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Value Co-Creation in AI-Based Technology Adoption: From Service-Dominant Logic to Intelligent Digital Ecosystems

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ABSTRACT

The rapid expansion of AI-enabled digital ecosystems has shifted technology adoption from purely functional evaluation to interactive, personalized, and co-created user experiences. However, existing studies remain largely rooted in cognitive perspectives and have not fully addressed the roles of va lue co-creation, perceived value, psychological ownership, and relational engagement. This study conducts a systematic literature review with thematic analysis to examine the evolution of value co-creation from Service-Dominant Logic to intelligent digital ecosystems and its implications for AI-based technology adoption. Findings reveal that adoption increasingly occurs through ecosystem interaction, participatory engagement, and personalization rather than solely functional assessment. Key mechanisms shaping adoption intention include perceived value, psychological ownership, ecosystem trust, and relational engagement. The study contributes by extending traditional technology acceptance models toward an ecosystem-based perspective grounded in value co-creation and intelligent digital interaction. Practically, it offers insights for organizations and platform providers in designing AI-enabled ecosystems that enhance engagement, trust, and sustainable adoption.

INTRODUCTION

Over the past two decades, digital transformation has fundamentally reshaped how value is created and delivered within business environments. The emergence of platform-based models, artificial intelligence (AI), and data-driven infrastructures has shifted value creation from linear processes toward interconnected digital ecosystems, where multiple actors interact continuously to co-create value (Nambisan et al., 2017; Verhoef, 2021). Within these ecosystems, firms no longer act solely as value producers but as orchestrators of interactions among users, partners, and intelligent technologies.

The rapid expansion of AI-enabled digital ecosystems has fundamentally transformed how users interact with technology across organizational, commercial, and educational environments(Huang & Rust, 2021; Verhoef, 2021). Digital interaction is no longer characterized solely by passive technology usage, but increasingly involves adaptive engagement, personalization, ecosystem participation, and co-created user experiences (Prahalad & Ramaswamy, 2004; Ramaswamy & Ozcan, 2018). In intelligent digital environments, users actively participate in shaping value through continuous interaction with platforms, algorithms, and AI-driven services (Merz et al., 2021; Vargo & Lusch, 2016).

The conceptual foundation of this transformation can be traced to Service-Dominant Logic (SDL), which redefined value as co-created through resource integration rather than embedded in products (Vargo & Lusch, 2004, 2008). Core concepts such as value-in-use and value-in-context emphasize that value emerges through experiential and contextual interactions among actors (Chandler & Vargo, 2011; Grönroos, 2011). This paradigm shift positioned customers as active participants in value formation, laying the groundwork for the development of value co-creation (VCC) as a central construct in marketing and service research.

As the literature evolved, VCC was operationalized through constructs such as customer engagement, resource integration, and actor participation within service ecosystems (Brodie et al., 2011; Ranjan & Read, 2016; Storbacka, 2016). The rapid growth of digital platforms further expanded the scope of co-creation by enabling scalable interaction through social commerce, mobile applications, and personalized digital services (Cheung, 2022; Merz et al., 2021). More recently, AI technologies have transformed co-creation into an algorithmically mediated process, where intelligent systems actively participate in shaping user experiences and value outcomes (Davenport et al., 2019; Huang & Rust, 2020).

Despite these developments, research on technology adoption remains largely dominated by cognitively oriented models, particularly the Technology Acceptance Model (TAM), which explains adoption based on perceived usefulness and perceived ease of use (Davis, 1989; Venkatesh et al., 2003). While these models have demonstrated strong explanatory power, they primarily focus on individual evaluation and may not fully capture relational, experiential, and ecosystem-based dynamics that characterize contemporary digital environments (Grewal et al., 2020; Venkatesh et al., 2022).

