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Article

# Exploring the Drivers of Patient Value Co-creation Behavior in Online Healthcare: A Mediated Model in the Lens of the Theory of Planned Behavior

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**Abstract:** This study examines the factors influencing value co-creation behavior among patients utilizing online health services, grounded in the Theory of Planned Behavior (TPB). A structured questionnaire was distributed to 304 patients who had experienced online healthcare services and regularly used social media. Data analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings show that all hypothesized relationships were statistically significant, with Attitude, Subjective Norms, and Perceived Behavioral Control collectively explaining 78.3% of the variance in Value Co-creation Behavior. This confirms the robustness of the extended TPB model in explaining how patients participate in online healthcare platforms. Additionally, the mediation analysis indicated that Attitude, Subjective Norms, and Perceived Behavioral Control fully mediate the influence of Trust, Health Consciousness, Self-Efficacy, EWOM, and Facilitating Conditions on Value Co-creation Behavior. These results imply that cognitive, social, and technological factors affect co-creation indirectly through core TPB components. The study advances theory by incorporating additional contextual and technological factors that better reflect the complexities of digital healthcare environments. Practically, it offers valuable insights for healthcare managers and digital marketers on how to build trust, foster social engagement, and enhance technological support to promote patient involvement and value co-creation. Finally, the study recognizes its cross-sectional design as a limitation and suggests that future longitudinal and cross-cultural research could strengthen the applicability of these findings.

**Keywords:** Digital Health; Value Co-Creation Behavior (VCB); Theory of Planned Behavior (TPB); Social Media; Subjective Norms; Perceived Behavioral Control; Attitude; PLS-SEM

## 1. Introduction

The healthcare industry has undergone a revolutionary transformation worldwide, driven by the rapid advancement of the internet and web-based technology. The emergence of online healthcare services has marked an unprecedented development in this sector. Online healthcare services encompass a range of services, including medical consultations, follow-ups, health screenings, and other health-related services, all delivered through a digital platform [1]. Online healthcare refers to the provision and consumption of health-related services and interactions through Internet-based platforms that enable communication, consultation, diagnosis, and

information exchange between healthcare providers and patients in real time or asynchronously. It integrates digital technologies to facilitate accessible, efficient, and patient-centered healthcare delivery beyond traditional clinical settings [2, 3, 4]. The digitalization of the health industry in Bangladesh began in 1998 with the launch of the Health and Population Sector Program (HPSP) by the Ministry of Health and Family Welfare (MOHFW), which aimed to integrate technology to improve health service delivery. The government's "Digital Bangladesh" initiative has lately intensified this emphasis on using ICT to enhance healthcare accessibility and quality [5]. Recently, the global healthcare system has been significantly impacted by the COVID-19 pandemic, with a notable shift toward online consultations that prioritize quality treatment at an affordable price. This trend is expected to persist in the post-COVID situation [6]. The proliferation of online healthcare platforms, such as Telemedicine, HealthBd, Praava Health, iClinic, Shebaghor, and Seekmed, in Bangladesh has enabled patients to consult medical specialists, share diagnostic reports, and seek medical advice remotely. Although the healthcare industry has experienced widespread adoption of these services by patients, questions arise regarding the uniform adoption in different demographic and regional settings, as well as the reliability and safety of online healthcare services. Therefore, developing and maintaining an effective digital online platform is essential to engage customers and help them to co-create value.

Value co-creation, a key element in the service industry, is a collaborative process where consumers and service providers coproduce or co-create value using the current digital landscape [7, 8] particularly, social media turns into a powerful tool and an ideal setting for value co-creation that facilitates dynamic interaction and resource exchange among users [9]. Social media enables patients using online healthcare platforms to share their experiences, offer peer advice, and provide feedback, thereby contributing to service improvement and collaborative learning. These interactions not only help to build trust but also boost engagement between healthcare providers and patients. Nevertheless, in developing economies, the extent to which individuals participate in co-creation activities and the social, psychological, and technological aspects that shape their behaviour remains insufficiently understood.

Although the literature on value co-creation continues to grow, a significant research gap remains regarding its application in the online healthcare industry, particularly in developing countries like Bangladesh. Value co-creation and its antecedents are examined in contexts like e-government [10], brand communities [11], and digital commerce [12]. While research on healthcare value co-creation through social media platforms remains limited. Furthermore, existing studies have focused on consumers' intention to co-create value rather than actual co-creation behavior, which leaves an incomplete understanding of how to convert intention into participation in co-creative behavior. Several studies have adopted the Theory of Planned Behavior (TPB) to explore behavioral intentions in service settings [13, 14]. There is a dearth of empirical evidence that examines online health value co-creation behavior in a social media context using this theory.

Additionally, prior studies overlooked the antecedents that outline the elements of TPB in this context- especially how trust and health consciousness impact attitudes, how self-efficacy and facilitating conditions contribute to perceived behavioral control, and how electronic word-of-mouth (EWOM) affects subjective norms. Researchers empirically investigate how these variables influence an individual's willingness and ability to participate in value co-creation within an online healthcare context. Furthermore, most studies have been conducted primarily in the

context of developed countries, where digital literacy and confidence in online healthcare tend to be significantly higher, limiting the generalizability of findings to emerging economies such as Bangladesh. Considering these limitations, there is a strong need for a comprehensive model that combines psychological, social, and technological determinants to explain patients' value co-creation behavior in online healthcare through the lens of the Theory of Planned Behavior.

The contribution of these research findings can be explained both theoretically and practically. The current study enriches the theory of planned behavior by incorporating trust, health consciousness, EWOM, and facilitating conditions as antecedents, thereby advancing behavioral theories in digital healthcare co-creation, which has emerged as a crucial component of contemporary service management. It also provides empirical evidence from a developing economy, highlighting how social, psychological, and technological factors interplay to shape online health engagement. Practically, the outcomes generate valuable insights that can aid Bangladeshi policymakers, healthcare providers, and digital platform creators in designing more user-focused, inclusive, and trustworthy online health ecosystems. By fostering value co-creation through social media, this study ultimately contributes to enhancing patient empowerment, improving healthcare access, and driving service innovation in developing countries.

This paper is organized into several sections. First, the literature review is presented, drawing on previous research to establish the study's foundation. Second, the conceptual framework and hypotheses are developed based on theoretical insights. Third, the research methodology is outlined, detailing the approach adopted in this study. Fourth, the analysis and interpretation of results are provided, offering insights into the findings. Finally, the discussion, conclusion, and implications section highlights the key outcomes of the research and suggests directions for future studies.

