

The role of collaborative consumption in the servitization of digital service platforms

Research Article

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Abstract: This research aims to understand the digital service platform usage intention and behavior from the perspectives of technology adoption and collaborative consumption. Driven by the recent changes in consumer preferences toward non-ownership of digital products and convenience of accessing digital services, it argues that in addition to service and individual-related factors, collaboration indicating social factors (sense of belonging, sharing behavior, sense of sociability) will have a role in the adoption of servitization of the digital service platforms. It further claims that they will contribute to utilitarian, hedonic, and social value perceptions of digital service platforms so that positive value evaluations will lead to behavioral intention and actual usage behavior. It develops a model that incorporates service, individual, and collaboration-related factors and tests their relationships with value perception and hence digital service platform usage intention and behavior by structural equation modelling using a convenience sample data of 519 respondents. The results indicate that service-related factors affect utilitarian value, while collaboration indicating factors affect hedonic and social value. Overall model demonstrates that the intention to use collaborative consumption services is influenced by utilitarian, hedonic, and social value as well as individual-related factors. Furthermore, the intention to use these services leads to actual usage behavior. By linking value perception with service, consumer, and collaboration characteristics, this study draws attention toward a more comprehensive understanding of digital service adoption.

Keywords: *Collaborative consumption • Digital servitization • Service-related factors • Collaborative social factors • Digital service platforms • Technology adoption*

1. Introduction

Digital technology has enabled more collaboration and social interaction in consumption. The conventional paradigm of satisfying consumer requirements through ownership is being replaced by transitory and collaborative usage, especially after 2000s, when everything is connected (Belk, 2014). Consumer preferences are shifting from digital product ownership to digital service access (Micken et al., 2020). Collaborative consumption has replaced traditional consumption patterns, which can lead to cyclical social and economic improvements (Armouch et al., 2024). With rising urbanization and environmental concerns, sustainable business concepts are becoming

more common. Collaborative consumption is one of these models that helps and in shifting consumer preferences toward more sustainable solutions (Krastevich & Smokova, 2021). Digital technology and evolving consumer preferences have contributed to collaborative consumption. Belk (2014) mentions that sharing and collaborative consumption practices have two common dimensions: (1) “non-ownership usage” with temporary access to consumer products and services models, and (2) dependence on the internet. Customers choose access over ownership for its flexibility and reduced cost, especially in businesses with traditional ownership patterns (Sundararajan, 2016).

Servitization, another non-ownership usage paradigm, is transforming industrial and product-centric sectors. Servitization – the shift from selling commodities to offering integrated products and services – reflects a

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bigger financial value creation shift from tangible goods to value-added services (Kowalkowski et al., 2017). It helps establish long-term client relationships, reduce lifetime costs, and improve resource efficiency. It promotes product longevity, maintenance, and reuse, which fits the circular economy (Tukker, 2015).

Collaboration examines non-ownership consumption from the consumer's standpoint, while servitization examines the technology adoption of product-to-service transformation. Consumer-oriented collaborative consumption requires platforms that match supply and demand for goods sharing or rental (Sundararajan, 2016). Although their different angles, collaborative consumption and digital servitization demonstrate several shared characteristics. Both notions illustrate a significant transformation in consumer preferences and business strategy from conventional ownership to more adaptable, service and sharing-oriented access models (Baines et al., 2007; Bardhi & Eckhardt, 2012). Table 1 illustrates examples of physical and digital collaborative and technology-enabled services.

The technology acceptance model (TAM) (Davis et al., 1989) and the subsequently developed Unified Theory of Acceptance and Use of Technology (UTAUT) model (Venkatesh et al., 2003) serve as foundational frameworks for analyzing the factors influencing the adoption of specific technology. These models emphasize service-related factors but fail to incorporate the collaborative nature of digital service platforms. Additionally, a few studies (e.g., Ozturk et al., 2016; Yuan et al., 2022; Zhang et al., 2019) have examined the relationship between factors influencing adoption and value perception of these platforms as determinants of technology adoption.

In order to provide a holistic assessment of the factors behind collaborative digital service adoption, this study integrates collaboration-oriented social elements, that are sense of belonging, sharing behavior, and sense of sociability, into the technology adoption models of UTAUT and TAM. It argues that beyond service-related factors, the sharing nature of digital service platforms is another aspect that may influence the value perception of consumers,

which may lead to the usage of such platforms. It also takes into account how consumer characteristics like environmental, novelty-seeking, and anti-consumption behaviors affect the adoption of such digital services. Understanding their role may assist platforms about consumer attitudes and ethical consumption trends as society prioritizes sustainability and ethical consumption (Hamari et al., 2016; Seyfang & Haxeltine, 2012). By developing a more comprehensive model, this study aims to highlight the shift from perceiving “technology as a tool” to “a platform-as-a-service with a community-oriented perspective.”

2. Literature review

2.1 Collaborative consumption

Collaborative consumption has emerged as an important domain in modern digital marketplaces, widely characterized as “systems of organized bartering, lending, trading, gifting, and swapping” (Botsman & Rogers, 2010). Belk (2014) similarly defines it as a coordinated process that allows individuals to access or distribute resources (usually for a fee or alternative compensation) without transferring ownership. Facilitated by digital platforms, collaborative consumption is growing rapidly as online environments promote large-scale sharing behavior. Eckhardt et al. (2019) characterize the sharing economy as a socio-economic framework based on technology innovations, while Bardhi and Eckhardt (2012) define collaborative consumption as “access-based consumption,” replacing ownership with temporary access. This indicates an ongoing evolution in marketing, transitioning from permanent ownership to temporary, usage-oriented interactions (Kumar et al., 2018).

Although previous studies (e.g. Belk, 2014; Ertz et al., 2016; Klarin & Suseno, 2021; Luri Minami et al., 2021; Martin, 2016) have conceptualized, developed frameworks, and focused on economic reasons of collaborative consumption, they offer a

	B-to-B Market	B-to-C Market
Physical products/ Services	Office Buildings, Leased Cars & Equipment, Production Tools, Project-Based Head Count, Warehouses, Workspaces	Hospitality (buildings, flats, rooms, beds), Urban Mobility (cars, bikes, scooters), Consumer Goods (clothing, utility, appliances...), Warehouses, Workspaces
Digital products/ Services	Cloud services, Hosting, Ad Services	Cloud Gaming, Game Subscription, Music, Movie, E-Books

Table 1. Usage areas of collaborative digital services.

**Source: Tuik İstatistik Veri Portalı. Türkiye İstatistik Kurumu (Turkish Statistical Institute) (2023). <https://data.tuik.gov.tr/Turcat>.

Source: Authors' own research.

limited understanding of the connection between service-related attributes (e.g., convenience, cost, risk) and social and community-oriented factors (e.g., sense of belonging, sociability) in digital service platform adoption. This research specifically fills this gap by integrating these variables into a unified adoption model, providing a deeper understanding of user behavior in collaborative consumption environments such as product-service systems (PSS).

2.2 Digital servitization and PSS

Tukker (2004) defines PSS as the strategic approach to creating and delivering goods and services to meet consumer demands through an integrated presentation. According to Vargo and Lusch (2004), the PSS is a framework that primarily emphasizes the distribution of services. In traditional product purchase behavior, consumers are responsible for performance, maintenance, and recycling, whereas in PSS, suppliers maintain these duties without transferring full ownership (Baines et al., 2007).

Digital servitization transitions organizations from product-focused to service-centric business models by using digital resources (Kowalkowski et al., 2017). Paiola et al. (2021) define digital servitization as a corporate approach that prioritizes customer needs through product offerings. Apart from the benefits to organizations (e.g. energy savings, demand-based production planning, and waste reduction), servitization improves product accessibility, collaborative utilization in the eyes of the consumers (Kanath & Karaer, 2022), and promotes a circular economy and sustainability (D'Agostin et al., 2020).

Despite these developments, considerable theoretical gaps remain. Initially, prior studies on PSS adoption differentiate between service-related factors (cost, convenience, risk) and social/experiential dimensions (belonging, sociability), resulting in an absence of a holistic model that synthesizes both elements. Secondly, TAM and UTAUT fail to adequately highlight the adoption of collaborative, usage-based digital service platforms. Their focus on perceived usefulness, ease of use, and limited social influence lacks the motivations of PSS and collaborative consumption derived from shared usage, peer interaction, and community engagement. Third, although value serves as the primary criterion for consumers assessing service-based products, prior research has not connected these determinants above to utilitarian, hedonic, and social value evaluations.

This study's proposed model integrates service-related and collaboration-oriented social factors to address these gaps. The study links these antecedents to utilitarian, hedonic, and social value and examines their effects on intention and actual usage to explain digital servitization adoption.

2.3 Collaborative consumption adoption

Rai and Selnes (2019) emphasize task–technology fit and social norms for digital service adoption. An on-demand service platform adoption model by Delgosha and Hajiheydari (2020) blends complexity, enjoyment, perceived risks, and social norms to show how these factors affect user attitudes. Beyond TAM and UTAUT, a substantial body of research examines adoption through the paradigm of perceived value. Ozturk et al. (2016) demonstrate that both utilitarian and hedonic values are significant predictors of the continuous intention to utilize mobile hotel booking applications. Yuan et al. (2022) illustrate that the perceived utilitarian and hedonic value of AI assistants is influenced by accuracy, responsiveness, compatibility, anthropomorphism, and affinity. These studies collectively confirm that value perceptions are key mediators in technology adoption processes.