Despite its extensive application in technology adoption research, the Technology Acceptance Model (TAM) remains predominantly grounded in individual cognitive evaluation, particularly perceived usefulness and perceived ease of use (Davis, 1989). While this perspective has been effective in explaining conventional technology adoption, it becomes increasingly limited within AI-enabled digital ecosystems where user interaction is shaped by personalization, ecosystem trust, adaptive engagement, and co-created experiences (Huang & Rust, 2021; Verhoef, 2021). Consequently, traditional TAM frameworks may not sufficiently capture the relational and ecosystem-based mechanisms underlying contemporary AI-based technology adoption behavior.

Although the literature on value co-creation has grown substantially, its development remains fragmented across different theoretical and empirical streams. First, there is a lack

of longitudinal synthesis that systematically traces the evolution of VCC from its conceptual origins in SDL to its current integration within AI-driven digital ecosystems. Existing studies tend to focus on specific aspects of co-creation without capturing the broader structural transformation of the field (Jacobides et al., 2021b, 2021a; Nambisan et al., 2017).

Second, there is a limited theoretical integration between VCC and technology adoption models. While some studies have incorporated perceived value and engagement into extended TAM frameworks, these efforts often treat VCC as a complementary variable rather than a foundational mechanism shaping adoption processes (H. W. Kim et al., 2007; Shang & Wu, 2023). As a result, the relationship between co-creation processes and cognitive evaluation constructs remains conceptually underdeveloped.

Although value co-creation research has evolved significantly from Service-Dominant Logic toward intelligent digital ecosystems (Vargo & Lusch, 2004, 2016), existing studies largely examine value co-creation and technology adoption as separate theoretical domains. Current literature has not sufficiently explained how co-created value, ecosystem interaction, and AI-mediated engagement collectively shape technology adoption behavior (Prahalad & Ramaswamy, 2004; Ramaswamy & Ozcan, 2018). As a result, the role of value co-creation as an ecosystem-based mechanism underlying AI technology adoption remains theoretically underdeveloped (Huang & Rust, 2021; Merz et al., 2021).

Third, the rapid emergence of AI-enabled ecosystems introduces new dynamics that are not adequately captured in traditional adoption models. AI-driven personalization, platform ecosystems, and fintech innovations highlight the importance of trust, governance, and user experience in shaping adoption behavior (Ceccagnoli et al., 2020; Cheng et al., 2021b, 2021a; Dwivedi et al., 2022; Gomber et al., 2020). Additionally, constructs such as psychological ownership and personalization have gained increasing attention in explaining user engagement and continued usage in digital environments (Peck & Shu, 2020; Xu et al., 2022).

The absence of an ecosystem-based understanding of AI technology adoption has important implications for organizations, digital platform providers, and educational institutions implementing intelligent technologies (Verhoef, 2021). Without understanding how value co-creation, engagement, trust, and perceived value influence adoption behavior, AI implementation strategies may remain overly technology-centered and fail to generate meaningful user participation and sustained adoption (Dwivedi, 2023; Huang & Rust, 2021). This challenge is particularly relevant within educational environments, where successful adoption of AI-based technologies increasingly depends on interactive engagement, personalization, and co-created learning experiences rather than technical functionality alone (Bond et al., 2021).

This study specifically focuses on reconceptualizing AI-based technology adoption through the lens of value co-creation by synthesizing the evolution of Service-Dominant Logic, ecosystem interaction, and intelligent digital ecosystem literature (Ramaswamy & Ozcan, 2018; Vargo & Lusch, 2016).

In response to these gaps, this study adopts a PRISMA-guided systematic literature review to synthesize the evolution of value co-creation from 2004 to 2026 and to examine its theoretical convergence with technology adoption research. By integrating bibliometric analysis and thematic coding, this study identifies key developmental phases, thematic clusters, and structural relationships between VCC and TAM.

This research positions value co-creation as a **structural antecedent** that shapes engagement and perceived value, which subsequently influence perceived usefulness, perceived ease of use, and technology adoption intention. Furthermore, the study proposes an ecosystem-based Extended TAM that incorporates digital marketing strategy as a driver of co-creation, with AI capability and ecosystem trust as moderating variables.