## 2. Literature Review and Hypotheses Development

### *2.1. Underpinning Theory and Its Contextualization with the Study*

The study has been conceptualized based on the Theory of Planned Behavior [15] as its foundational theoretical framework to explain patients' value co-creation behavior (VCB) in online health service contexts. The TPB posits that an individual's behavior is shaped by three core factors: attitude toward the behavior, subjective norms, and perceived behavioral control (PBC). In extension to this logic, the present study integrates additional relevant constructs—trust, health consciousness, EWOM (electronic word-of-mouth), self-efficacy, and facilitating conditions—as antecedents of the TPB's core components to capture the unique dynamics of online health platforms. Although the original Theory of Planned Behavior [15] posits behavioral intention as the immediate antecedent of actual behavior, this study directly models Value Co-Creation Behavior (VCB) as the dependent variable. Since VCB represents patients' self-reported actual engagement rather than future intention, the attitudinal, normative, and control constructs are hypothesized to influence behavior directly. Similar adaptations of TPB have been made in prior digital health and co-creation research, e.g., [9, 16]. Where intention and behavior were conceptually inseparable.

Although the TPB provides a robust foundation, critics have noted that the model's predictive capacity can be improved by incorporating additional context-specific antecedents. [17] , this study extends TPB by integrating constructs that capture the unique psychological and technological dimensions of online health service interaction.

Attitude, a psychological construct of TPB, is conceptualized as the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior [15]. It is a vital component that explain, forecast and measure individuals' intention to be involved in particular behavior. When individuals show more favorable attitude toward a particular behavior, they tend to have a firm intention to perform that behavior. In the current study, the patients' intention to co-create value is dependent on their attitude formation. Further, the inclusion of trust and health consciousness acknowledges patients' evaluative and motivational factors that influence attitudes. Another element of TPB is subjective norms, which is conceptualized as the perceived social pressure experienced by any individual either to engage in or to refrain from a specific behavior [15] . According to TPB subjective norms influence individuals' intention toward a particular behavior. And the last component of TPB is the perceived behavioral control that is described as the ease or difficulty an individual experiences in engaging a behavior [15]. In this study, EWOM captures the digital social influence that shapes the subjective norms of patients, while self-efficacy and facilitating conditions expand the understanding of control perceptions in technologically mediated settings. Such extensions align with prior recommendations for contextually adapting TPB [18] to enhance its explanatory power.

By incorporating these antecedents, the model not only adheres to the theoretical logic of TPB but also contextualizes it within the rapidly evolving landscape of digital health services, where behavior is shaped by technology, trust, and online social interaction in different social media and platforms. Literature surveys provide strong empirical backing for such an extension of TPB in the health and technology context. A study [19] proved that trust and perceived credibility significantly influence attitudes and behavioral intentions in online medical consultations. In a similar vein, [20] explained how patients' health consciousness and EWOM significantly impact patients' engagement with telemedicine services through attitudinal and normative pathways. Furthermore, self-efficacy and facilitating conditions have been found to be influential factors to enhance PBC's predictive validity. [21] in technology acceptance literature. Thus, the extended TPB framework adopted in this study provides a comprehensive and empirically validated model to explain patients' value co-creation behavior in digital healthcare settings.

### *2.2. Defining Value Co-creation Behavior in the Context of Online Health Service*

The concept of value co-creation has gained prominence in healthcare literature in recent times. It is generally assumed that values can be created when customers actively engage with the organization and its key stakeholders, rather than simply remaining a passive audience [22, 23, 24]. The service-dominant (SD) logic, as asserted by [25] posits that customers become co-creators of value through engaging in dialogue and interaction activities with key stakeholders. Operant resources (i.e., nonphysical resources such as information, skills, and ideas) can be produced in this co-creation process [26]. In this way, Web 2.0 and social media have altered interactions from monadic to dyadic to a network of relationships where value is co-created by multiple individuals [27]. Online communities and mobile applications are all examples of social media platforms (e.g., Facebook, Twitter, and LinkedIn).

In the context of healthcare, value co-creation occurs when patients collaborate with other members of the value chain, such as physicians, other patients, family members, friends, and the broader community [28]. Using social media and web-based technology, the parties share

information and knowledge and utilize such opportunities across borders, time, and space. According to [29, 30, 31], in the case of online health care, two major types of value are generated, termed as cure and care-related value. Cure-related value is created when patients use web platforms to get guidance related to the solution of their problem. When patients become better informed about their conditions, they make better decisions about their treatment that help to improve their health issues [32]. Value co-creation related to care provide emotional support and empathy to the patients in times of stress, anxiety after diagnosis of life-threatening disease. Patients share their stories that ease their burden and encourage others to cope with such situations on online platforms [33]. Social media platforms act as interactive spaces where patients co-produce informational and emotional value with healthcare professionals and other users through communication, trust, and collective learning [7, 34]. They are also willing to share information and interact with service providers closely, which ultimately create an intention to co-create value. Constructive feedback and recommendations from customers can help online health care providers improve the service. In the case of digital banking, [35] Expressed that customers' positive feedback about the online banking service helps them in service improvements and introduces new services. Therefore, co-creation of value has created a new paradigm in online healthcare platform.

### *2.3. Hypothesis Development*

#### 2.3.1. Relationship between Trust and Attitude

In a volatile online setting, trust is considered a key antecedent that ensures the sustainability of business through effective online transactions and communication. It is defined as the confidence that customers exhibit in the integrity and reliability of online service providers. In developing a trustworthy relationship, privacy and security play a key role. It also plays a crucial role in influencing the behavior of the end customer. On the other hand, attitude is a core construct of TPB that explains the evaluation of an individual's behavior as favorable or unfavorable [15]. It helps consumers ease vulnerabilities in the online environment that result in changes in their online behavior [36]. With the rise of online healthcare services in recent years, risks such as privacy concerns, transaction-related risks, and a lack of physical interaction appear. So, building a trustworthy relationship is necessary because perceived risks negatively correlate with consumers' attitude towards adoption of online health care service [37]. Thereby, creating a user-friendly platform. [38], sharing reliable information [39] and interact quickly and regularly can be considered as good strategies made by the online health care system that influence consumers' trust. Consumers also trust these service providers when they got good review from other patients. Physicians' competency, bedside manner, and experience also have a favorable impact on developing a trustworthy relationship [40, 41]. When customers feel that the health care provider are trustworthy, they evaluate the behavior as favorable [15] which means develop a positive attitude about them. Members' trust in online healthcare services significantly impacts their attitudes through recommendations. People are less likely to engage in social interactions when they lack confidence in their relationships. Thus, we can hypothesize-

**Hypothesis 1**: Trust in online health and social media has a significant and positive influence on users' attitudes.

#### 2.3.2. Relationship between Health Consciousness and Attitude

Concerned about their health, consumers nowadays are involved in more health-conscious behavior, which ultimately improves the quality of life [42]. Health consciousness is conceptualized as the degree to which people are involved in managing and participating in health actions [43]. It is the psychological tendency that influences consumers to adopt healthy behavior [44]. Health-conscious consumers are concerned about their well-being and attempt to improve and preserve it through motivating themselves to be healthy, maintaining healthy habits, and taking personal responsibility to remain healthy [42]. These individuals are concerned about and actively engage in health-promoting behavior [44]. Therefore, an understanding of health consciousness is linked to health behavior [45]. Individuals with a strong sense of health consciousness are more likely to eat organic and nutritious meals [42]. And seek out health-related information, such as health-related news from TV shows and publications [46]. According to [47], many personal health behaviors are the outcome of attitudes. In this line, [48] Identified that health consciousness has been linked to consumers' positive attitude toward physical activity. The concept has also been linked to organic food attitudes, intentions, and purchases [49]. Therefore, we can hypothesize-

**Hypothesis 2**: Health consciousness has a positive and significant influence on users' attitudes towards online health services.