Another body of recent research emphasizes the significance of social value in adoption. Fernandes and Oliveira (2021) classify the determinants of digital voice assistant adoption into relational, social, and functional dimensions, indicating that social presence, social engagement, and perceived humanness are significant alongside usefulness and simplicity of use. Zhang et al. (2019) assert that in sharing-economy platforms, social and emotional aspects surpass technological or economic concerns in forecasting repurchase intention. Barnes and Mattsson (2017) demonstrate that perceived social, economic, and environmental advantages, together with enjoyment derived from a feeling of community, strongly influence collaborative consuming patterns.

Despite these discoveries, recent literature has not yet provided a holistic adoption framework that simultaneously integrates service-related factors, social collaboration motivations, and multi-dimensional value perceptions. This gap highlights the necessity for research that uniquely integrates these components to clarify adoption in digital servitization and collaborative consumption contexts. In the following, a conceptual framework that brings service-related, individual, and collaboration-related factors together in relation to value perception, and hence, digital service platform usage intention and behavior is unfolded.

2.4 Conceptual framework

Recent studies mostly adopted UTAUT and TAM to study digital service adoption, but a very limited number of them have adopted a collaborative consumption perspective. Accordingly, going beyond these models, the proposed model

below (Figure 1) incorporates collaboration indicating factors into account. In this study, there are two main groups of indicators: service-related factors (cost, access convenience, usage convenience, complexity, perceived risk, and enjoyment) and collaboration, indicating social factors (sense of belonging, sharing behavior, and sense of sociability). However, since collaboration understanding is based on sharing economy principles that lead to new types of consumers, individual-related factors that reflect new consumption characteristics (environmental concern, novelty seeking behavior, and anti-consumption) are also taken into account. In the following, the relationships among these concepts and related hypotheses are provided.

2.5 Service-related factors

2.5.1 Cost

Financial or economic factors that are defined as users' perception of cost-saving benefits through using the collaborative digital service are fundamental adoption motivations (Delgosha & Hajiheydari, 2020). Lower perceived cost increases efficiency, economic rationality, and functional usefulness (Venkatesh et al., 2003). Similarly, Barnes and Mattsson (2017) argue that financial factors are the most relevant component in collaborative consumption settings.

Affordable services ease economic stress and increase hedonic value, while high prices could negatively impact pleasure by emphasizing transactional exchange over emotional experience (Chitturi et al., 2008). In terms of social value, lower cost allows for wider involvement and recurring use, fostering social contact, sharing, and communal engagement (Barnes & Mattsson, 2017; Hamari et al., 2016). High costs may reduce accessibility and social benefits. Therefore, we propose that cost advantages influence perceived utilitarian, hedonic, and social values.

H1: Cost advantages of the collaborative digital services positively affect (a) perceived utilitarian value, (b) perceived hedonic value, and (c) perceived social value.

2.5.2 Usage convenience

Usage convenience is "predisposition to accomplish a task in the shortest possible time with the least expenditure of energy" (Moeller & Wittkowski, 2010, p. 181). User-friendly services reduce cognitive effort and task complexity, improving functional efficiency and perceived usefulness (Venkatesh et al., 2012). Hedonic value is increased by smooth, effortless interactions that encourage enjoyment and flow during service consumption (Van der Heijden, 2004; Yuan et al., 2022). Convenience significantly influences people's willingness to adopt sharing programs, as increased convenience reduces perceived barriers and

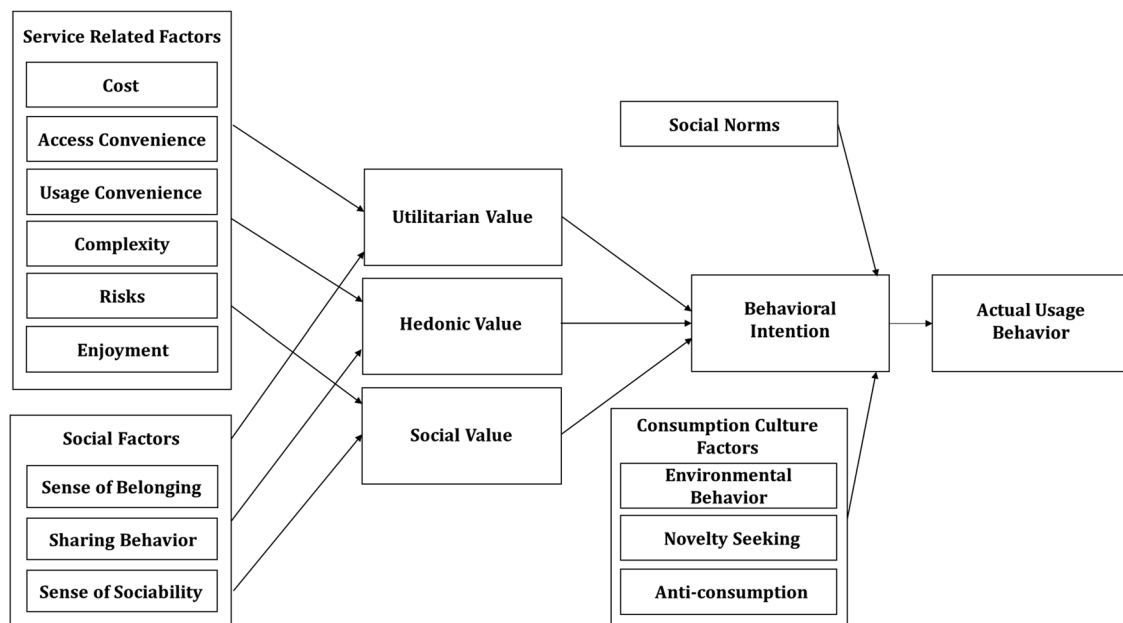


Figure 1. Theoretical model. Note: For better illustration, the arrows indicate from service-related factors and social factors to values, and from consumption culture factors to behavioral intention. However, in all hypotheses, all antecedents are specifically stated.

Source: Authors' own research.

enhances behavioral intention (Liao et al., 2024). Usage convenience also lowers participation barriers, making digital sharing and social engagement easier (Zhang et al., 2019). Therefore, we hypothesize that usage convenience influences utilitarian, hedonistic, and social values.

H2: Usage convenience of the collaborative digital services positively affects (a) perceived utilitarian value, (b) perceived hedonic value, and (c) perceived social value.

2.5.3 Access convenience

Berry et al. (2002, p. 6) define access convenience as “consumers perceived time and effort expenditures to initiate service delivery.” High access convenience (24/7 availability, many access channels, and shorter waiting time) improves efficiency and reliability, boosting perceived usefulness and job completion (Berry et al., 2002; Venkatesh et al., 2012). Access convenience also reduces uncertainty, allowing immediate and seamless involvement that boosts enjoyment and hedonic value (Seiders et al., 2007). Easy access lowers entrance barriers and encourages recurring involvement, which increases interaction frequency and felt closeness on collaborative platforms. Therefore, users could generate more social value by engaging, sharing, and coordinating more when services are available (Hamari et al., 2016; Möhlmann, 2015). Based on these, the following hypothesis is proposed:

H3: Access convenience of the collaborative digital services positively affects (a) perceived utilitarian value, (b) perceived hedonic value, and (c) perceived social value.

2.5.4 Complexity

Complexity refers to the perceived level of effort associated with comprehending and utilizing collaborative digital services. Consumers could experience a reduced feeling of usefulness due to the complex structure of inventions (Hellali & Korai, 2023). Choi (2022) has shown that smart city services’ complexity and unreliability negatively affect people’s intent to use them. Furthermore, complexity reduces hedonic value by creating anxiety and discomfort through complex interfaces and difficult learning requirements, which lowers emotional pleasure and enjoyment (Tarhini et al., 2014; van der Heijden, 2004). Complex systems could limit participation and interaction by discouraging engagement, especially among users with lower technological confidence, thereby restricting perceived social value and collaborative exchange (Hamari et al., 2016; Zhang et al., 2019). Therefore, the following hypothesis is proposed:

H4: Complexity of the collaborative digital services negatively affects (a) perceived utilitarian value, (b) perceived hedonic value, and (c) perceived social value.

2.5.5 Enjoyment

Moon and Kim (2001) define enjoyment as the pleasure people get from certain activities.

Enjoyment enhances perceptions of efficiency by improving intrinsic motivation, leading to deeper engagement and greater efficiency in task completion (Cocosila & Archer, 2010; van der Heijden, 2004). Since enjoyable and entertaining experiences produce feelings of excitement, fun, and emotional satisfaction during service use, enjoyment is most closely associated with hedonic value (Chitturi et al., 2008). Furthermore, by encouraging positive communications, social presence, and a readiness to interact with others on collaborative platforms, enjoyment positively influences social value (Fernandes & Oliveira, 2021). Thus, it is hypothesized that:

H5: Enjoyment of the collaborative digital services positively affects (a) perceived utilitarian value, (b) perceived hedonic value, and (c) perceived social value.