Accordingly, this study aims to provide a state-of-the-art systematic literature review examining the evolution of value co-creation from Service-Dominant Logic to intelligent digital ecosystems and its implications for AI-based technology adoption. By integrating value co-creation, ecosystem interaction, and technology acceptance perspectives, this study proposes an ecosystem-based conceptual foundation for understanding adoption behavior within AI-enabled environments, particularly in digital and educational technology contexts (Huang & Rust, 2021; Verhoef, 2021).

LITERATURE REVIEW

Service-Dominant Logic and Value Co-Creation

Value co-creation (VCC) originates from the paradigm shift introduced by Service-Dominant Logic (SDL), which redefines value as co-created through resource integration rather than embedded in products (Vargo & Lusch, 2004, 2008). Within this perspective, value is realized through use and contextual interaction, commonly referred to as value-in-use and value-in-context (Chandler & Vargo, 2011; Grönroos, 2011). This foundational shift moves the locus of value creation from firm-centric production toward interaction-centric processes involving multiple actors.

Subsequent research expands SDL by emphasizing experiential and relational dimensions of value formation. Co-creation is not limited to dyadic firm–customer interaction but occurs within networks of actors integrating operant and operand resources (Payne et al., 2008; Prahalad & Ramaswamy, 2004). This perspective establishes VCC as a dynamic and context-dependent process, forming the theoretical basis for understanding value creation in contemporary digital ecosystems.

Recent studies increasingly indicate that technology adoption within educational digital ecosystems cannot be adequately explained solely through traditional Technology Acceptance Model variables such as perceived usefulness and perceived ease of use. Instead, value co-creation, collaborative interaction, ethical engagement, and relational participation play increasingly important roles in shaping users' adoption intention and sustained technology use. In educational technology contexts, the integration of value co-creation and Extended Technology Acceptance Models demonstrates that participatory interaction and ecosystem-based collaboration significantly contribute to strengthening technology engagement and digital adoption behavior among educators (Wijoyo et al., 2026). Therefore, AI-based technology adoption should be understood not only as a functional technology acceptance process, but also as a multidimensional ecosystem interaction involving experiential, relational, and co-created value formation.

Perceived Value in AI-Based Technology Adoption

Perceived value represents users' overall evaluation of the benefits obtained from technology interaction relative to the sacrifices or costs incurred (Zeithaml, 1988). Within value co-creation contexts, perceived value is not generated solely through product or system functionality, but emerges through interactive experiences, personalization, engagement, and relational participation among users and digital platforms (Prahalad & Ramaswamy, 2004; Ramaswamy & Ozcan, 2018).

In AI-enabled digital ecosystems, perceived value increasingly develops through adaptive interaction, intelligent recommendations, personalization, and real-time service responsiveness (Huang & Rust, 2021). This suggests that users evaluate AI-based technologies not only based on technical usefulness but also based on experiential, relational, and co-created value dimensions. Consequently, perceived value becomes a critical mechanism linking value co-creation processes to technology adoption behavior within intelligent digital environments.

Psychological Ownership in Digital Ecosystems

Psychological ownership refers to the feeling that a target object, service, or platform is perceived as "mine" by users despite the absence of legal ownership (Pierce et al., 2001). Within digital ecosystems, psychological ownership emerges through active participation, personalization, control, and co-creation experiences that strengthen users' emotional attachment toward digital platforms and technologies (Jussila et al., 2015).

In AI-based environments, users increasingly interact with intelligent systems through adaptive and personalized engagement processes. Such interaction may strengthen users' sense of involvement, identity expression, and emotional connection toward AI-enabled platforms. As a result, psychological ownership becomes an important relational mechanism that may reinforce trust, engagement, and sustained technology adoption behavior within intelligent digital ecosystems.

Adoption Intention in AI-Based Technology Contexts

Adoption intention refers to an individual's willingness or likelihood to use a particular technology or system (Davis, 1989). Within traditional technology acceptance research, adoption intention is primarily explained through cognitive perceptions such as perceived usefulness and perceived ease of use. However, in AI-enabled digital ecosystems, adoption intention increasingly depends on relational interaction, personalization, ecosystem trust, and co-created user experiences (Huang & Rust, 2021).