2.3.3. Relationship between EWOM and Subjective Norms

With the advancement of technology, online platforms have created a new opportunity for companies to gather customers' opinions. Technologies such as the internet, social media, and the increasing popularity of mobile devices have facilitated electronic word of mouth (EWOM) [47]. It is referred to as the opinion or statement made by consumers about a product or service using diverse online platforms. Marketers are now using EWOM as a new communication tool to satisfy consumer needs [50]. Furthermore, [51] explained that customers can communicate on social media anonymously or by disclosing their name. Consumers are influenced by the e-WOM of their peers and experts who seem important for them [52]. In the online healthcare industry, the sharing of opinions, reviews, and recommendations using social media about healthcare services is considered as electronic word-of-mouth (EWOM) [51, 52]. In the tourism context, e-WOM has a positive impact on subjective norms [53], which suggests that when peers support individuals, they can select the destination they wish to visit and engage in activities according to their expectations. Subjective norm refers to the perceived social pressure to perform or not perform a behavior by an individual [15]. A study by [54] found a positive relationship between e-WOM and social norms. In the same line, [55] explored a significant association between EWOM and subjective norms in luxury hotel industry context. In online healthcare services, when peers and other experts support patients or their family members, they develop a positive intention to receive the online service. Other virtual communities, organizations, and pages for online health also assist users in receiving information, providing feedback, and reviewing health services. This encourages people to decide whether they want to use these platforms or not. EWOM information can impact the group norm by making visitors who are active on social media platforms and who read online reviews of a healthcare service on social media more likely to obtain online healthcare. So, we can hypothesize -

**Hypothesis 3**: EWOM has a positive and significant influence on users' subjective norms to value co-creation behavior.

2.3.4. Relationship between Facilitating Conditions (FC) and Perceived Behavioral Control (PBC)

In an online setting, facilitating conditions play a pivotal role in deciding consumers' behavior. Facilitating conditions are the availability of resources and supports required to carry out a behavior [56]. These external factors make it easier for individuals to perform a behavior [57] . The presence of technological and organizational infrastructure acts as facilitating conditions to support the use of an information system in more detail [58]. Reliable internet access, compatible devices, technical support, and user-friendly digital platforms are some of the requirements that ensure facilitating conditions in online healthcare service [59]. A study [60] underscored the overlap between facilitating conditions and perceived behavioral control. [15] defines perceived behavioral control as "the perceived ease or difficulty of performing the behavior, p.188". In the realm of online healthcare, research has shown that sufficient facilitating conditions greatly enhance users' confidence and sense of perceived control, which results in more robust behavioral intentions and increased actual use of e-health platforms [61, 62]. On the other hand, inadequate infrastructure or insufficient technical assistance diminishes perceived behavioral control, dissuading patients from participating in online consultations or utilizing health apps. Therefore, within digital healthcare settings, facilitating conditions serve as an external support that bolsters perceived behavioral control, subsequently promoting the intention and behavior towards embracing digital health services. Consequently, we can propose the following hypothesis—

**Hypothesis 4**: The Facilitating condition has a positive and significant influence on users perceived behavioral control.

2.3.5. Relationship between Self-efficacy (SE) and Perceived Behavioral Control (PBC)

The concept of self-efficacy refers to a person's internal ability to engage in preventive activity [63] Self-efficacy is a measure of a person's belief in their ability to accomplish a task. Self-efficacy in the health domain refers to an individual's impression of their ability to engage in healthy activity [64]. In case of e-healthcare service, self-efficacy and perceived behavioral control (PBC) are key psychological elements that affect patients' willingness to adopt and consistently utilize digital health technologies. Research indicates that self-efficacy plays a significant role in shaping PBC by boosting patients' perceived ability and confidence in navigating digital health platforms. When patients are confident in their digital competency and comprehension, they feel a greater sense of control over participating in health-related online activities [65]. Consequently, increased PBC enhances their intention to both use and persist in utilizing online healthcare services [62]. Therefore, in the context of online healthcare, self-efficacy acts as an internal determinant influencing perceived behavioral control, which collectively affects behavioral intention and actual technology acceptance [66]. Hence, we can hypothesize-

**Hypothesis 5**: Self-efficacy has a positive and significant influence on users' perceived behavioral control.

2.3.6. Relationship between Attitude and VCB

Attitude is a good predictor for behavioral intention [67]. A person's positive attitude toward particular goods or behaviors boosts their desire to engage in that conduct [15]. Attitude is measured as a function of key beliefs, which can be influenced by secondary data, inference, or observation [68]. It is noted by [69] that issues such as the credibility and reliability of online information are

crucial. If individuals can access and share online health information easily, they are more likely to adopt online health care services [70]. A study [71] explained that when consumers establish a positive attitude toward co-creation through social media, they may be motivated to start a firm intention to put their co-creation beliefs into action. So, we can hypothesize -

**Hypothesis 6:** Attitude has a positive and significant relationship with users' intention to value co-create.

#### 2.3.7. Relationship between Subjective Norms and VCB

Subjective norm is another component of the TPB model that influences behavioral intention. Subjective Norms are people's perceptions of how significant others judge their actions, resulting in societal pressure to sanction specific behavior [17]. A person's sense of social pressure from influential persons to engage or not engage in a behavior is referred to as a subjective norm [72]. The term "subjective norm" is used in the literature to refer to all types of social influence and normative expectations [73]. Throughout the co-creation process, customer interactions and value co-creation take place in a social context that fosters relationships and creates social pressure. So, we can hypothesize -

**Hypothesis 7:** Subjective has a positive and significant relationship with users' intention to value co-create.

#### 2.3.8. Relationship between Perceived Behavioral Control and VCB

Perceived behavioral control refers to an individual's conviction that they are capable of doing the activity. [74] explained Perceived behavioral control is the sense of how easy or difficult it is to do an action. The ability to exert control over an item, as well as the object's inherent controllability, is referred to as perceived behavioral control [75]. Furthermore, research suggests that when consumers have more autonomy over their resource use or have less interference with co-creation, they will engage in more co-creation [71, 76]; So, we can hypothesize -

**Hypothesis 8:** Perceived behavioral has a positive and significant relationship with users' intention to value co-create.

### *2.4. Hypotheses for Mediator*

The present study examines the antecedents of Value Co-creation Behaviour (VCB) in the context of online health services through the lens of the Theory of Planned Behaviour (TPB). The TPB posits that behavioural intentions, and consequently actual behaviours, are influenced by attitudes, subjective norms, and perceived behavioural control [15]. In online health service contexts, these constructs have been shown to shape patient engagement and participatory behaviours significantly, including value co-creation activities such as sharing health information, providing feedback, and recommending services to others [66, 77]. The present research focuses on the mediating role of key TPB constructs—attitude, perceived behavioral control, and subjective norms—in the relationship between individual antecedents and VCB.