2.5.6 Risks

The productive use of technology is hindered by a perception of potential security threats and concerns regarding the risk of losing control over private and personal information. (Delgosha & Hajiheydari, 2020; Yang et al., 2015). Perceived risk negatively impacts hedonic value, as concerns regarding data security, service failure, or liability create anxiety and limit enjoyment during usage (van der Heijden, 2004). It negatively influences social value by inhibiting interaction and participation, especially in peer-to-peer platforms where trust in users and providers is crucial (Ertz et al., 2016; Möhlmann, 2015). Users exhibit reduced willingness to engage socially or foster a sense of community when they perceive high risk. Therefore, the hypothesis below is formulated:

H6: Risks of the collaborative digital services negatively affect (a) perceived utilitarian value, (b) perceived hedonic value, and (c) perceived social value.

2.6 Collaboration indicating social factors

2.6.1 Sense of belonging

Sense of belonging refers to how someone feels about their own involvement, acceptability, and fit in a social structure or organization, making them feel important and a part of that collective (Hagerty et al., 1992). It enhances perceived usefulness by encouraging information sharing, trust, cooperation, and a willingness to coordinate with others, thereby improving task efficiency and service outcomes (Zhang et al., 2019; Zhao et al., 2012). Also, a sense of belonging positively impacts hedonic value by fostering

positive emotions, enjoyment, and emotional comfort associated with acceptance in a user community (Fernandes & Oliveira, 2021; Ooi *et al.*, 2018). Feeling of belonging to a community significantly influences social value by promoting identification, reciprocity, and perceived social support, which are essential components of collaborative consumption experiences. Users who identify with a community tend to view their participation as significant and fulfilling, extending beyond functional advantages (Hamari *et al.*, 2016). Therefore, the following hypothesis is framed:

H7: Sense of belonging in collaborative digital services positively affects (a) perceived utilitarian value, (b) perceived hedonic value, and (c) perceived social value.

2.6.2 Sharing behavior

Belk (2014) defines sharing as the act and process of distributing one's assets to others for their utilization, as well as the act and process of obtaining possessions from others for personal use. Collaborative consumption enables the sharing of physical goods and resources, typically mediated through online platforms such as peer-to-peer markets. These platforms facilitate the exchange of unused space, commodities, talents, funds, or services (Botsman & Rogers, 2010). Also, by encouraging enjoyment, satisfaction from supporting others, and engaging in collaborative transactions, sharing behavior also positively affects hedonic value (Hamari *et al.*, 2016). Tussyadiah and Pesonen (2015) argues that a major driving element for the adoption of collaborative platforms is the perceived communal benefits. Barnes and Mattsson (2017) point out that sharing behavior affects the acceptance of collaborative consumption services significantly. Consequently, the subsequent hypothesis is identified:

H8: Sharing behavior in collaborative digital services positively affects (a) perceived utilitarian value, (b) perceived hedonic value, and (c) perceived social value.

2.6.3 Sociability

Brandtzæg *et al.* (2010) define sociability as the ability to interact with others in a social network. Sociability helps users evaluate provider competency, which improves trust calibration and service reliability and leads to more efficient usage (ter Huurne *et al.*, 2017). Sociability drives collaborative consumption (Bucher *et al.*, 2016) so that using collaborative consumption services is advantageous for preserving and encouraging social connections with others (Malecka *et al.*, 2022). Sociable people may be more likely to adopt social innovations

(Nie, 2001), since they perceive more hedonic value, such as enjoyment (Junglas *et al.*, 2013) and a feeling of togetherness (Malecka *et al.*, 2022). Thus, the following hypothesis is formed:

H9: Sense of sociability in collaborative digital services positively affects (a) perceived utilitarian value, (b) perceived hedonic value, and (c) perceived social value.

2.7 Perceived values and usage intention

Value research indicates that the experience of products and services significantly influences consumer judgments regarding future consumption decisions (Holbrook, 1999; Sheth *et al.*, 1991; Zeithaml *et al.*, 2020) and perception of value as driving choice behavior (Gallarza *et al.*, 2011; Swait & Sweeney, 2000). Accordingly, we argue that based on service-related and social factors, individuals perceive utilitarian, hedonic and social values out of digital service platforms that lead to usage intention and behavior.

2.7.1 Utilitarian value

The concept of utilitarian value refers to a comprehensive evaluation of practical benefits (Overby & Lee, 2006). Utilitarian value in collaborative digital services is mostly produced by platform features, including user-friendly interfaces, quick service access, transparent pricing, and consistent service results that lower transaction costs and effort (Wirtz *et al.*, 2019). Algorithmic matching, standardized processes, and reputation systems enhance decision quality and service predictability, thus reinforcing perceptions of usefulness and performance (Möhlmann, 2015). Recent research indicates that digital platforms that assist users in efficiently achieving specific goals significantly enhance utilitarian value, which frequently surpasses social or experiential motivations in driving adoption (Wang *et al.*, 2019). In accordance with UTAUT2, utilitarian value, which is closely related to perceived usefulness and performance expectancy, has a significant positive impact on the intention to use. Users tend to favor services that clearly enhance productivity and address everyday challenges (Venkatesh *et al.*, 2012).

2.7.2 Hedonic value

The concept of hedonic value refers to the individual preferences and motivations of consumers. It is more subjective and personal than utilitarian value (Yang & Lee, 2010). In collaborative digital services, hedonic value is produced by

attractive user interfaces, seamless interaction flows, novelty, and pleasurable usage experiences. Visually appealing design, gamified elements, personalization, and seamless interaction contribute to users' emotional engagement and perceived enjoyment (Childers et al., 2001; van der Heijden, 2004). Enjoyment is a significant factor in motivating the use of sharing and platform-based services, extending beyond functional considerations, especially in voluntary and leisure-oriented contexts (Hamari et al., 2016). UTAUT2 explicitly defines hedonic motivation as a direct factor influencing behavioral intention, positing that users are more inclined to adopt technologies they perceive as enjoyable and emotionally fulfilling (Venkatesh et al., 2012).

2.7.3 Social value

Social value in collaborative consumption refers to how well it builds and maintains social ties. People receive social value from services through social acceptance, self-esteem, social engagement, and a sense of connection (Sweeney & Soutar, 2001). Social value in collaborative digital services is generated when usage of platforms enables social responsibility, modernity, group membership, or community belonging (Hamari et al., 2016). User profiles, rating systems, reviews, and visible participation indicators promote social comparison and recognition, increasing perceived social value (Zhang et al., 2019). Users of sharing and access-based platforms may also receive social benefits by sharing resources or encouraging peer-to-peer trading (Bardhi & Eckhardt, 2012). Social value reinforces subjective norms and identity-related motivations, making people more likely to use services that improve their social standing or align them with valued social groups (Barnes & Mattsson, 2017; Sweeney & Soutar, 2001).

Building on the arguments above, the following hypothesis is proposed:

H10: (a) Utilitarian value, (b) hedonic value, and (c) social value perceived from the collaborative digital services positively affect individuals' behavioral intentions.

2.8 Social norms and consumer culture factors

Upon reviewing the existing literature, it becomes evident that a considerable number of studies have investigated the influence of consumer values on the process of adoption. In their study, Hsiao and Chen (2017) have highlighted the significance of environmental considerations as influential elements in the adoption of digital services. Research shows that environmental concerns and values influence consumers' purchases of eco-friendly alternatives

and drive ecologically responsible purchases (Balderjahn, 1988). Since consumers value society and the environment, they engage in conservation-friendly behavior (Bamberg, 2003). Customers' perception of collaborative consumption services' environmental advantages (such as helping to save natural resources, efficient energy usage, lowering CO₂ emissions through optimized utilization) influences their adoption (Barnes & Mattsson, 2017; Hamari et al., 2016).

2.8.1 Novelty-seeking behavior

Technology adoption is greatly influenced by novelty-seeking behavior, which encourages people to interact with innovative technologies. Novelty seeking is described as the tendency to try new things (Arenas & Manzanedo, 2016). Novelty seekers tend to investigate and engage with new information (Mahon & Caramazza, 2009) and enjoy finding novel methods to solve problems. Digital service platforms provide a context in which consumers satisfy their need for exploring new information and methods of consumption. As Małecka et al. (2022) have illustrated that novelty seeking may impact the intention to use collaborative consumption alternatives. The experiential aspects of such technologies are unique in a way that consumers may feel novel or more innovative than others.

2.8.2 Anti-consumption

Anti-consumption can be broadly characterized as a set of behaviors and attitudes that oppose or challenge the act of consuming (Cherrier, 2009). People with anti-consumption behavior tend to reduce overall consumption to live a modest lifestyle and save the environment (Iyer & Muncy, 2009). Anti-consumption lifestyles drive collaborative service business models that emphasize use and sharing over ownership (Akbar et al., 2016; Botsman & Rogers, 2010; Lee, 2019). Collaborative digital services are in line with anti-consumption values as they encourage shared access rather than individual ownership, which reduces resource consumption and environmental impact (Albinsson & Perera, 2012). Furthermore, anti-consumption behavior improves the social and environmental value of collaborative services, which increases users' commitment and loyalty to these platforms (Ozanne & Ballantine, 2010).