From a value co-creation perspective, adoption intention is not solely driven by technological functionality but also by users' perceived participation, emotional engagement, and experiential value obtained through interaction with intelligent systems. This indicates that AI-based technology adoption should be understood as an ecosystem-based and co-created process rather than merely an individual cognitive decision.

Customer Engagement and Service Ecosystems

Following its conceptual foundation, VCC was operationalized through measurable constructs, particularly customer engagement. Engagement captures cognitive, emotional, and behavioral participation in value creation processes (Brodie et al., 2011). This construct enables empirical examination of co-creation by linking interaction intensity with value outcomes.

At the same time, service ecosystem theory extends the analytical scope beyond dyadic interaction to multi-actor systems governed by institutional arrangements and shared practices (Lusch & Nambisan, 2015; Storbacka, 2016). Actor engagement becomes a network-level phenomenon where value emerges through continuous resource integration across interconnected actors (Jaakkola & Alexander, 2014; Ranjan & Read, 2016).

This phase also introduced validated measurement scales for co-creation, distinguishing between co-production and value-in-use dimensions, thereby strengthening the empirical rigor of VCC research (Ranjan & Read, 2016). As a result, engagement serves as a critical mechanism linking co-creation processes to perceived value formation.

Digital Platforms and Co-Creation Integration

The proliferation of digital platforms significantly transforms co-creation processes by enabling scalable and real-time interaction. Social commerce, mobile applications, and digital marketing platforms facilitate continuous engagement and participatory experiences (W.-L. Shiau et al., 2018; Zhang et al., 2018). In these environments, digital interaction quality such as usability, responsiveness, and personalization becomes a key determinant of perceived value and user engagement.

Research in digital marketing and platform ecosystems highlights that co-creation is increasingly embedded within technological infrastructures (Cheung, 2022; Merz et al., 2021). Digital platforms function as enablers of resource integration, allowing users to contribute content, customize services, and participate in value formation processes.

Furthermore, digital transformation research suggests that co-creation and technology adoption are interdependent rather than sequential processes (Dwivedi et al., 2021; Verhoef et al., 2021). This integration marks a transition from interaction-based value creation toward technologically mediated co-creation within platform ecosystems.

Technology Adoption and Extended TAM

Technology adoption research has traditionally been dominated by the Technology Acceptance Model (TAM), which explains user behavior based on perceived usefulness (PU) and perceived ease of use (PEOU) (Davis, 1989; Venkatesh et al., 2003). While TAM demonstrates strong predictive power, it primarily reflects a cognitive evaluation framework that may not fully capture relational and experiential aspects of digital interaction.

To address these limitations, the Value-Based Adoption Model introduces perceived value as a key determinant of adoption, incorporating benefit–sacrifice evaluations (H. W. Kim et al., 2007). More recent studies extend TAM by integrating engagement and co-creation constructs, suggesting that participatory experiences influence perceived usefulness and adoption intention (Baabdullah, 2023; Rather et al., 2022; Shang & Wu, 2023).

These developments indicate that co-creation processes influence cognitive evaluation mechanisms. Engagement and perceived value act as mediating constructs linking interaction experiences with adoption decisions, thereby extending TAM beyond its traditional utilitarian logic.

AI, Ecosystem Trust, and Intelligent Digital Environments

The emergence of artificial intelligence (AI) introduces a new dimension to value co-creation by incorporating non-human actors into interaction processes. AI-enabled systems facilitate personalization, predictive analytics, and adaptive interaction, transforming co-creation into a hybrid human–machine process (Davenport et al., 2019; Huang & Rust, 2020, 2022).

In addition, platform ecosystems and fintech environments highlight the importance of trust and governance in shaping adoption behavior. Ecosystem trust related to data security, transparency, and institutional reliability plays a critical role in mediating the relationship between perceived value and adoption intention (Cheng et al., 2021b; Gomber et al., 2020; Royo-Vela, 2024).