#### 2.4.1. Mediating Role of Attitude

When individuals exhibit health consciousness in their behaviour, they recognize online health services as an essential tool in addressing their health-related issues and cultivating more favourable

attitudes toward using these services. Earlier research [78] They have identified that health-conscious patients are more active in seeking information, adhering to treatment recommendations, and contributing to healthcare decisions. Individuals' positive attitude toward using a digital healthcare platform may encourage them to engage actively and exhibit co-creation behaviour. For instance, patients who have favourable attitudes are more likely to provide positive feedback, share personal health information accurately, and collaborate well with healthcare providers [79].

To establish a relationship among health consciousness, attitude, and value co-creation behaviour, researchers suggest that health consciousness does not have a direct link to value co-creation, but instead influences a person's attitude. Therefore, it is evident that attitude serves as a mediator in the relationship between health consciousness and value co-creation behaviour. This aligns with the Theory of Planned Behaviour (TPB), which suggests that attitudes partially or fully mediate the impact of individual predispositions on behaviour. Therefore, we can hypothesize-

**Hypothesis 9:** Attitude mediates the relationship between health consciousness and value co-creation.

In the realm of digital health, establishing trust poses challenges due to privacy issues, the risk of misinformation, and the absence of personal connections in online interactions [80]. Individuals' trust in the online platform may lead to positive evaluation, fostering a favourable attitude and engagement in co-creative activities.

Empirical studies in the online service context highlight that trust is a strong predictor of attitude formation. For example, [81] demonstrates that trust improves users' positive perceptions of service quality and reliability, which subsequently encourages them to participate in value-generating behaviours actively. This process suggests that trust fosters co-creation through attitude, rather than directly influencing behaviour. Trust instils confidence and positive evaluations, which in turn drive participatory engagement in online health services. Therefore, we can hypothesize-

**Hypothesis 10:** Attitude mediates the relationship between trust and value co-creation.

#### 2.4.2. Mediating Role of Perceived Behavioral Control

The availability of facilitating conditions is recognized as a crucial factor that determines the actual behaviour in the online environment. In online healthcare platforms, facilitating conditions can include user-friendly interfaces, availability of technical assistance, reliable internet connectivity, and access to relevant information. These conditions are critically determining the perceived behavioral control (PBC), which reflects the individual's belief in the perceived ease or difficulty in performing a specific behaviour [15].

According to [82] when patients perceive strong facilitating conditions, they tend to feel more confident in their ability to engage in online health-related behaviours, such as value co-creation. Sufficient access to resources and support indirectly boosts co-creation behaviour through perceived control. This aligns with prior findings [81] that indicate individuals who perceive greater control over the use of technology are more inclined to participate actively and responsibly in online services [83]. Hence, we can hypothesize-

**Hypothesis 11:** Perceived behavioral control mediates the relationship between facilitating conditions and value co-creation.

Self-efficacy in online services refers to the confidence that patients have in navigating digital platforms to manage their health issues, find information, or interact with healthcare providers. Individuals with high self-efficacy are more likely to feel a sense of control over their online activities (PBC), a vital element for participating in co-creation efforts. Earlier studies by [84], [85] Showed that self-efficacy strengthens the perceived ability to engage on online health behaviours, resulting in greater involvement in value co-creation. Moreover, self-efficacy enhances co-creation behaviours indirectly through PBC, in accordance with the principles of the Theory of Planned Behaviour (TPB). Thus, we can hypothesize-

**Hypothesis 12:** Perceived behavioral control mediates the relationship between self-efficacy and value co-creation.

2.4.3. Mediating Role of Subjective Norms

Electronic word-of-mouth (EWOM) has an emotional impact on how patients perceive social expectations, known as subjective norms (SN), by indicating what is regarded as appropriate or desirable behavior by peers, family, or social circles. Subjective norms are a key component of the Theory of Planned Behavior (TPB), reflecting the social pressure perceived to either engage in or refrain from a particular behavior [15].

Research suggests that EWOM can significantly influence patient behavior by altering social expectations and affecting their level of engagement [86]. In the context of online health services, favorable EWOM enhances the likelihood that patients feel a social obligation to engage in co-creation activities, such as offering feedback, sharing their experiences, or endorsing services. EWOM plays a role in facilitating value co-creation through the influence of subjective norms. Hence, we can hypothesize-

**Hypothesis 13:** Subjective norms mediate the relationship between electronic word of mouth (EWOM) and value co-creation

## 3. Materials and Methods

### *3.1. Sample*

Data were collected from patients who have used online health services and are active users of different social media in Bangladesh. Following the rules of a non-probability convenience sample, the data were collected using an adopted self-administered open-ended questionnaire. Prior permission was obtained from the patient before starting the interview for data collection, and all medical information was excluded to safeguard patient privacy and confidentiality. A questionnaire was distributed to patients who had experienced online health services and had given their consent to participate in the survey. Given the study's behavioral focus, only participants with a minimum educational qualification of a Higher Secondary Certificate (HSC) and prior experience using online healthcare services were included in the final sample. This ensured that respondents possessed the necessary understanding to accurately evaluate their experiences and perceptions regarding online healthcare platforms. 607 structured, closed-ended questionnaires were distributed. Of these, 304 valid responses were received and deemed usable for analysis, yielding a satisfactory response rate of 50.1%. The survey was conducted between May 2025 and September 2025.

The sample consists of 304 respondents, of which 195 were male (64%) and 109 were female (36%). Among the respondents, 60% were between 20 and 25 years old, and the remaining 40% ranged from 26 years old and above. 152 (50%) were students, 92 (30.3%) were employees, and the remaining 60 (19.7%) were engaged in other activities. Additionally, 47.7% of the respondents were graduates, 41% held postgraduate degrees, and 11% were undergraduates.

### *3.2. Questionnaire Design and Pilot Testing*

The questionnaire was developed to measure respondents' perceptions and behavioral intentions toward online health value co-creation in social media. Each construct was measured using multiple items adapted from prior validated studies to ensure both reliability and content validity. Specifically, Trust was adapted from [87]; Health Consciousness from Rama Jayanti et al. (1998) and Marsall; Electronic Word of Mouth (eWOM) from [88]; Self-Efficacy from [89]; and Facilitating Condition from [82]. Moreover, Attitude, Subjective Norms, and Perceived Behavioral Control were adapted from [90] while Intention to Value Co-Create was drawn from [85, 91] The adaptation process involved rewording the items to fit the context of online health services and social media-based value co-creation. All constructs were measured reflectively, and respondents indicated their level of agreement with each statement based on their individual perceptions. The scale was chosen for its simplicity, clarity, and proven robustness in measuring behavioral intentions across various technology and service contexts.

