Selem, K. M., Zubair, S. S., & Shoukat, M. H. (2025). Linking coworker friendship with incivility: Comparison between headwaiters and servers in family-style restaurants. *Kybernetes, 54*(2), 705-726.

Kim, J., & Chung, J. (2024). Analysis of service quality in smart running applications using big data text mining techniques. *Journal of Theoretical and Applied Electronic Commerce Research, 19*(4), 3352-3369.

Kim, M., Kim, Y., & Lee, G. (2023). Effect of situational factors (control, convenience, time pressure, and order complexity) on customers' self-service technology choices. *Journal of Hospitality Marketing & Management, 32*(5), 649-669.

Kitsios, F., Stefanakakis, S., Kamariotou, M., & Dermentzoglou, L. (2023). Digital service platform and innovation in healthcare: Measuring users' satisfaction and implications. *Electronics, 12*(3), 662.

Kock, N. (2025). Methods showcase—Using PLSF-SEM in business communication research. *International Journal of Business Communication, 62*(1), 187-205.

Komba, M. M., & Komba, G. V. (2024). Internet service provision in Tanzania: An examination of user satisfaction, package pricing, and service challenges. *African Quarterly Social Science Review, 1*(4), 1-10.

Kono, S., & Sato, M. (2023). The potentials of partial least squares structural equation modeling (PLS-SEM) in leisure research. *Journal of Leisure Research, 54*(3), 309-329.

Krupenev, D., Komendantova, N., Boyarkin, D., & Iakubovskii, D. (2023). Digital platform of reliability management systems for operation of microgrids. *Energy Reports, 10*, 2486-2495.

Kumar, V., & Ayodeji, O. G. (2021). E-retail factors for customer activation and retention: An empirical study from Indian e-commerce customers. Journal of Retailing and Consumer Services, 59, 102399.

Kyriazos, T., & Poga, M. (2023). Dealing with multicollinearity in factor analysis: The problem, detections, and solutions. *Open Journal of Statistics, 13*(3), 404-424.

Lavuri, R., Jindal, A., & Akram, U. (2022). How perceived utilitarian and hedonic value influence online impulse shopping in India? Moderating role of perceived trust and perceived risk. *International Journal of Quality and Service Sciences, 14*(4), 615-634.

Liang, C. C., & Lin, Y. W. (2023). Online promotion effects under time limitation-A study of survey and physiological signals. *Decision Support Systems, 170*, 113963.

Lim, W. M. (2024). A typology of validity: content, face, convergent, discriminant, nomological and predictive validity. *Journal of Trade Science, 12*(3), 155-179.

Lorscheider, M., Gaudin, A., Nakhlé, J., Veiman, K. L., Richard, J., & Chassaing, C. (2021). Challenges and opportunities in the delivery of cancer therapeutics: Update on recent progress. *Therapeutic Delivery, 12*(1), 55-76.

Madhu, S., Soundararajan, V., & Parayitam, S. (2023). Online promotions and hedonic motives as moderators in the relationship between e-impulsive buying tendency and customer satisfaction: Evidence from India. *Journal of Internet Commerce, 22*(3), 395-431.

Mainardes, E. W., & Freitas, N. P. D. (2023). The effects of perceived value dimensions on customer satisfaction and loyalty: A comparison between traditional banks and Fintechs. *International Journal of Bank Marketing, 41*(3), 641-662.

Mandolfo, M., Bettiga, D., Lamberti, L., & Noci, G. (2022). Influence of sales promotion on impulse buying: A dual process approach. *Journal of Promotion Management, 28*(8), 1212-1234.

Mani, Z. A., & Goniewicz, K. (2024). Transforming healthcare in Saudi Arabia: A comprehensive evaluation of vision 2030's impact. *Sustainability, 16*(8), 3277.

McKee, K. M., Dahl, A. J., & Peltier, J. W. (2024). Gen Z's personalization paradoxes: A privacy calculus examination of digital personalization and brand behaviors. *Journal of Consumer Behavior, 23*(2), 405-422.

Mehrolia, S., Alagarsamy, S., & Solaikutty, V. M. (2021). Customers response to online food delivery services during COVID-19 outbreak using binary logistic regression. *International Journal of Consumer Studies, 45*(3), 396-408.

Meng, S., Luo, L., Qiu, X., & Dai, Y. (2022). Service-oriented reliability modeling and autonomous optimization of reliability for public cloud computing systems. *IEEE Transactions on Reliability, 71*(2), 527-538.

Mofokeng, T. E. (2021). The impact of online shopping attributes on customer satisfaction and loyalty: Moderating effects of e-commerce experience. *Cogent Business & Management, 8*(1), 1968206.