2.8.3 Social norms

Social norms shape people's ideas of what is socially acceptable, desirable, or expected in their communities. People are more likely to try something if they believe that it is socially acceptable and encouraged by powerful people

(Bicchieri & Mercier, 2014). Former studies have found that social norms and the drive to build community reputation facilitate technology adoption and motivate users to adopt collaborative digital platforms (Delgosha & Hajiheydari, 2020; Schepers & Wetzels, 2007). By reinforcing that sharing resources, reducing ownership, and using peer-to-peer platforms are socially responsible and environmentally beneficial, social norms can validate and encourage participation in collaborative digital services (Hamari *et al.*, 2016).

On the basis of the arguments above, it is proposed that;

H11: Consumer culture factors of (a) environmental behavior, (b) novelty seeking behavior, (c) anti-consumption behavior, and (d) social norms positively affect behavioral intention towards collaborative digital services.

2.9 Behavioral intention and usage behavior

According to Yu (2012), behavioral intention is a person's assessment of their readiness and willingness to use digital services. UTAUT model shows that behavioral intention will increase technology adoption (Venkatesh *et al.*, 2003). When people act on their motives to utilize a service, this intention usually becomes actual behavior (Davis *et al.*, 1989). According to research, users are more likely to convert their positive behavioral intentions into frequent use of digital services when they are motivated (Alam *et al.*, 2020; Morosan & DeFranco, 2016; Singh & Söderlund, 2020). Huang *et al.* (2021) have pointed out that consumer intentions affect future collaborative consumption behavior, specifically for online collaborative redistribution platforms. Accordingly, the following hypothesis is proposed:

H12: Individual's behavioral intention toward the collaborative digital services positively affects the actual usage behavior.

On the basis of all the explanations above, the theoretical model is presented in Figure 1.

3. Methodology

This study has adopted a quantitative research design that utilizes a cross-sectional survey to examine the determinants affecting the adoption of digital service platforms by integrating technology-related factors with collaborative consumption indicating concepts. Via an online survey, a convenience sample of 519 acceptable responses (out of 569 participants) that passed a common method bias check was collected from consumers with digital service platform

experience. Sample size criteria were determined by structural equation modelling (SEM) best practices, which advise for a minimum of 10 respondents per estimated parameter or at least 400 participants for complicated models (Kline, 2016). The obtained sample exceeded these levels, guaranteeing sufficient statistical power.

This study uses convenience sampling because it enables rapid, cost-efficient access to a widespread group of digital-service users. Convenience samples serve as a pragmatic initial approach for research that evaluates complicated measurement models and refines theoretical constructs, such as item validation, factor structure development, and initial path coefficient estimation, especially when the target population is digitally engaged and accessible through online panels, social media, or platform communities (Dillman *et al.*, 2014).

Data is collected using an online form service involving the participation of student respondents, professionals, and community groups. Considering the largely technologically proficient demographic, the electronic survey method was preferred for collecting data (Stanton & Rogelberg, 2001). Google Forms was used for its cost-effectiveness and efficiency. The survey was distributed to several university cooperation groups, professional email groups, IoT Türkiye follower groups, and social media platforms such as Facebook, Instagram, and LinkedIn.

It has been noted that the internet usage in Turkey is at 88.8%, with online purchasing or ordering goods or services by 51.7% of the internet users (TUIK, 2024). FlixPatrol (2025) reports that the number of Netflix users in Turkey has exceeded 3.7 million in the year 2024, positioning it as the eighth largest subscriber base in Europe. According to Airtics data, Istanbul ranks 4th among European cities with over 22,000 listings on Airbnb (Airtics, 2025). These figures indicate that Turkey is positioned favorably in terms of digital service acceptance. In order to participate in the study, it is required that individuals have prior or current experience with the given digital services. Hence, the target group of this study comprised Turkish individuals who have used one of the provided collaborative digital services via a mobile device or website at least once over the past 6 months.

Collaborative digital service examples shared with survey participants are music subscription services (Spotify, Fizy, and Apple Music), video subscription services (Netflix, Disney+, and TV+), shared transportation services (Marti, BinBin, Moov, Tiktak, and Uber), game subscription services (GamePass, gForceNow), equipment rental services (Dolap, Kiralarsin, and Varsapp), and shared office services, temporary house/space rental (Airbnb).

The scales for each construct in Figure 1 are taken from the following studies: behavioral intention and, actual usage behavior (Alam et al., 2020); cost, sharing behavior, social value, and environmental behavior (Barnes & Mattsson, 2017); access convenience (Colwell et al., 2008); complexity, perceived risk, enjoyment, social norms (Delgosha & Hajiheydari, 2020); anti-consumption behavior (Lee & Cha, 2021); novelty seeking (Li et al., 2020); sense of sociability (Małecka et al., 2022); usage convenience (Luri Minami et al., 2021); sense of belonging (Ooi et al., 2018); utilitarian value, hedonic value (Yuan et al., 2022).

Since the original measurement scales were established in English, it was necessary to ensure to avoid translation complications. Accordingly, a preliminary examination was carried out, including a sample of 15 individuals, in order to evaluate the content and face validity of each construct. The pilot test revealed inconsistent and unintelligible phrases, which were corrected to improve readability. To accurately represent the collaborative consumption context, some of the scales were adjusted after the pilot test. Measurement of all research constructs was carried out by using 7-point Likert scales with anchor points of “strongly disagree” to “strongly agree.” Participants were also asked about their gender, age, marital status, income level, education level, employment status, and occupation.

As suggested by MacKenzie and Podsakoff (2012), additional survey questions were included to prevent common method bias during data collection. Question 1 (How do you feel today? 7 – Very good/1 – Very bad) was asked after 33% of the survey, and Question 2 (Please select “1” as the answer to this question. 7 – Strongly agree 4/1 – Strongly disagree) was asked after 66% of the survey was completed; 50 of the cases were eliminated after the common method bias check and screening for attention.

4. Results

4.1 Preliminary analysis

The dataset underwent a screening process to identify any missing values and outliers. Completing all questions was a requirement for submitting the survey during the data collection procedure. Consequently, the data collection does not contain any missing values. The data were assessed for normality. The skewness and kurtosis values for all variables were found to be within the acceptable range of -2 and $+2$, as suggested by George and Mallery (2020).

In the sample of 519 respondents, it is observed that almost 54% of the participants identified as female. Furthermore, 47% of the respondents fall within the age range of 18–35. Close to 53% of the individuals are married. Lastly, 45% of the participants report a household income of more than 41,000 TL per month, and 58.8% of respondents are employed. These figures are highly similar to the main population statistics presented in Table 2.

The Harman’s one-factor statistical test was employed in order to establish confidence that the observed associations discovered in this study are unlikely to be attributed to common method bias (MacKenzie & Podsakoff, 2012). According to Harman’s single-factor exploratory factor analysis using SPSS without applying any rotation, it suggests that there is no significant common method bias,

Demographics	Sample (%)*	Main population (%)**
<i>Gender</i>		
Female	54.9	49.9
Male	45.1	50.1
<i>Age</i>		
20–34	47.2	39.1
35–55	41.6	40.6
56–70	4.0	20.3
<i>Marital status</i>		
Single	46.6	38.7
Married	53.4	61.3
<i>Income level</i>		
Less than 11,000 TL	5.8	6.0
11,001–21,000 TL	15.0	10.4
21,001–31,000 TL	15.8	14.7
31,001–41,000 TL	18.3	20.9
More than 41,000 TL	45.1	48.0
<i>Employment status</i>		
Employed	58.8	54.1
Unemployed	41.2	45.9
<i>Occupation</i>		
Top managers, business owners	2.6	3.0
Service, sales staff	14.8	16.7
Technicians, assistant professional	10.2	8.8
Office staff	9.2	9.5

Table 2. Demographics of sample and main population.
Source: Authors’ own analysis.

since the single component accounted for less than 50% (38.6%) of the variation (Podsakoff & Organ, 1986).

4.2 Measurement model assessment

Components of the theoretical model are analyzed in four groups, i.e., service-related factors, social factors, values extracted from service, and consumer culture factors (Anderson & Gerbing, 1988; Tables 3–6). The model's nomological validity is confirmed since all RMSEA values within groups are less than 0.08, while NFI, GFI, CFI, and AGFI values are above 0.95 (Hair et al., 1998). The examination of convergent validity reveals a favorable outcome. All *t*-values for each variable are statistically significant (all *t*-values >1.96, *p* = 0.05) (Bagozzi et al., 1991). All metrics demonstrate higher squared multiple correlations (SMC) than the threshold value of 0.50, and all average variances obtained are above 0.50. All structures demonstrate composite reliabilities over 0.70 (Fornell & Larcker, 1981). Also, all Cronbach's alpha values range between 0.84 and 0.98 > 0.70 (Nunnally & Bernstein, 1994) (Tables 3–6).

Subsequently, components of the theoretical model are then investigated. The ratio of the chi-square value to the degree of freedom is found to be below the predetermined threshold of 3 (CMIN/df = 1.414), and the Root Mean Square Error of Approximation (RMSEA) is 0.028 which is lower than 0.08. Additional goodness-of-fit statistics collectively indicate that the theoretical model exhibited a reasonable level of fit (Normed Fit Index (NFI) = 0.933; Adjusted Goodness of Fit Index (AGFI) = 0.846; Comparative Fit Index (CFI) = 0.979; Incremental Fit Index (IFI) = 0.98; Relative Fit Index (RFI) = 0.925 (Hair et al., 1998). These measures of Cronbach's alphas (ranging between 0.84 and 0.98 > 0.70) (Nunnally & Bernstein, 1994) and composite reliabilities (CR) (ranging between 0.81 and 0.94 > 0.70) (Fornell & Larcker, 1981) indicate high internal consistency of the constructs (Table 7).