### *3.3. Data Analysis Methods and Tools*

The study utilized IBM SPSS (version 26) to analyse the demographic variables and SmartPLS 4 to conduct partial least squares structural equation modelling (PLS-SEM), examining the proposed model. The PLS-SEM analysis was conducted in two steps, where the authors first assessed the measurement model (outer model) and then the structural model (inner model). The outer model was evaluated to confirm the reliability and validity of the data before testing the hypotheses. The model comprised five reflective constructs: Altruistic Values, Biospheric Values, Hedonic Values, Moral Norms, Perceived Behavioral Control, and Energy-Saving Behaviour. The construct reliability and convergent validity for each construct were assessed through outer loading, Cronbach's alpha (CA), composite reliability (CR), and the average variance extracted (AVE). For CA and CR, the cutoff value is 0.70, and for AVE, 0.50 [92, 93]. Items were kept or deducted in the model based on these cutoff values. However, in some cases, the researchers kept some low-loading items in the model, as removing them did not improve the respective construct's CR and AVE [92, 93].

Furthermore, authors applied the Fornell-Larcker criterion to ensure discriminant validity [94] .The Fornell-Larcker criterion compares the square root of each construct's Average Variance Extracted (diagonal positions) and the correlations of the construct with every other construct (off-diagonal positions). The square root of each construct's AVE should be larger than all correlations between the respective construct and other constructs.

In the structural model, the model's explanatory power was assessed through ($f^2$) and ($R^2$) values for key relationships. The $f^2$ values indicate the effect size of exogenous constructs on the endogenous constructs, while the other indicators, such as $R^2$, present predictive relevance and accuracy [95]. Moreover, the path analysis results of eight hypotheses of the structural model

included means, standard deviations, path coefficients, t-statistics, and p-values. Hypotheses were accepted or rejected based on these values.

## 4. Results

### *4.1. The Assessment of Measurement Model (Outer Model)*

**Table 1** presents the results of construct reliability and convergent validity for all latent variables in the model. The outer loadings of all items ranged from 0.720 to 0.943, exceeding the acceptable threshold of 0.70 [94], indicating that the indicators effectively represent their corresponding constructs. The Cronbach's Alpha (CA) values ranged from 0.721 to 0.868, while the Composite Reliability (CR) values varied between 0.839 and 0.904, both of which surpass the recommended cutoff value of 0.70 [94]. These results confirm good internal consistency and reliability, and they suggest that the measurement items are stable and consistent across constructs.

**Table 1.** Psychometric Properties (Measurement Model).

| Constructs | Items | Item Loading | CA | CR | AVE | VIF |
|---|---|---|---|---|---|---|
| **Attitude** | ATT1 | 0.814 | 0.757 | 0.860 | 0.673 | 1.63 |
| | ATT2 | 0.787 | | | | 1.51 |
| | ATT3 | 0.858 | | | | 1.46 |
| **E-WOM** | EWOM1 | 0.789 | 0.747 | 0.839 | 0.567 | 1.45 |
| | EWOM2 | 0.763 | | | | 1.56 |
| | EWOM3 | 0.720 | | | | 1.39 |
| | EWOM4 | 0.738 | | | | 1.46 |
| **Facilitating condition** | FC1 | 0.758 | 0.806 | 0.891 | 0.737 | 1.15 |
| | FC2 | 0.943 | | | | 1.23 |
| | FC3 | 0.943 | | | | 1.26 |
| **Health Consciousness** | HC1 | 0.834 | 0.721 | 0.843 | 0.642 | 1.51 |
| | HC2 | 0.809 | | | | 1.44 |
| | HC3 | 0.758 | | | | 1.33 |
| **Perceived Behavioral Control** | PBC1 | 0.871 | 0.788 | 0.876 | 0.702 | 1.85 |
| | PBC2 | 0.784 | | | | 1.47 |
| | PBC3 | 0.857 | | | | 1.78 |
| **Self-efficacy** | SE1 | 0.755 | 0.759 | 0.861 | 0.675 | 1.36 |
| | SE2 | 0.858 | | | | 1.70 |
| | SE3 | 0.848 | | | | 1.71 |
| **Subjective Norms** | SN1 | 0.770 | 0.761 | 0.863 | 0.678 | 1.37 |
| | SN2 | 0.836 | | | | 1.67 |
| | SN3 | 0.861 | | | | 1.76 |
| **Trust** | Trust1 | 0.825 | 0.763 | 0.863 | 0.678 | 1.49 |
| | Trust2 | 0.843 | | | | 1.65 |
| | Trust3 | 0.801 | | | | 1.52 |
| **Value Cocreation Behavior** | VCCB1 | 0.817 | 0.868 | 0.904 | 0.654 | 2.05 |
| | VCCB2 | 0.821 | | | | 2.07 |
| | VCCB3 | 0.799 | | | | 2.03 |
| | VCCB4 | 0.816 | | | | 2.11 |
| | VCCB5 | 0.791 | | | | 1.81 |

The Average Variance Extracted (AVE) values ranged from 0.567 to 0.737, which are above the minimum requirement of 0.50, confirming adequate convergent validity. This indicates that each construct explains more than half of the variance of its indicators. Furthermore, all Variance Inflation Factor (VIF) values were below 3.3, ranging from 1.15 to 2.11, which indicates that there is no

multicollinearity issue [95]. Overall, these results verify that the measurement model achieved satisfactory levels of reliability, internal consistency, and convergent validity, ensuring its suitability for further structural analysis.

**Table 2.** Fornell-Larcker Criterion.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| **Attitude** | 0.820 | | | | | | | | |
| **EWOM** | 0.590 | 0.753 | | | | | | | |
| **Facilitating Condition** | 0.695 | 0.641 | 0.859 | | | | | | |
| **Health Consciousness** | 0.553 | 0.680 | 0.563 | 0.801 | | | | | |
| **Perceived Behavioral Control** | 0.668 | 0.629 | 0.626 | 0.578 | 0.838 | | | | |
| **Self-efficacy** | 0.591 | 0.679 | 0.639 | 0.566 | 0.543 | 0.822 | | | |
| **Subjective Norms** | 0.636 | 0.615 | 0.692 | 0.606 | 0.680 | 0.610 | 0.823 | | |
| **Trust** | 0.547 | 0.708 | 0.511 | 0.654 | 0.545 | 0.467 | 0.554 | 0.823 | |
| **Value Cocreation Behaviour** | 0.776 | 0.670 | 0.735 | 0.610 | 0.826 | 0.596 | 0.710 | 0.596 | 0.809 |

**Table 2** presents the results of the Fornell–Larcker criterion used to assess discriminant validity among the constructs. The square roots of the AVE values (shown on the diagonal in bold) are all higher than the corresponding inter-construct correlations, confirming that each construct shares more variance with its own indicators than with other constructs [96].