Ozturk, A. B., Pizam, A., Hacikara, A., An, Q., Chaulagain, S., Balderas-Cejudo, A., ... & Shen, Y. (2023). Hotel customers' behavioral intentions toward service robots: The role of utilitarian and hedonic values. *Journal of Hospitality and Tourism Technology, 14*(5), 780-801.

Paulisso, D. C., Schmeler, M. R., Schein, R. M., Allegretti, A. L. C., Campos, L. C. B., Costa, J. D., ... & Cruz, D. M. C. D. (2021). Functional mobility assessment is reliable and correlated with satisfaction, independence and skills. *Assistive Technology, 33*(5), 264-270.

Pavlov, G., Maydeu-Olivares, A., & Shi, D. (2021). Using the standardized root mean squared residual (SRMR) to assess exact fit in structural equation models. *Educational and Psychological Measurement, 81*(1), 110-130.

Ponsignon, F., Jaud, D. A., Durrieu, F., & Lunardo, R. (2024). The ability of experience design characteristics to elicit epistemic value, hedonic value, and visitor satisfaction in a wine museum. *International Journal of Contemporary Hospitality Management, 36*(8), 2582-2600.

Qin, H., Osatuyi, B., & Xu, L. (2021). How mobile augmented reality applications affect continuous use and purchase intentions: A cognition-affect-conation perspective. *Journal of Retailing and Consumer Services, 63*, 102680.

Ramasundaram, A., Pandey, N., Shukla, Y., Alavi, S., & Wirtz, J. (2023). Fluidity and the customer experience in digital platform ecosystems. *International Journal of Information Management, 69*, 102599.

Rasoolimanesh, S. M. (2022). Discriminant validity assessment in PLS-SEM: A comprehensive composite-based approach. *Data Analysis Perspectives Journal, 3*(2), 1-8.

Rostami, M., Abdi, M., & Asadi, N. Z. (2025). Predicting the future of mental health interventions: The role of digital therapeutics. *Journal of Foresight and Public Health, 2*(2), 33-51.

Ruiz-Alba, J. L., Abou-Foul, M., Nazarian, A., & Foroudi, P. (2022). Digital platforms: customer satisfaction, eWOM and the moderating role of perceived technological innovativeness. *Information Technology & People, 35*(7), 2470-2499.

Sarstedt, M., Hair, J. F., Pick, M., Liengaard, B. D., Radomir, L., & Ringle, C. M. (2022). Progress in partial least squares structural equation modeling use in marketing research in the last decade. *Psychology & Marketing, 39*(5), 1035-1064.

Schiebler, T., Lee, N., & Brodbeck, F. C. (2025). Expectancy-disconfirmation and consumer satisfaction: A meta-analysis. *Journal of the Academy of Marketing Science*, 1-22.

Sestino, A., Bernardo, A., Rizzo, C., & Bresciani, S. (2023). An explorative analysis of the antecedents and consequents of gamification in the digital therapeutic context. *European Journal of Innovation Management*, 1-20.

Shah, A. M., Muhammad, W., Lee, K., & Naqvi, R. A. (2021). Examining different factors in web-based patients' decision-making process: Systematic review on digital platforms for clinical decision support system. *International Journal of Environmental Research and Public Health, 18*(21), 11226.

Shoukat, M. H., Elgammal, I., Aziz, S., Olya, H., & Selem, K. M. (2025). Medical tourism index and travel willingness via travel anxiety: PLS-NCA approach. Tourism Recreation Research, 50(2), 369-384.

Shoukat, M. H., Selem, K. M., Olya, H., Shahidul Islam, M., & Tan, C. C. (2025). Eliciting the nexus between hotel service attributes and customer advocacy: Moderating effect of brand resonance. *Journal of Quality Assurance in Hospitality & Tourism*, 1-26.

Sohn, J.W., & Kim, J.K. (2020). Factors that influence purchase intentions in social commerce. *Technology in Society, 63*, 101365.

Soleimani, M. (2022). Buyers' trust and mistrust in e-commerce platforms: A synthesizing literature review. *Information Systems and e-Business Management, 20*(1), 57-78.

Suhail, P., & Srinivasulu, Y. (2021). Perception of service quality, satisfaction, and behavioral intentions in Ayurveda healthcare. *Journal of Ayurveda and integrative Medicine, 12*(1), 93-101.

Tan, C. C., Saghier, E. G., & Selem, K. M. (2025). Potential barriers to digital transformation and faculty member efficiency: Applying SAMR model in hospitality higher education. *Journal of Quality Assurance in Hospitality & Tourism*, 1-26.

Tong, F., Lederman, R., D'Alfonso, S., Berry, K., & Bucci, S. (2022). Digital therapeutic alliance with fully automated mental health smartphone apps: A narrative review. *Frontiers in Psychiatry, 13*, 819623.