The AVE observed in this study varies from 0.53 to 0.80 which indicates convergent validity (all above 0.50). Discriminant validity is evaluated by conducting a comparison between the square root of AVE and the correlation between constructs, as proposed by Fornell and Larcker (1981). The correlation matrix reveals that service-related, social, and value-perception variables are significantly correlated, showing that users assess digital platforms holistically (Please see Table A1). Overall, these findings support the validity and reliability of the measurement model, offering a foundation for further structural studies and hypothesis testing.

4.3 SEM

In the process of evaluating the model, SEM is used to determine the model's factor structure and test its internal reliability with SPSS AMOS 26. SEM is an appropriate choice for this study because the proposed adoption model combines several underlying concepts, like service-related factors, collaboration-oriented social elements, consumer attributes, and perceived value levels. These factors are not measurable directly, but instead through a series of indicators (Hair et al., 2019). Unlike traditional regression methods, SEM can estimate both the measurement model (the connections between latent constructs and their indicators) and the structural model (the connections between latent constructs) simultaneously. This contributes to reduced distortion and theory-based causal relationship discovery (Kline, 2016). This is essential since the study tests a complex adoption model with attitudinal predictors and mediating mechanisms, as in TAM/UTAUT research (Venkatesh et al., 2012).

During the second phase of the investigation, the goodness-of-fit measurements are employed to evaluate the overall fit of the structural model. According to the findings of the research, the proposed/base model demonstrates satisfactory overall fit indices. The Chi-square/df ratio is 1.528, indicating an acceptable fit. The Root Mean Square Error of Approximation (RMSEA) is 0.032, which is within an acceptable range of below 0.08. Additionally, all fit indices except Adjusted Goodness of Fit Index (AGFI) (0.837 within acceptable level) are above the threshold of 0.90 indicating good fit (Hair et al., 2019) (Normed Fit Index (NFI) = 0.926; Comparative Fit Index (CFI) = 0.973; Incremental Fit Index (IFI) = 0.973, and Relative Fit Index (RFI) = 0.919). The previously mentioned fit indices for the final model demonstrate a satisfactory level of structural model fit.

According to SEM analysis, paths with *p*-values beyond 0.05 are excluded from the final model. Based on this investigation, it is found that elements such as sociability and usage convenience do not influence the hedonic value. When examining the social value, it is found that the variables of cost, usage convenience, access convenience, risks, and complexity do not show any statistically significant effects. Upon analyzing the components, it is found that the factors of sense of belonging and sociability do not demonstrate a significant impact on utilitarian value. Also, it is shown that environmental behavior does not have a significant effect on intention. Note that the accepted model did not include environmental behavior, even though it was statistically significant at 90% confidence

Model Fit	χ^2	df	RMSEA	GFI	NFI	CFI	AGFI
Indicators*	181.8	137	0.025	0.964	0.982	0.995	0.95
Variables						SMC	t-value
<i>Access convenience</i>							
Provider was available when I needed them						0.744	24.346
Service provider is accessible in various ways						0.783	25.370
Hours of operation were convenient						0.896	28.445
Easy to contact the customer service of the provider						0.460	17.195
<i>Complexity</i>							
I think using a collaborative digital service is complicated						0.870	27.653
I feel that using a collaborative digital service is confusing						0.869	27.600
I feel that using a collaborative digital service needs special skills and knowledge						0.725	23.831
<i>Cost</i>							
I can save money by using collaborative digital services						0.857	27.556
Collaborative digital services are a lower cost alternative for me						0.898	28.720
Collaborative digital services are a more economical alternative to traditional service procurement						0.850	27.371
<i>Enjoyment</i>							
I think using the collaborative digital service is an experience of pleasure						0.873	28.167
I feel the process of using the collaborative digital service is enjoyable						0.923	29.609
I think using the collaborative digital service is fun						0.916	29.394
<i>Risks</i>							
I am worried about the security of my personal data						0.642	20.688
I am worried about liability in case of unfulfilled services						0.718	22.314
I have no idea how qualified the service providers are						0.681	21.515
<i>Use convenience</i>							
I can benefit with little effort by using collaborative digital services						0.828	26.835
I can meet my needs with collaborative digital services						0.945	30.208
The time taken when using collaborative digital services to receive service is reasonable						0.861	27.764
Internal consistency	Composite reliability (ρ)		Cronbach alpha (α)		Average variance extracted (AVE)		
Access convenience	0.911		0.905		0.721		
Complexity	0.932		0.932		0.821		
Cost	0.952		0.951		0.869		
Enjoyment	0.966		0.966		0.905		
Risks	0.865		0.864		0.681		
Use convenience	0.956		0.955		0.878		

Table 3. Measurement model for service-related factors.

* χ^2 , Chi square; df, degrees of freedom; RMSEA, root mean square error of approximation; GFI, Goodness-of-fit index; NFI, normed-fit index; CFI Comparative-fit index; AGFI, Adjusted goodness-of-fit index; SMC, Squared multiple correlation (the individual reliability of a variable).

Nomological validity: Satisfied. RMSEA < 0.08; NFI, GFI, CFI and AGFI $\geq$ 0.95.

Convergent validity: Satisfied. All *t*-values $\geq$ 1.96 (significant at 0.95 confidence level); All SMC (except one item) $\geq$ 0.05 and, All AVE $\geq$ 0.50.

Source: Authors' own analysis.

Model Fit	χ^2	df	RMSEA	GFI	NFI	CFI	AGFI
Indicators*	105.8	47	0.049	0.964	0.982	0.995	0.95
Variables						SMC	t-value
Sense of belonging							
I consider people who use collaborative digital services as my close friends						0.698	22.074
I like people using collaborative digital services						0.702	22.815
I feel like I'm part of the same community with people who use collaborative digital services						0.816	25.225
I enjoy being part of a community of users of collaborative digital services						0.594	20.150
I am committed to the community that uses collaborative digital services						0.590	20.047
Sharing behavior							
I like to share my collaborative digital service accounts with my friends and family						0.858	27.317
I share the products and services I have with others using collaborative digital services						0.834	26.714
I borrow collaborative digital service accounts from my friends and family members						0.740	24.195
Instead of purchasing products and services directly, I mostly use them through collaborative digital services						0.745	23.910
Sense of sociability							
I like to use shared digital services with the people around me						0.888	28.236
I prefer to use shared digital services with others rather than alone						0.860	27.470
Meeting others through sharing digital services is a pleasant experience for me						0.708	23.437
Internal consistency			Composite reliability (ρ)			Cronbach alpha (α)	Average variance extracted (AVE)
Sense of belonging			0.914			0.915	0.680
Sharing behavior			0.939			0.936	0.794
Sense of sociability			0.931			0.930	0.818

Table 4. Measurement model for social factors.

* χ^2 , Chi square; df, degrees of freedom; RMSEA, Root mean square error of approximation; GFI, Goodness-of-fit index; NFI, Normated-fit index; CFI, Comparative-fit index; AGFI, Adjusted goodness-of-fit index; SMC, Squared multiple correlation (the individual reliability of a variable).

Nomological validity: Satisfied. RMSEA < 0.08; NFI, GFI, CFI and AGFI $\geq$ 0.95.

Convergent validity: Satisfied. All *t*-values $\geq$ 1.96 (significant at 0.95 confidence level); All SMC $\geq$ 0.05 and, All AVE $\geq$ 0.50.

Source: Authors' own analysis.

(Table 8). Please see Figure 2 for the alternative model of the study that presents significant relationships.

Multi-group split tests are conducted on sub-samples categorized by gender and age to evaluate the model's stability. Except for one variable, female ($n = 281$) and male ($n = 231$) individuals show no statistically significant difference (Table A2). Enjoyment has no significant impact on hedonic value in females ($p = 0.657$); however, it significantly affects males ($p = 0.001$). CMIN is 4.280, and the p -value is 0.039 for the two sub-samples, indicating a significant difference. Consequently, gender appears as a moderating variable influencing enjoyment of hedonic

value (H5b). Seven people who did not disclose their gender are eliminated from the analysis. A subgroup with a median age of 33 and below is classified as young ($n = 264$) and over 33 as old ($n = 255$). Except for one variable, younger and older participants do not differ statistically (Table A2). Complexity has no significant impact on social value in young ($p = 0.962$) and old ($p = 0.463$) as well. CMIN is 5.050, and p -value is 0.025 for the two sub-samples, indicating a significant difference. However, since both sub-segments display identical adoption trends (no significant effect of complexity on social value), no moderating effect is observed.