Emerging contexts such as metaverse marketing and platform ecosystems further extend co-creation into immersive and interconnected environments (Dwivedi et al., 2022; Lee et al., 2021; Shen et al., 2023). These environments also create new opportunities for digital advertising and interactive engagement within virtual worlds (J. Kim, 2021). Within these settings, psychological ownership and personalization become key drivers of engagement and sustained usage (Kirk et al., 2020; Peck & Shu, 2020; Xu et al., 2022). AI technologies can also be understood through their functional building blocks, enabling innovation in co-creation processes and marketing automation (Paschen et al., 2020).

Conceptual Integration and Research Model Foundation

Based on the literature synthesis, value co-creation can be conceptualized as a central mechanism linking digital marketing strategy, engagement, perceived value, and

technology adoption. Digital marketing activities act as upstream drivers that stimulate co-creation through interactive and personalized experiences (Alalwan et al., 2023).

Co-creation processes generate engagement and perceived value, which subsequently influence perceived usefulness and perceived ease of use. These cognitive evaluations ultimately determine adoption intention, consistent with extended TAM frameworks (Venkatesh et al., 2022).

Furthermore, AI capability and ecosystem trust function as contextual factors that strengthen or weaken these relationships. AI enhances personalization and interaction quality, while trust ensures confidence in digital platforms and governance systems. This integrated perspective forms the theoretical foundation for an ecosystem-based Extended TAM, where technology adoption is understood as the outcome of co-created value within intelligent digital ecosystems.

CONCEPTUAL MODEL AND HYPOTHESES

Conceptual Model Development

Building upon the systematic literature review, this study develops an ecosystem-based conceptual model that integrates value co-creation (VCC) into the Technology Acceptance Model (TAM). Unlike traditional TAM, which positions perceived usefulness (PU) and perceived ease of use (PEOU) as primary antecedents of adoption, this model reconceptualizes VCC as a **structural antecedent** that shapes cognitive evaluations through relational and experiential processes.

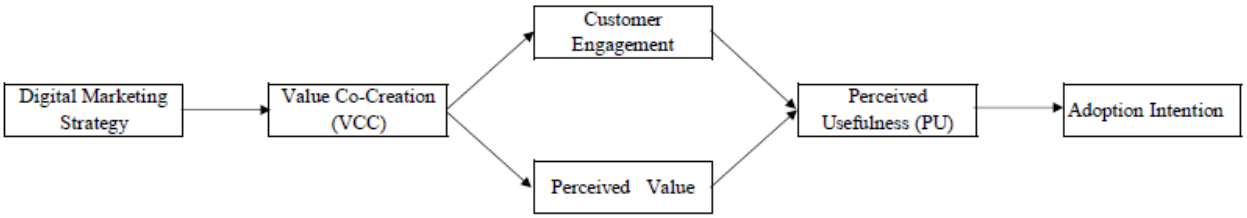
Digital marketing strategy is positioned as an upstream driver that facilitates interaction, personalization, and user participation within digital platforms (Alalwan et al., 2023; Dwivedi, 2023). These strategic mechanisms stimulate value co-creation by enabling users to actively engage in resource integration and experience formation.

Value co-creation subsequently generates customer engagement and perceived value. Engagement reflects the intensity of cognitive, emotional, and behavioral participation (Brodie et al., 2011), while perceived value captures the overall evaluation of benefits relative to sacrifices (H. W. Kim et al., 2007). These constructs act as mediating mechanisms that translate participatory experiences into cognitive perceptions.

At the evaluative stage, perceived usefulness and perceived ease of use are no longer treated as purely technical perceptions but as outcomes shaped by engagement and co-created value (Shang & Wu, 2023; Venkatesh et al., 2022). Adoption intention is therefore conceptualized as the result of an ecosystem-based value formation process rather than isolated cognitive evaluation.

Furthermore, the model incorporates AI capability and ecosystem trust as moderating variables. AI capability enhances personalization and adaptive interaction, strengthening the relationship between VCC and engagement (Davenport et al., 2019; Huang & Rust, 2020). Ecosystem trust, particularly relevant in fintech and platform contexts, strengthens the relationship between perceived value and adoption intention by reducing uncertainty and perceived risk (Cheng et al., 2021b; Royo-Vela, 2024).