*4.2. The Structural Model (Inner Model)*

**Table 3.** Test of Hypotheses.

| | | Test of hypotheses | | | | Explanatory Power of the Model | | |
|---|---|---|---|---|---|---|---|---|
| | | **Beta Value** | **SD** | **T value** | **P Values** | **F squared** | **$R^2$** | |
| H-1 | TR → ATT | 0.324 | 0.082 | 3.970 | 0.000 | 0.094 | Attitude | 0.361 |
| H-2 | HC → ATT | 0.341 | 0.072 | 4.715 | 0.000 | 0.105 | PCB | 0.423 |
| H-3 | EWM → SN | 0.615 | 0.049 | 12.554 | 0.000 | 0.609 | SN | 0.377 |
| H-4 | FC → PBC | 0.472 | 0.065 | 7.296 | 0.000 | 0.230 | VCB | 0.783 |
| H-5 | SE → PBC | 0.241 | 0.069 | 3.505 | 0.000 | 0.060 | | |
| H-6 | ATT → VCB | 0.352 | 0.052 | 6.809 | 0.000 | 0.284 | | |
| H-7 | SN → VCB | 0.156 | 0.049 | 3.181 | 0.002 | 0.054 | | |
| H-8 | PBC → VCB | 0.485 | 0.061 | 7.913 | 0.000 | 0.485 | | |

The results of the structural model, presented in Table 3 and Figure 1, indicate that all hypothesized relationships are statistically significant, confirming the proposed theoretical associations. Trust has a significant positive effect on Attitude ($\beta = 0.324$, $t = 3.970$, $p = 0.000$), while Health Consciousness also exerts a strong influence on Attitude ($\beta = 0.341$, $t = 4.715$, $p = 0.000$). EWOM significantly influences Subjective Norms ($\beta = 0.615$, $t = 12.554$, $p = 0.000$), suggesting that online communications shape individuals' social perceptions. Both the Facilitating Condition ($\beta = 0.472$, $t = 7.296$, $p < 0.001$) and Self-Efficacy ($\beta = 0.241$, $t = 3.505$, $p < 0.001$) have a positive effect on Perceived Behavioral Control, indicating that supportive conditions and individual confidence enhance perceptions of control. Moreover, Attitude ($\beta = 0.352$, $t = 6.809$, $p = 0.000$), Subjective Norms ($\beta = 0.156$, $t = 3.181$, $p = 0.002$), and Perceived Behavioral Control ($\beta = 0.485$, $t = 7.913$, $p = 0.000$)

significantly predict Value Co-Creation Behavior, confirming all proposed hypotheses and validating the conceptual framework.

**Table 3** also shows the value to explain explanatory power of the model. The $R^2$ values demonstrate strong explanatory power across the endogenous constructs. Attitude accounts for 36.1% of the variance explained by Trust and Health Consciousness ($R^2$ = 0.361), while Perceived Behavioral Control records 42.3% variance explained by Facilitating Condition and Self-Efficacy ($R^2$ = 0.423). Subjective Norms achieve an $R^2$ of 0.377, indicating a substantial contribution from EWOM. Most notably, Value Co-Creation Behavior exhibits a high explanatory power ($R^2$ = 0.783), suggesting that Attitude, Subjective Norms, and Perceived Behavioral Control jointly explain 78.3% of its variance. The effect size ($f^2$) values range from small to large, further confirming that the predictors exert meaningful and practical effects. Collectively, these findings indicate a robust model with strong predictive relevance and theoretical support within the Theory of Planned Behavior (TPB) framework.

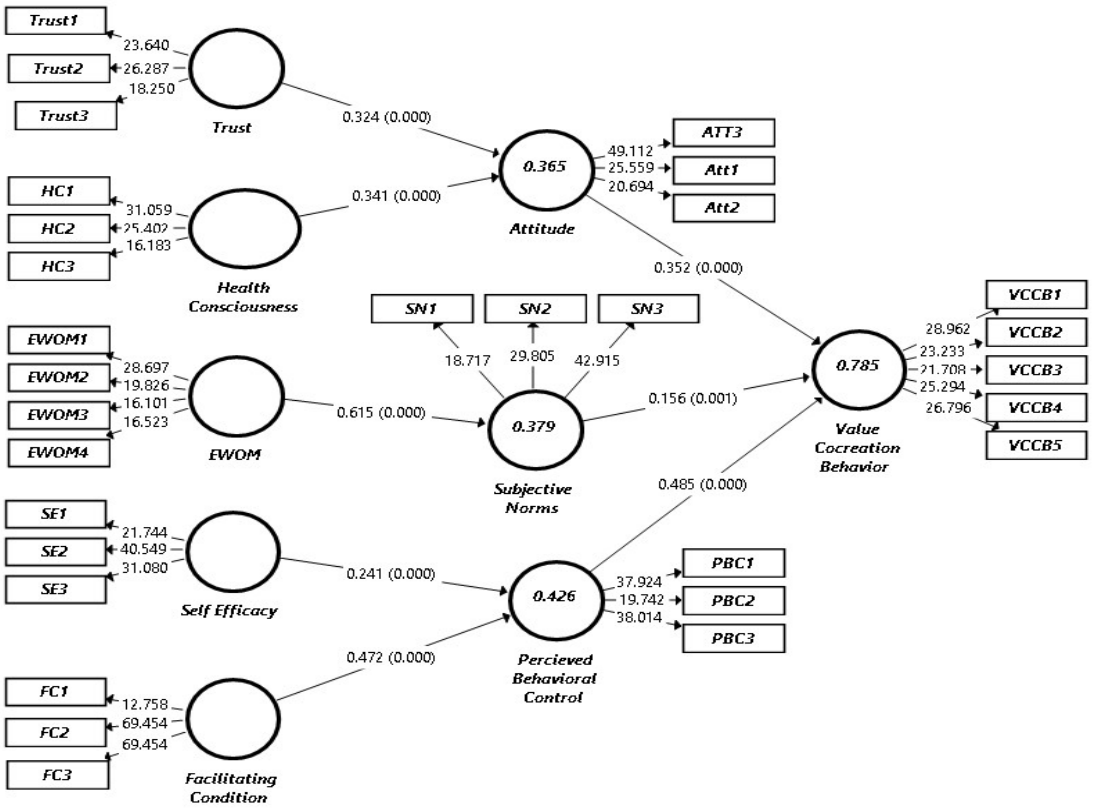


**Figure 1.** The Structural Model.

**Table 4.** Results of the Mediation Analysis.

| | | Indirect Effect (β) | SE | t-value | p-value | 95% CI Lower | 95% CI Upper | Mediation Type |
|---|---|---|---|---|---|---|---|---|
| H-9 | HC → ATT → VCB | 0.1202 | 0.0286 | 4.1955 | 0.000 | 0.0711 | 0.1801 | Full Mediation |
| H-10 | TR → ATT → VCB | 0.1140 | 0.0361 | 3.1575 | 0.001 | 0.0450 | 0.1920 | Full Mediation |
| H-11 | FC → PBC → VCB | 0.2288 | 0.0398 | 5.7534 | 0.000 | 0.1554 | 0.3161 | Full Mediation |
| H-12 | SE → PBC → VCB | 0.1169 | 0.0335 | 3.4864 | 0.000 | 0.0539 | 0.1876 | Full Mediation |
| H-13 | EWOM → SN → VCB | 0.0960 | 0.0332 | 2.8933 | 0.003 | 0.0362 | 0.1602 | Full Mediation |