Model Fit	χ^2	df	RMSEA	GFI	NFI	CFI	AGFI
Indicators*	82.0	46	0.039	0.975	0.990	0.996	0.957
Variables						SMC	t-Value
<i>Hedonic value</i>							
I lose track of time when using shared digital services						0.683	21.671
I enjoy using shared digital services						0.957	29.047
I feel relaxed when using shared digital services						0.752	23.342
I feel good when using shared digital services						0.761	24.241
<i>Social value</i>							
I can help others when using sharing digital services						0.848	27.227
I think people who use shared digital services help each other						0.876	27.988
I think shared digital services bring people closer together						0.850	27.282
<i>Utilitarian value</i>							
I think collaborative digital services are functional						0.909	29.301
I think collaborative digital services are useful						0.952	30.605
I think collaborative digital services are practical						0.909	29.314
I think collaborative digital services are beneficial						0.915	29.452
I think collaborative digital services are helpful						0.773	25.417
Internal consistency	Composite reliability (ρ)		Cronbach alpha (α)		Average variance extracted (AVE)		
Hedonic value	0.937		0.939		0.789		
Social value	0.948		0.948		0.858		
Utilitarian value	0.976		0.976		0.892		

Table 5. Measurement model for consumer values extracted from service.

* χ^2 , Chi square; df, degrees of freedom; RMSEA, root mean square error of approximation; GFI – Goodness-of-fit index; NFI – normed-fit index; CFI – Comparative-fit index; AGFI, adjusted goodness-of-fit index; SMC, squared multiple correlation (the individual reliability of a variable).

Nomological validity: Satisfied. RMSEA < 0.08; NFI, GFI, CFI and AGFI $\geq$ 0.95.

Convergent validity: Satisfied. All *t*-values $\geq$ 1.96 (significant at 0.95 confidence level); All SMC $\geq$ 0.05 and, All AVE $\geq$ 0.50.

Source: Authors' own analysis.

5. Discussion

The concept of collaborative consumption has recently gained significant attention due to its potential for improving efficiency and sustainability. This study aims to focus on the challenges related to collaborative consumption, in conjunction with consumer theories in digital servitization adoption.

Accordingly, this study has investigated the adoption of collaborative digital services by examining how different elements interact with each other. The elements include: (a) service-related factors, (b) social factors, (c) consumer values extracted from experiences with collaborative digital services, (d) consumption culture factors with social norms, and (e) behavioral intention and actual use behavior of collaborative digital services. These five

levels have been individually analyzed in different research in the existing body of literature and are collectively represented in this article. A theoretical model of collaborative consumption was proposed in order to get a better understanding of the dynamics of the adoption behavior.

Overall model indicates that collaborative consumption service usage intention leads to actual usage behavior, and the former is affected by utilitarian value, hedonic value, social value, social norms, novelty seeking behavior, and anti-consumption behavior. Utilitarian value is influenced by cost, access convenience, usage convenience, complexity, enjoyment, risks, and sharing behavior. Sense of belonging (BELONG) and sociability (SOCIA) fail to predict utilitarian value (UTIL) ($\beta = 0.031$, $p = 0.900$; $\beta = 0.037$, $p = 0.536$), revealing that practical assessments (such as usefulness and efficiency) are mainly independent of

Model Fit	χ^2	df	RMSEA	GFI	NFI	CFI	AGFI
Indicators*	60.69	40	0.032	0.979	0.986	0.995	0.965
Variables						SMC	t-Value
<i>Anti-consumption behavior</i>							
I fully adhere to a simple lifestyle and only buy necessities						0.681	21.041
Even when I have money, I never buy things unexpectedly						0.634	20.101
I would adopt a simple lifestyle even if I were able to live extravagantly						0.610	19.600
<i>Environmental behavior</i>							
I actively recycle items that I am able to						0.666	20.807
I try to repair or reuse items rather than throwing them away						0.628	20.015
I actively try to reduce my carbon footprint						0.633	20.122
<i>Novelty-seeking behavior</i>							
I like to investigate things						0.797	25.899
I am very curious						0.751	24.640
I try to think of new ways of doing things						0.881	28.301
I like to be challenged intellectually						0.866	27.859
I like to figure out how things work						0.762	24.982
Internal consistency	Composite reliability (ρ)		Cronbach alpha (α)		Average variance extracted (AVE)		
Anti-consumption behavior	0.843		0.841		0.642		
Environmental behavior	0.842		0.837		0.639		
Novelty-seeking behavior	0.956		0.957		0.812		

Table 6. Measurement model for consumer culture factors.

* χ^2 , Chi square; df, degrees of freedom; RMSEA, root mean square error of approximation; GFI, Goodness-of-fit index; NFI, normed-fit index; CFI, Comparative-fit index; AGFI, adjusted goodness-of-fit index; and SMC, Squared multiple correlation (the individual reliability of a variable).

Nomological validity: Satisfied. RMSEA < 0.08; NFI, GFI, CFI and AGFI $\geq$ 0.95.

Convergent validity: Satisfied. All *t*-values $\geq$ 1.96 (significant at 0.95 confidence level); All SMC $\geq$ 0.05 and, All AVE $\geq$ 0.50.

Source: Authors' own analysis.

social-relational characteristics. This aligns with UTAUT findings suggesting that utilitarian assessments generally originate from performance expectations rather than social influences (Venkatesh et al., 2012).

Hedonic value is influenced by cost, access convenience, complexity, enjoyment, risks, sense of belonging and sharing behavior. The relationships from sociability (SOCIA) and usage convenience (UCON) to hedonic value (HEDON) are found to be non-significant ($\beta = 0.043$, $p = 0.974$; $\beta = 0.047$, $p = 0.218$). This contrasts with previous studies indicating that usability and social engagement increase satisfaction on digital platforms (Zhang et al., 2019). A potential reason is that consumers of access-based or collaborative consumption services might perceive platform usage as a functional rather than hedonic experience, thus reducing the impact of social or convenience indicators on hedonic responses (Hamari et al., 2016).

Social value is related to enjoyment, sense of belonging, sharing behavior, and sense of sociability. Several factors, including cost (COST), access convenience (ACON), usage convenience (UCON), perceived risk (RISKS), and complexity (COMPLEX) do not affect social value (SOCVAL) ($\beta = 0.046$, $p = 0.735$; $\beta = 0.062$, $p = 0.185$; $\beta = 0.056$, $p = 0.713$; $\beta = 0.037$, $p = 0.531$; $\beta = 0.052$, $p = 0.507$). The results indicate that the building of social value in collaborative consumption is mostly determined by interpersonal or social interactions rather than functional service qualities (Belk, 2014; Eckhardt et al., 2019).

Another finding is the moderation effect of gender on value extraction. The proposed model shows that hedonic value is significantly predicted by enjoyment for men but not for women, indicating gender-based differences in digital service platform enjoyment. When evaluating technology, men value stimulation, novelty, and experience

Factor	Cronbach's alpha (α)	Composite reliability (ρ)	AVE
Cost	0.951	0.870	0.692
Use convenience	0.955	0.867	0.686
Access convenience	0.905	0.836	0.564
Complexity	0.932	0.882	0.714
Enjoyment	0.966	0.922	0.798
Risks	0.864	0.847	0.650
Sense of belonging	0.915	0.887	0.611
Sharing behavior	0.936	0.815	0.527
Sense of sociability	0.930	0.857	0.668
Utilitarian value	0.976	0.858	0.548
Hedonic value	0.939	0.855	0.598
Social value	0.948	0.810	0.588
Novelty seeking behavior	0.957	0.939	0.757
Environmental behavior	0.837	0.807	0.584
Anti-consumption behavior	0.841	0.827	0.616
Social norms	0.947	0.931	0.772
Intention	0.955	0.850	0.656
Actual usage	0.963	0.923	0.751

Table 7. Reliability statistics and AVEs for theoretical model components.

Source: Authors' own analysis.

(Morris & Venkatesh, 2000); but women prefer relational, contextual, and practical digital services for their utility, trustworthiness, and social relevance over enjoyment (Li & Kirkup, 2007). Thus, female consumers' hedonic value might originate from more than just pleasure.

Upon examination of the proposed model, it is discovered that the components of utilitarian value, hedonic value, and social value have a positive effect on the intention of participating in collaborative digital services. In addition, social norms and consumer value elements such as, novelty seeking behavior and anti-consumption behavior also influence behavioral intention. It is shown that the components of hedonic value, utilitarian value, novelty seeking behavior, anti-consumption behavior, social value, and social norms have an impact on intention. However, the relationship between environmental behavior (ENVIRO) and behavioral intention (INTENT) ($\beta = 0.040$, $p = 0.064$) is not significant, contrasting with research indicating that sustainability motives affect participation in sharing economy services (Barnes & Mattsson, 2017). This suggests

that although people appreciate environmental advantages, these motivations alone are insufficient to drive adoption unless combined with convincing economic or experience value propositions.

From the results, it becomes evident that service-related factors with the sharing behavior factor affect utilitarian value. While service-related factors address the utilitarian dimension of the service, sharing behavior also influences utilitarian value since the main consumption is collaborative. Analysis shows that all factors except usage convenience and social factors like sense of belonging and sharing behavior seem to affect hedonic value. Nevertheless, it is shown that the perception of social value does not have a significant impact on hedonic value. It becomes evident that all social factors (sense of belonging, sharing behavior, and sociability) and enjoyment factors influence social value.