Conceptual Model



Perceived Ease of Use (PEOU) → Adoption Intention

Moderators:
AI Capability (VCC → Engagement)
Ecosystem Trust (Value → Adoption)
Psychological Ownership (VCC → Adoption)

HYPOTHESES DEVELOPMENT

Digital Marketing → VCC

Digital marketing strategies enable interactive and personalized experiences that facilitate user participation and resource integration. Through mechanisms such as social media engagement, content co-creation, and platform interactivity, marketing activities stimulate value co-creation processes (Alalwan et al., 2023; Dwivedi, 2023).

H1: Digital marketing strategy positively influences value co-creation.

VCC → Engagement

Value co-creation inherently involves active participation, which enhances cognitive, emotional, and behavioral engagement. The more users are involved in co-creation processes, the higher their level of engagement within the platform (Brodie et al., 2011; Ranjan & Read, 2016).

H2: Value co-creation positively influences customer engagement.

VCC → Perceived Value

Co-creation allows users to tailor experiences and derive personalized benefits, increasing perceived value. Participatory interaction enhances both functional and experiential value perceptions (H. W. Kim et al., 2007; Merz et al., 2021).

H3: Value co-creation positively influences perceived value.

Engagement → Perceived Usefulness

Engaged users develop deeper familiarity and involvement with technology, which enhances their perception of usefulness. Interaction intensity strengthens perceived performance benefits (Baabdullah, 2023; W. L. Shiau & Dwivedi, 2023).

H4: Customer engaement positively influences perceived usefulness.

Perceived Value → Perceived Usefulness

Perceived value influences how users evaluate the utility of a system. Higher perceived benefits lead to stronger perceptions of usefulness (H. W. Kim et al., 2007; Shang & Wu, 2023).

H5: Perceived value positively influences perceived usefulness.

Perceived Usefulness → Adoption

Consistent with TAM, perceived usefulness remains a key determinant of adoption intention (Davis, 1989; Venkatesh et al., 2003).

H6: Perceived usefulness positively influences adoption intention.

Perceived Ease of Use → Adoption

Ease of use reduces cognitive effort and enhances user acceptance of technology (Davis, 1989).

H7: Perceived ease of use positively influences adoption intention.

AI Capability as Moderator

AI enhances personalization and interaction quality, strengthening the relationship between co-creation and engagement (Huang & Rust, 2020; Xu et al., 2022).

H8: AI capability strengthens the relationship between value co-creation and customer engagement.

Ecosystem Trust as Moderator

Trust reduces uncertainty and increases confidence in digital platforms, strengthening the effect of perceived value on adoption (Cheng et al., 2021b; Royo-Vela, 2024).

H9: Ecosystem trust strengthens the relationship between perceived value and adoption intention.

Psychological Ownership as Mediator

Co-creation fosters a sense of ownership, which enhances emotional attachment and increases adoption likelihood (Kirk et al., 2020; Peck & Shu, 2020).

H10: Psychological ownership mediates the relationship between value co-creation and adoption intention.

METHOD

Research Design

This study employs a **systematic literature review (SLR)** guided by the PRISMA 2020 framework to ensure transparency, rigor, and replicability in the review process (Page et al., 2021). The PRISMA approach provides a structured procedure for identifying, screening, and selecting relevant studies, making it suitable for synthesizing the evolution of value co-creation (VCC) and its integration with technology adoption research.

To achieve a comprehensive understanding, this study combines **bibliometric analysis** and **thematic analysis**. Bibliometric analysis is used to map publication trends, citation structures, and keyword evolution, while thematic analysis is applied to identify conceptual patterns and theoretical convergence across studies. The temporal scope of the review spans from **2004 to 2026**, covering the emergence of Service-Dominant Logic to the development of AI-enabled digital ecosystems.