Tsiotsou, R. H., & Boukis, A. (2022). In-home service consumption: A systematic review, integrative framework and future research agenda. *Journal of Business Research, 145*, 49-64.

Urošević, A., & Dukić, A. (2024). The impact of sales promotion on consumer satisfaction. *Marketing, 55*(2), 99-114.

Wang, W., Chen, R.R., Ou, C.X., & Ren, S.J. (2019). Media or message, which is the king in social commerce? An empirical study of participants' intention to repost marketing messages on social media. *Computers in Human Behavior, 93*, 176-191.

Wu, J., & Dong, M. (2023). Research on customer satisfaction of pharmaceutical e-commerce logistics service under service encounter theory. *Electronic Commerce Research and Applications, 58*, 101246.

Yang, Q., Wang, Z. S., Feng, K., & Tang, Q. Y. (2024). Investigating the crucial role of logistics service quality in customer satisfaction for fresh e-commerce: A mutually validating method based on SERVQUAL and service encounter theory. *Journal of Retailing and Consumer Services, 81*, 103940.

Yuan, C., Zhang, C., & Wang, S. (2022). Social anxiety as a moderator in consumer willingness to accept AI assistants based on utilitarian and hedonic values. *Journal of Retailing and Consumer Services, 65*, 102878.

Yum, K., & Kim, J. (2024). The Influence of perceived value, customer satisfaction, and trust on loyalty in entertainment platforms. *Applied Sciences, 14*(13), 5763.

Yusuf, B. N. M., Zakaria, N., & Abdul-Talib, A. N. (2021). Using social network tools to facilitate cultural adjustment of self-initiated Malaysian female expatriate nurses in Saudi Arabia. *Journal of Infection and Public Health, 14*(3), 380-384.

Zaki, K., Alhomaid, A., Ghareb, A., Shared, H., Raslan, A., Khalifa, G. S., & Elnagar, A. K. (2025). Digital synergy and strategic vision: Unlocking sustainability-oriented innovation in Saudi SMEs. *Administrative Sciences, 15*(2), 59.

Zhang, H., Zheng, S., & Zhu, P. (2024). Why are Indonesian consumers buying on live streaming platforms? Research on consumer perceived value theory. *Heliyon, 10*(13).

Zhao, M., & Wang, X. (2021). Perception value of product-service systems: Neural effects of service experience and customer knowledge. *Journal of Retailing and Consumer Services, 62*, 102617.

Appendix A. Measurement items

Constructs	Codes	Items
Sales promotion	SPR1	I feel like enjoying when I see therapeutic service prices on telemedicine-related digital platforms.
	SPR2	I think positively about therapeutic service prices on telemedicine-related digital platforms.
	SPR3	I have experience in enjoying therapeutic service prices on telemedicine-related digital platforms.
Reliability	RLB1	I rely on therapeutic services provided to me by telemedicine-related digital platforms.
	RLB2	I rely on wellness information provided by telemedicine-related digital platforms.
	RLB3	In general, I rely on telemedicine-related digital platforms.
	RLB4	I rely on the therapeutic service information provided by telemedicine-related digital platforms I use.
	RLB5	I think that the telemedicine-related digital platforms I purchase are reliable.
	RLB6	Telemedicine-related digital platforms are reliable.
Product diversity		When I use telemedicine-related digital platforms, _____
	PRD1	I found a variety of therapeutic product items.
	PRD2	I found regular updates for therapeutic products.
	PRD3	I found various therapeutic product groups.
	PRD4	I found various price ranges for therapeutic products.
Perceived hedonic value		Using telemedicine-related digital platforms _____
	PHV1	Are one that I would enjoy for therapeutic services.
	PHV2	Are one that I would feel interesting for therapeutic services.
	PHV3	Would give me pleasure for therapeutic services.
Customer satisfaction with experience		Regarding therapeutic services, _____
	CSE1	I am satisfied with using telemedicine-related digital platforms.
	CSE2	I am not complaining about using telemedicine-related digital platforms.
	CSE3	Telemedicine-related digital platforms fulfill my demand.

Source: Author preparation

Appendix B. Respondent profile (n = 416)

Demographics	Frequency	%
Gender		
Male	167	40.1
Female	249	59.9
Age-wise (years)		
Below 25	80	19.2
25 to less than 35	166	39.9
35 to less than 45	144	34.6
45 and more	26	6.3
Education level		

PhD/MSc	85	20.4
Bachelor	227	54.6
High school	104	25
Customer type		
Citizen	225	54.1
Expatriate	191	45.9
If you are expatriate? What is your country?		
Bangladesh	21	11
India	20	10.5
Pakistan	28	14.7
Yemen	19	9.9
Egypt	30	15.7
Sudan	25	13.1
Syria	22	11.5
Jordan	26	13.6

Source: Author preparation