Tauqeer and Bang (2018) revealed that usefulness and barrier reduction reduce product tangibility. This idea fits the study's theoretical framework. The perceived utilitarian value of a collaborative digital service increases when cost, convenience, and enjoyment increase and complexity and risk decrease. These findings provide further evidence that consumers are more likely to continue using collaborative digital services when they perceive a higher level of value.

5.1 Implications for theory

This study provides theoretical implications for technology adoption, collaborative consumption, and digital servitization research. It expands conventional TAM and UTAUT frameworks by incorporating both service-related antecedents and collaboration-oriented social factors, which predominantly focus on cognitive assessments like usefulness and ease of use (Davis et al., 1989; Venkatesh et al., 2012). Numerous factors did not significantly affect hedonic, utilitarian, and social value, suggesting that access-based digital services may create value through different mechanisms than classic adoption theories. This challenges the assumption – implicit in TAM/UTAUT – that functional and social cues universally influence value perceptions, suggesting a necessity to adapt these models for collaborative consumption scenarios (Hamari et al., 2016).

On the other hand, this article integrates the notion of social value into the adoption of digital services along with the utilitarian and hedonic value. These findings show that even on digital platforms, consumers seek emotional connection and interpersonal resonance, without disregarding

	Path		Std. estimate	<i>p</i>	Hypothesis No	Hypothesis
ACT	←	INTENT	0.038	***	H12	Supported
HEDON	←	COMPLEX	0.045	***	H4b	Supported
HEDON	←	SOCIA	0.043	0.974	H9b	Not supported
HEDON	←	UCON	0.047	0.218	H2b	Not supported
HEDON	←	RISKS	0.032	0.044	H6b	Supported
HEDON	←	SHARING	0.046	0.039	H8b	Supported
HEDON	←	BELONG	0.036	0.03	H7b	Supported
HEDON	←	COST	0.039	0.014	H1b	Supported
HEDON	←	ENJOY	0.034	0.014	H5b	Supported
HEDON	←	ACON	0.053	0.005	H3b	Supported
INTENT	←	UTIL	0.043	***	H10a	Supported
INTENT	←	HEDON	0.049	***	H10b	Supported
INTENT	←	NORMS	0.027	***	H11d	Supported
INTENT	←	ANTI	0.038	***	H11c	Supported
INTENT	←	NOVELTY	0.043	***	H11b	Supported
INTENT	←	ENVIRO	0.04	0.064	H11a	Not supported
INTENT	←	SOCVAL	0.032	0.018	H10c	Supported
SOCVAL	←	ENJOY	0.04	***	H5c	Supported
SOCVAL	←	BELONG	0.043	***	H7c	Supported
SOCVAL	←	SHARING	0.056	***	H8c	Supported
SOCVAL	←	SOCIA	0.051	***	H9c	Supported
SOCVAL	←	COST	0.046	0.735	H1c	Not supported
SOCVAL	←	UCON	0.056	0.713	H2c	Not supported
SOCVAL	←	RISKS	0.037	0.531	H6c	Not supported
SOCVAL	←	COMPLEX	0.052	0.507	H4c	Not supported
SOCVAL	←	ACON	0.062	0.185	H3c	Not supported
UTIL	←	COST	0.034	***	H1a	Supported
UTIL	←	UCON	0.041	***	H2a	Supported
UTIL	←	ACON	0.045	***	H3a	Supported
UTIL	←	COMPLEX	0.038	***	H4a	Supported
UTIL	←	BELONG	0.031	0.9	H7a	Not supported
UTIL	←	SOCIA	0.037	0.536	H9a	Not supported
UTIL	←	ENJOY	0.029	0.032	H5a	Supported
UTIL	←	SHARING	0.04	0.012	H8a	Supported
UTIL	←	RISKS	0.027	0.002	H6a	Supported

Table 8. Path statistics of the theoretical model.

COST, Costs; UCON, Usage Convenience; ACON, Access Convenience; COMPLEX, Complexity; ENJOY, Enjoyment; RISK, Perceived Risk; BELONG, Sense of Belonging; SHARING, Sharing Behavior; SOCIA, Sense of Sociability; UTIL, Utilitarian Value; HEDON, Hedonic Value; SOCVAL, Social Value; NORMS, Social Norms; ANTI, Anti-consumption Behavior; NOVELTY, Novelty Seeking Behavior; ENVIRO, Environmental Behavior; INTENT, Usage Intention; ACT, Actual Usage Behavior.

Source: Authors' own analysis.

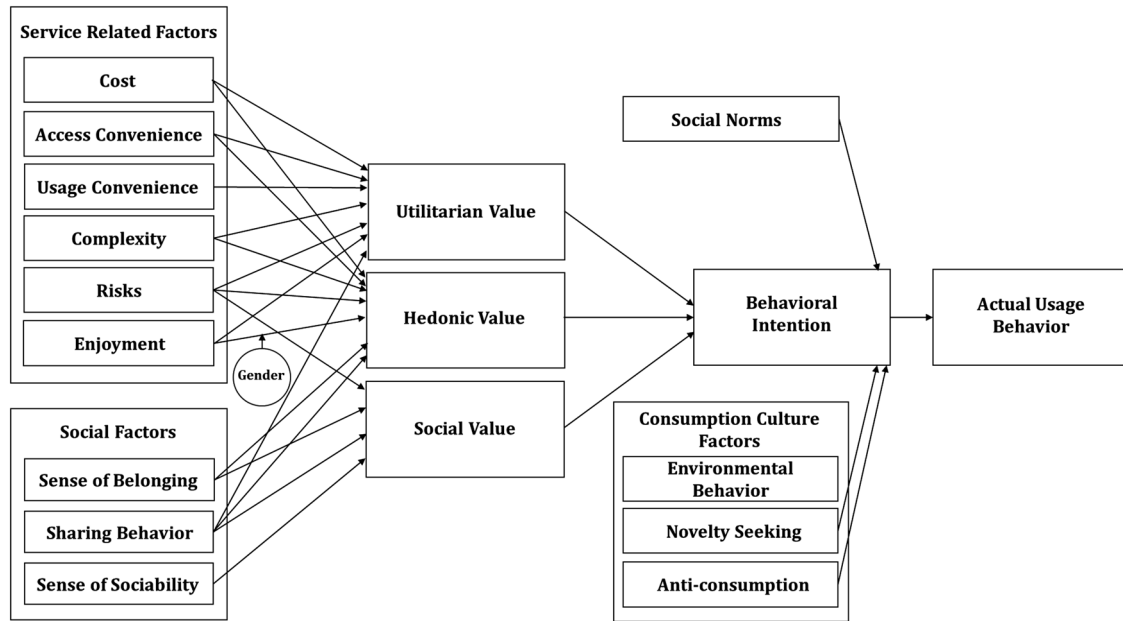


Figure 2. Alternative model. Note: Only the supported pathways are represented in the model with a line.

Source: Authors' own research.

the social base of collaborative consumption. According to Bardhi and Eckhardt (2012) and Hamari et al. (2016), community attachment, relationship warmth, and peer interaction continue to influence consumer perceptions of access-based services. Thus, rather than considering platform usage as transactional or impersonal, the results suggest that “collaboration” in collaborative digital services remains social-psychological, supporting the idea that sharing platforms enable a sense of connection and sociability.

Third, the study reveals that adoption intention is not directly correlated with environmental behavior, which contradicts the sustainability-based arguments commonly employed in sharing economy studies. Although previous studies suggest that ecological consciousness promotes usage (e.g., Piscicelli et al., 2015), our findings reveal that a pro-environmental attitude may be insufficient unless it is concurrently supported by considerable economic or experiential advantages. This discovery supports value-based adoption theories that highlight the importance of perceived individual advantages over ethical or communal motivations (Sheth et al., 1991).

Finally, analysis of servitization components shows that consumer culture, novelty-seeking behavior, and anti-consumption behavior affect adoption intention. The literature addresses these elements in the context of collaborative consumption, but technology adoption models rarely include them. Although collaborative consumption, PSS/digital servitization, and technology adoption literature

are rich in service marketing, only a few academic studies, like this study, have examined their total impact on service adoption.

5.2 Implications for practice

The number of collaborative consumption services grows continuously due to advancements in technology. Based on the report from GlobeNewswire (2023), the market size of the sharing economy is estimated to be around USD 150 billion and reach USD 793 billion by 2031. According to a report by Grand View Research (2021), the global game subscription industry has been forecasted, revealing that the market size for subscription-based game platforms reached USD 8.25 billion in 2021 and would see a compound annual growth rate of 12.8% from 2022 to 2030. Based on the available statistics, it is evident that collaborative digital services are experiencing a notable increase.

This study has provided important insights for digital service providers. As mentioned in Bıçakcıoğlu-Peynirci and Morgan (2023)’s study, digital servitization helps companies to boost how they perform in international markets by changing the perspective from a resource-based view to a service-based view to benefit better from slack resources and digital marketing capabilities. The results have shown that, in addition to the technical components of the

solutions they provide, digital service providers also must consider consumer culture and the social benefits of their services. Upon examination of the research data, it is evident that sharing behavior affects utilitarian value. Consumers assess the impact of collaborative digital services on promoting sharing with society as a utilitarian advantage. The necessity for customers to possess items has begun to decline as resources become more readily available. This study highlights valuable insights for managers by analyzing the characteristics of servitization and digital service adoption.