Thematic Coding and Theme Development

To systematically synthesize the selected studies, this research employed thematic analysis following an iterative coding and categorization process adapted from (Braun & Clarke, 2006). Thematic analysis was used to identify recurring conceptual patterns, relational constructs, and emerging ecosystem perspectives related to value co-creation and AI-based technology adoption.

The coding process was conducted in several stages. First, all selected articles were reviewed to identify key concepts, theoretical constructs, and recurring discussions related to value co-creation, ecosystem interaction, perceived value, psychological ownership, and AI-based technology adoption. Second, open coding was applied to extract meaningful conceptual units from the literature. Third, similar codes were grouped into broader conceptual categories to identify thematic relationships across studies. Finally, higher-order themes were developed through interpretive synthesis to explain the evolution of value co-creation from Service-Dominant Logic toward intelligent digital ecosystems.

Table 1. Example of Thematic Coding and Theme Formation

Extracted Concept from Literature	Initial Code	Category	Emerging Theme
User participation in digital interaction	Participatory engagement	Interactional process	Value Co-Creation
Personalized AI recommendation systems	Adaptive personalization	AI-enabled interaction	Intelligent Digital Ecosystem
Emotional attachment to platform	Psychological connection	Relational attachment	Psychological Ownership
Perceived usefulness of AI systems	Functional evaluation	Cognitive perception	Adoption Intention
Trust toward platform algorithms	Ecosystem trust	Governance mechanism	AI-Based Technology Adoption

The thematic synthesis process enabled the identification of several dominant themes, including value co-creation, ecosystem interaction, perceived value formation, psychological ownership, ecosystem trust, and AI-based technology adoption. These themes were subsequently interpreted relationally to construct an ecosystem-based understanding of technology adoption within intelligent digital environments.

Rather than merely summarizing previous studies, the thematic analysis was used to develop an integrative conceptual synthesis explaining how value co-creation evolves from Service-Dominant Logic into AI-mediated ecosystem interaction and how this evolution reshapes contemporary technology adoption behavior.

Data Collection and Search Strategy

The dataset was collected from the **Scopus database**, which provides high-quality and peer-reviewed publications across marketing, management, and information systems disciplines. The search process was conducted in early 2026 to ensure the inclusion of the most recent studies.

The search query was constructed using a combination of keywords related to value co-creation and technology adoption, as follows:
("value co-creation" OR "co-creation of value") AND ("technology adoption" OR "technology acceptance" OR "TAM" OR "digital marketing" OR "platform ecosystem" OR "AI-enabled service"). The search was limited to title, abstract, and keywords to ensure conceptual relevance. Boolean operators were applied to refine the search and ensure intersection between co-creation and adoption-related constructs.

Inclusion and Exclusion Criteria

To ensure consistency and quality, explicit inclusion and exclusion criteria were established prior to the screening process.

Inclusion Criteria:

1. Articles published in Q1-indexed journals
2. Studies with DOI availability
3. Publications between 2004–2026
4. Research focusing on value co-creation and/or technology adoption
5. Peer-reviewed journal articles written in English

Exclusion Criteria:

1. Conference papers, book chapters, and editorial notes
2. Studies without theoretical relevance to VCC
3. Articles discussing technology adoption without value-related constructs
4. Studies mentioning co-creation only descriptively without conceptual development

These criteria ensure that the selected articles are both theoretically relevant and methodologically rigorous.

PRISMA Screening Process

The selection process followed the four stages of the PRISMA framework: identification, screening, eligibility, and inclusion (Page et al., 2021).

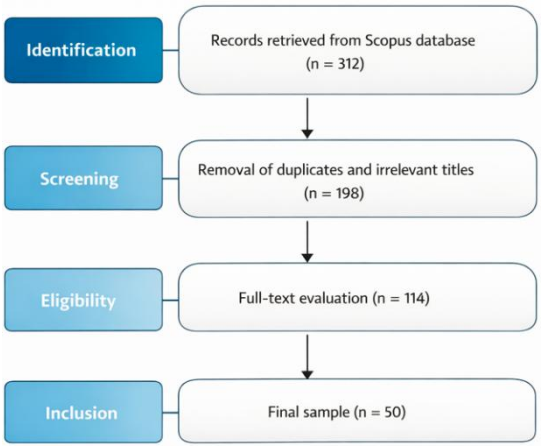
1. **Identification**
   Articles were retrieved from the Scopus database based on the defined search query.
2. **Screening**
   Duplicate records were removed, and titles and abstracts were reviewed to assess relevance.