**Table 4** presents the results of the mediation analysis, which examined the indirect effects of exogenous variables on Value Co-creation Behaviour (VCB) through their respective mediators. All the indirect paths were found to be statistically significant ($p < 0.01$), with t-values ranging from 2.89 to 5.75, and their 95% confidence intervals did not include zero, confirming the presence of mediation effects. Specifically, Health Consciousness (HC) and Trust (TR) exerted significant indirect effects on VCB through Attitude (ATT) ($\beta = 0.1202$, $p < 0.001$; $\beta = 0.1140$, $p < 0.01$, respectively). Similarly, Facilitating Condition (FC) and Self-Efficacy (SE) influenced VCB indirectly via Perceived Behavioral Control (PBC) ($\beta = 0.2288$, $p < 0.001$; $\beta = 0.1169$, $p < 0.01$, respectively). Moreover, Electronic Word-of-Mouth (EWOM) showed a significant indirect effect on VCB through Subjective Norms (SN) ($\beta = 0.0960$, $p = 0.0039$). Since the direct effects of these independent variables on VCB were non-significant, all these relationships demonstrate complete mediation, indicating that the mediating constructs (ATT, PBC, and SN) fully transmit the effects of the predictors on Value Co-creation Behaviour.

## 5. Discussion

Drawing upon the Theory of Planned Behaviour [15]. This study has advanced the understanding of how individual factors, such as attitude, subjective norms, perceived behavioral control, and contextual factors —trust, health consciousness, EWOM, self-efficacy, and facilitating conditions —shape value cocreation behaviour within online healthcare services. The findings contribute to the marketing scholarship by explaining how cognitive, affective, and social mechanisms jointly predict patients' motivation to engage in cocreation processes. In line with the central proposition of TPB, this research reinforces that patients' evaluative attitudes centrally guide value co-creation behavior in the digital health setting, as well as their perception of social expectations and control. This outcome provides psychological ground through which users translate their beliefs into participatory value-generating actions. The integrated model concertised with health care service advances service-dominant logic in digital marketing by explaining that consumers act as co-producers of service value when empowered by both internal motivation and external support [22, 96].

From a marketing perspective, the study suggests that trust and health consciousness among patients are critical enablers in technology-enabled services, such as online or digital healthcare services. In this study, trust has emerged as a crucial cognitive determinant of co-creation behaviour through attitude. Prior studies on health contexts consistently found that trust is a strong predictor of engagement and value co-creation behaviour [97, 98]. In digital healthcare, trust reduces uncertainty and perceived risk, especially when handling sensitive patient information, which in turn fosters users' readiness to contribute content, provide feedback, or participate in collaborative decision-making [99, 100]. This study supports these findings and extends them by demonstrating that trust operates not merely as a facilitator of intention but also as a precursor to favourable attitudes, which mediate its effect on co-creation behaviour. In doing so, it confirms TPB's core argument that beliefs about outcomes shape attitudes, which in turn guide behavioral enactment. [15]. Unlike Trust, the health consciousness of the patient has been explored as a crucial factor in attitude formation that ultimately leads to value co-creation behavior. Prior studies have demonstrated that health-conscious individuals actively seek reliable information and adopt preventive measures, reinforcing the relevance of health consciousness as a motivational driver [42,

101]. Recent research confirms that health-conscious consumers are more inclined to use digital platforms for decision-making and health management [102, 103]. In this study, health consciousness influences co-creation behavior indirectly through attitudes, emphasizing that intrinsic motivation, when combined with a favourable evaluation of online engagement, can lead to active participatory behavior.

The study further affirms the social embeddedness of co-creation behavior, where subjective norms shaped by electronic word of mouth (eWOM) and social norms (SN) serve as vital social cues in forming behavioral intentions. Patients often rely on peers, online reviews, and community discussions to determine specific behaviours. Within healthcare contexts, observing peer participation fosters normative influence, encouraging users to perceive engagement as socially desirable and legitimate [104]. This finding corroborates prior digital marketing studies, confirming that online social interactions serve as critical mechanisms for guiding behaviour, especially when the behaviour involves collaborative, value-generating actions in sensitive domains such as health.

Furthermore, the study confirms that facilitating conditions and self-efficacy jointly strengthen perceived behavioral control in online healthcare services, ultimately impacting value co-creation behavior, which is consistent with previous studies [105]. Facilitating conditions and self-efficacy are both crucial factors of PBC and VCB, whereas FC ensures platform accessibility, technological support, and system usability, providing the external scaffolding necessary for consumers to engage confidently in co-creation activities [90]. Simultaneously, self-efficacy enhances users perceived capability to contribute effectively to value co-creation processes. Recent evidence in digital healthcare highlights that both technological infrastructure and users' perceived digital competence significantly influence engagement in online communities [85, 106]. Collectively, these factors demonstrate that participatory behaviour is contingent upon both individual capability and environmental support, reflecting a dual cognitive-motivational mechanism within TPB.

The attitudinal dimension plays a central mediating role in the model, consistent with TPB's proposition that beliefs about outcomes shape evaluative judgments, which subsequently influence behaviour [15]. Positive attitudes toward engagement in online healthcare communities serve as a psychological driver that translates intrinsic motivation, trust, and health consciousness into concrete co-creation actions. Similarly, subjective norms and perceived behavioral control mediate the effects of social and technological factors, indicating that the TPB framework's motivational mechanisms remain robust in digital health contexts. This integration of belief structures, normative influence, and control perceptions provides a nuanced understanding of how cognitive, affective, and social factors interact to shape co-creation behaviour, offering a more holistic view than models focused solely on behavioral intention or technological adoption.

By demonstrating the full mediation effects of attitudes, subjective norms, and perceived behavioral control, the study underscores that consumer engagement in online healthcare services is fundamentally a psychosocial process. External beliefs—whether cognitive (trust, health consciousness), social (eWOM), or technological (facilitating conditions, self-efficacy)—do not directly lead to co-creation behaviour but operate through these psychological mechanisms. This finding confirms and extends prior studies in online co-creation and e-health contexts [76, 106, 107] that highlight the critical importance of mediating processes in translating antecedent conditions into observable participatory actions.

Overall, the study provides empirical support for the TPB framework in digital healthcare, demonstrating that co-creation is shaped by an integrated system of cognitive, affective, social, and environmental factors. The results reinforce that users' engagement is multifaceted and contextually embedded, combining personal beliefs, normative expectations, and enabling conditions to drive value co-creation behaviour. This insight contributes to marketing scholarship by illustrating how consumer behaviour theories can be extended and operationalized in digital service ecosystems.