5.3 Limitations and future research

This study offers a modest contribution to understanding collaborative consumption acceptance, although it has notable limitations. First, the study uses national data and is culturally specific. Adoption behavior may differ dramatically between cultures with more collectivist orientations or with more developed sharing economy services driven by cultural norms on sharing, risk, sociability, and value. Thus, future research should use cross-cultural comparative methods to determine if these associations are durable across cultures and institutions (Hofstede, 2011).

Secondly, using the convenience sampling method limits findings generalizability. While this method allowed efficient data collection, the resulting sample could fail to accurately reflect the larger group of platform users. Unobserved biases relating to technology, income, or platform experience may have influenced responses. Future research could use probability-based sampling, panel data, or multi-site participation to improve representativeness and robustness. Replication tests with different samples may also validate the stability of unsupported routes in this model.

This study is further limited by its cross-sectional research design, which makes it more challenging to establish clear causal relationships. The hypothesized model is based on behavioral theory, and the temporal logic that intention precedes behavior is well supported in the literature (Ajzen, 1991; Fishbein & Ajzen, 1975), but causal direction cannot be empirically confirmed because all variables were measured at one time. Common method variance is another issue with cross-sectional data that makes causal interpretation challenging. Future research should use mixed methods or longitudinal designs to enhance directional claims.

Another limitation relates to the result that environmental behavior did not significantly influence usage intention. Since the survey lists all collaborative digital services together, some participants may misunderstand

environmental behavior-related questions. Some of the platforms (such as music, video, and general digital content services) do not provide an explicit or salient environmental benefit to users. Thus, even individuals with strong pro-environmental orientations may not see using an online video service as an environmentally friendly action, so their ecological values may not be involved in this adoption situation. Future studies might focus on environmental influence among platforms that explicitly frame themselves as sustainable – such as ride-sharing aimed at reducing emissions, re-commerce platforms that promote circular consumption, or access-based services branded around waste reduction.

This study focuses mainly on consumer services. On the other hand, the field of enterprise services covers a broad range of study areas. The scope of this research may be expanded to include corporate services as well. *Given the unexpected lack of support for numerous theoretically expected correlations, complementary qualitative study could reveal users' different views of collaboration, convenience and sociality.*

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Author contributions

Can Guleren contributed to the literature review, conceptualization of the study, research design, data analysis and the drafting of the manuscript. Elif Karaosmanoglu contributed to the conceptualization of the study, research design, methodology development, and overall supervision of the study. Ioannis Assiouras contributed to the theoretical framework, critical revision of the manuscript, and interpretation of the findings.

Conflict of interest statement

Authors state no conflict of interest.

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Appendix

COST	
UCON	0.725
ACON	0.606
COMP	0.430
ENJOY	0.516
RISK	0.344
BELONG	0.348
SHARING	0.534
SOCIA	0.436
UTIL	0.714
HED	0.564
SOCVAL	0.439
ANTI	0.155
ENVIRO	0.272
NOVEL	0.310
NORMS	0.227
INTENT	0.479
ACT	0.538

Table A1. Correlation matrix results of constructs.

COST, Costs; UCON, Usage Convenience; ACON, Access Convenience; COMP, Complexity; ENJOY, Enjoyment; RISK, Perceived Risk; BELONG, Sense of Belonging; SHARING, Sharing Behavior; SOCIA, Sense of Sociability; UTIL, Utilitarian Value; HEDON, Hedonic Value; SOCVAL, Social Value; NORMS, Social Norms; ANTI, Anti Consumption Behavior; NOVELTY, Novelty Seeking Behavior; ENVIRO, Environmental Behavior; INTENT, Usage Intention; ACT, Actual Usage Behavior.

Source: Authors' own analysis.

Path	Std. estimate	p	Hypothesis	p (Female)	p (Male)	CMIN (Gender)	p (Gender)	p (Young)	p (Old)	CMIN (Age)	p (Age)
ACT ← INTENT	0.038	***	Supported	***	***	0.006	0.939	***	***	0.319	0.572
HEDON ← COMPLEX	0.045	***	Supported	***	***	0.195	0.659	***	***	0.281	0.596
HEDON ← SOCIA	0.043	0.974	Not supported	0.797	0.738	0.165	0.684	0.936	0.626	1.363	0.243
HEDON ← UCON	0.047	0.218	Not supported	0.189	0.348	0.011	0.918	0.353	0.218	2.100	0.147
HEDON ← RISKS	0.032	0.044	Supported	0.739	0.018	2.632	0.105	0.683	0.027	0.392	0.531
HEDON ← SHARING	0.046	0.039	Supported	0.066	0.159	0.078	0.780	0.048	0.292	0.013	0.909
HEDON ← BELONG	0.036	0.030	Supported	0.462	0.063	0.306	0.580	0.003	0.833	0.210	0.647
HEDON ← COST	0.039	0.014	Supported	0.017	0.438	0.728	0.394	0.733	0.008	0.033	0.856
HEDON ← ENJOY	0.034	0.014	Supported	0.657	0.001	4.280	0.039	0.034	0.033	0.600	0.439
HEDON ← ACON	0.053	0.005	Supported	0.020	0.078	0.339	0.560	0.077	0.015	2.811	0.094
INTENT ← UTIL	0.043	***	Supported	***	***	0.845	0.358	***	***	1.909	0.167
INTENT ← HEDON	0.049	***	Supported	***	0.002	0.002	0.963	0.002	***	0.239	0.625
INTENT ← NORMS	0.027	***	Supported	***	***	1.911	0.167	***	***	0.200	0.655
INTENT ← ANTI	0.038	***	Supported	0.020	0.002	0.122	0.727	0.029	0.004	0.845	0.358
INTENT ← NOVELTY	0.043	***	Supported	***	***	0.379	0.538	***	***	0.001	0.979
INTENT ← ENVIRO	0.040	0.064	Not supported	0.470	0.058	1.974	0.160	0.154	0.092	0.236	0.627
INTENT ← SOCVAL	0.032	0.018	Supported	0.044	0.011	0.374	0.540	0.009	0.372	0.978	0.323
SOCVAL ← ENJOY	0.040	***	Supported	***	***	1.252	0.263	***	***	1.995	0.158
SOCVAL ← BELONG	0.043	***	Supported	0.021	0.002	0.009	0.926	0.064	***	2.494	0.114
SOCVAL ← SHARING	0.056	***	Supported	***	***	1.258	0.262	***	***	0.026	0.871
SOCVAL ← SOCIA	0.051	***	Supported	0.035	***	0.385	0.535	0.007	0.002	0.524	0.010
SOCVAL ← COST	0.046	0.735	Not supported	0.664	0.292	1.176	0.278	0.814	0.673	0.250	0.617
SOCVAL ← UCON	0.056	0.713	Not supported	0.739	0.408	0.706	0.401	0.665	0.494	0.061	0.805
SOCVAL ← RISKS	0.037	0.531	Not supported	0.899	0.140	1.057	0.304	0.764	0.273	0.379	0.538
SOCVAL ← COMPLEX	0.052	0.507	Not supported	0.598	0.906	0.102	0.750	0.962	0.463	5.050	0.025
SOCVAL ← ACON	0.062	0.185	Not supported	0.065	0.733	2.696	0.101	0.088	0.699	0.973	0.324
UTIL ← COST	0.034	***	Supported	***	0.001	0.288	0.592	***	***	1.731	0.188
UTIL ← UCON	0.041	***	Supported	***	0.004	0.529	0.467	0.002	***	0.035	0.851
UTIL ← ACON	0.045	***	Supported	***	0.030	1.342	0.247	0.061	***	0.080	0.777
UTIL ← COMPLEX	0.038	***	Supported	***	***	1.451	0.228	***	***	0.003	0.957
UTIL ← BELONG	0.031	0.900	Not supported	0.276	0.566	1.465	0.226	0.436	0.111	0.243	0.622

(Continued)

Table A2: *Continued*

Path		Std. estimate	p	Hypothesis	p (Female)	p (Male)	CMIN (Gender)	p (Gender)	p (Young)	p (Old)	CMIN (Age)	p (Age)
UTIL	← SOCIA	0.037	0.536	Not supported	0.127	0.494	2.557	0.110	0.050	0.092	0.535	0.465
UTIL	← ENJOY	0.029	0.032	Supported	0.445	0.030	1.049	0.306	0.201	0.009	0.596	0.440
UTIL	← SHARING	0.040	0.012	Supported	0.069	0.061	0.002	0.963	0.340	0.004	0.320	0.572
UTIL	← RISKS	0.027	0.002	Supported	0.219	***	3.263	0.071	0.035	0.001	0.017	0.896

Table A2. Multi-group split to test the model's stability across sub-samples.

COST, Costs; UCON, Usage Convenience; ACON, Access Convenience; COMPLEX, Complexity; ENJOY, Enjoyment; RISK, Perceived Risk; BELONG, Sense of Belonging; SHARING, Sharing Behavior; SOCIA, Sense of Sociability; UTIL, Utilitarian Value; HEDON, Hedonic Value; SOCVAL, Social Value; NORMS, Social Norms; ANTI, Anti-consumption Behavior; NOVELTY, Novelty Seeking Behavior; ENVIRO, Environmental Behavior; INTENT, Usage Intention; ACT, Actual Usage Behavior.