## 6. Implications

### *6.1. Theoretical Implications*

The study contributes to the body of marketing scholarship literature. First, it has extended TPB by incorporating five additional factors, including trust, health consciousness, self-efficacy, EWOM, and facilitating conditions relevant to digital healthcare. This addition suggests that Value Cocreation Behavior cannot be explained solely through attitudes, subjective norms, and perceived behavioral control, especially in digital service settings where technology, social networks, and health awareness intersect. Thus, the study expands the relevance of TPB to service-dominant logic and value co-creation research, where patients' or consumers' engagement in the co-creation process is an emerging phenomenon.

In addition, the study has clarified the mediating role of TPB's constructs, such as attitude, subjective norms, and perceived behavioral control. By demonstrating complete mediation through these constructs, the study shows empirical evidence that cognitive, social, and technological antecedents influence value co-creation behavior. Thus, the findings extend prior behavioral research by emphasizing the importance of the interaction of cognitive, social, and technological antecedents for value co-creation behavior that influence value co-creation behavior, reinforcing the theoretical relevance of TPB in complex online service ecosystems. Furthermore, the study has demonstrated that VCB is influenced by personal, social, and structural factors within the context of healthcare services. Together, the findings have extended the TPB theory and value cocreation literature through an integrated model.

### *6.2. Managerial Implications*

The study offers actionable insights for both online medical service providers and digital marketers seeking to increase consumer participation in the value co-creation process. Trust has been explored as one of the vital drives of patients' value cocreation behavior. Thus, managers adopt CRM practices, implement data management practices, ensure secure and authentic communication channels, and provide credible health content to ensure perceived reliability and trustworthiness. These measures reduce perceived risk, strengthen attitudinal alignment, and promote sustained co-creation behavior.

In addition, the health consciousness of patients has been explored as one of the crucial factors of value cocreation behavior. Managers of health care services should target health-conscious users through relevant and personalized content. Learning materials, wellness tools, and preventive guidance can strengthen intrinsic motivation, which ultimately impacts value co-creation behavior. In a similar vein, social mechanisms or social media interaction, such as peer feedback, online reviews, and discussion forums, should be leveraged to cultivate subjective norms that reinforce

participatory behavior. Managers can provide incentives to patients to share content and facilitate peer-to-peer interactions, thereby strengthening the perceived social legitimacy.

Facilitating conditions and promoting self-efficacy are critical driving factors in patients' value cocreation behavior. The healthcare platform interface and technological resources impact perceived behavioral control, which ultimately shape the co-creation behavior of patients. Managers should facilitate user interaction by reducing barriers, such as platform complexity, time constraints, or technical challenges, to maximize patient value co-creation.

## 7. Conclusions

This research enhances the understanding of value co-creation behavior within online healthcare services by incorporating the Theory of Planned Behavior (TPB) alongside contextual and technological elements. Testing the TPB model empirically, the study broadens the service-dominant logic and the digital marketing literature, demonstrating how consumers participate as co-creators of service value when supported by intrinsic motivation and external resources. These insights offer practical guidance for healthcare providers and digital marketers to develop strategies that foster trust, promote health-conscious engagement, and enhance technological infrastructure, ultimately encouraging ongoing participatory behavior and value creation in online healthcare environments.

Despite its valuable contributions, the study highlights opportunities for future researchers. Longitudinal research may examine the temporal changes in value co-creation behavior, considering the interactive effects of trust, health awareness, and social influence on customer participation. Additionally, comparative studies of various healthcare systems, cultures, and service types may demonstrate variations in the predictive strength of the Theory of Planned Behavior (TPB). Furthermore, future research may integrate novel ideas, such as digital health literacy, gamification, and artificial intelligence-driven personalization, to examine how technology-mediated engagement influences outcomes of co-creation. Experimentations can also be used to clarify how platform design and incentive structures affect participative behavior and to identify causal correlations. Ultimately, exploring the connection between co-creation behavior and service effectiveness or patient outcomes could provide a deeper understanding of the strategic significance of digital engagement initiatives in healthcare marketing and service management.

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**Appendix A: Measurement Scales**

**Trust [86]**

TR1. Online health service is trustworthy

TR2. Online health service is reliable

TR3. Online health service facilities meet my expectations.

TR4. The use of online health services provides me with emotional comfort.

TR5. Online health service facilities keep its promises to its patients.

**E-WOM [54, 53]**

WM1 Reviews from online health groups and blogs can make me aware of online health services.

WM2 I frequently gather information from online patient reviews before I take online health service

WM3 Reviews from online health groups and blogs can make me confident about my decision to take online health services.

WM4 To take reliable service from specialized doctors, I read other users' online reviews.

WM5 I frequently share my experiences with online health services on social media platforms.

**Health Consciousness [101]**

HC1 I am very self-conscious about myself and my family's health, which inspires me to share health solutions on social media.

HC2 I am generally attentive to my inner feelings to have a healthy life for my family and relatives.

HC3 I constantly examine the health-related issues of my family, friends, and relatives.

HC4 For me, living a healthy life means creating consciousness about health-related issues.

**Self-efficacy [88]**

SLF1 I am confident that I could easily operate (application/software/social media) for value co-creation of online health in a social platform on my own.

SLF2 I have the confidence to resolve difficult problems associated with online health value co-creation.

SLF3 I would feel comfortable using a social media platform to co-create value of online health.

SLF4 Overall, I am confident in co-creating value using social media about online health service.

**Facilitating condition [106, 85]**

FC1 I have the smartphone, Internet access, and social media access which I need to value co-creation of online health in social media.

FC2 I have a reliable Internet connection to share my experience in social media about online health.

FC3 For me, advances in Internet security provide a safer platform to share information about online health services.

FC4 I can get help from others when I have difficulties using online health service.

**Attitude [89]**

ATT1 Co-creating customer value of online health service through social media is a good idea.

ATT2 I like the idea of co-creating the value of online health services on social media platforms.

ATT3 Co-creating the value of an online health service would be pleasant.

ATT4 Co-creating the value of an online health service would be a superior idea than a

conventional idea.

**Subjective Norms [89]**

SN1 People who are important to me would think I should co-create the value of an online health service on social media.

SN2 My friends think that I should recommend others on social platforms to use online health services.

SN3 My family thinks that I should share information about online health services to facilitate others.

**Perceived Behavioral Control [89]**

PBC1 I am confident that I would be able to co-create value of an online health service in social platforms.

PBC2 I have the resources and knowledge to co-create the value of online health service in social platforms.

PBC3 If I want to co-create value using social media platforms, it would be easy for me.

**Value Cocreation Behavior [34]**

VCCB1 I am willing to share my experiences and suggestions using social media platforms when my friends and others want my advice on buying an online health service.

VCCB2 I am willing to dedicate time and effort to sharing my ideas and suggestions using social media platforms with the online health service to improve its products and processes.

VCCB3 The online health service creates a suitable opportunity for suggestions and ideas.

VCCB4 During the service, I could conveniently express my specific requirements in online

VCCB5 The online health service provider allowed sufficient consumer interaction using social media platforms in its business processes (product development, marketing, assisting other customers, etc.)

VCCB6 I am more likely to recommend others in social media to use online health services.

VCCB7 I like the idea of co-creating the value of online health in social media.

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