3. **Eligibility**
   Full-text articles were evaluated to ensure conceptual alignment with value co-creation and technology adoption.
4. **Inclusion**
   A final sample of **50 articles** was selected for bibliometric and thematic analysis.

PRISMA Flow Summary

Table. 2 Prisma Flow Summary

Stage	Description
Identification	Records retrieved
Screening	Removal of duplicates and irrelevant titles
Eligbility	Full-text evaluation
Inclusion	Final sampel (n=50)



Bibliometric Analysis

Bibliometric analysis was conducted to examine the structural characteristics of the selected literature. The analysis includes:

1. Publication trend analysis to identify growth patterns over time
2. Citation analysis to determine influential studies and intellectual clusters
3. Keyword co-occurrence analysis to identify dominant themes and conceptual relationships.

This approach enables the identification of research trajectories and thematic evolution within the VCC literature.

Thematic Coding Procedure

To complement the bibliometric analysis, this study employs a three-stage thematic coding process adapted from grounded theory methodology.

Table. 3 Coding Stages

Stage	Description	Output
Open Coding	Identification of key concepts (VCC, engagement, AI, trust, TAM variables)	Initial codes

Axial Coding	Grouping of concepts into categories and relationships	Thematic categories
Selective Coding	Integration of categories into core themes (5 evolutionary phases)	Final conceptual model

During the open coding stage, key constructs such as value co-creation, engagement, perceived value, AI capability, and trust were identified.

In the axial coding stage, relationships between constructs were established, such as:

1. VCC → engagement
2. VCC → perceived value
3. engagement → perceived usefulness

In the selective coding stage, these relationships were integrated into five major thematic phases reflecting the evolution of VCC.

Inter-Coder Reliability

To ensure analytical consistency and reduce subjective bias, the coding process was conducted by two independent coders. Inter-coder reliability was assessed using Cohen's Kappa coefficient.

The result shows a Kappa value of 0.87, indicating a strong level of agreement and high reliability of the coding process. This confirms that the thematic categorization and interpretation are robust and replicable.

RESULTS AND DISCUSSION

Bibliometric Findings

Publication Trend

The analysis of publication trends reveals a significant growth in value co-creation (VCC) research over the past two decades. The early period (2004–2010) is characterized by conceptual contributions rooted in Service-Dominant Logic, which established the theoretical foundation of co-creation (Vargo & Lusch, 2004, 2008). During this phase, the number of publications remained relatively limited, reflecting the exploratory nature of the paradigm.

Between 2011 and 2016, publication output increased steadily, corresponding with the operationalization of VCC through constructs such as customer engagement and service ecosystems (Brodie et al., 2011; Ranjan & Read, 2016; Storbacka, 2016). This period marks a transition from conceptual development to empirical validation.

A substantial increase in publications is observed after 2018, driven by the integration of VCC into digital platforms, mobile technologies, and technology adoption contexts (Dwivedi et al., 2020; Verhoef et al., 2021). The most rapid growth occurs in the 2021–2026 period, reflecting the emergence of AI-enabled ecosystems and intelligent digital platforms (Dwivedi et al., 2022; Huang & Rust, 2020). This trend indicates that VCC has evolved into a central construct in digital and technology-driven research.

Citation and Thematic Clusters

The citation analysis identifies four major intellectual clusters within the literature.

The first cluster consists of foundational studies on Service-Dominant Logic and value-in-use, which form the theoretical basis of VCC (Grönroos, 2011; Vargo & Lusch, 2004, 2008). The second cluster focuses on customer engagement and service ecosystems, emphasizing actor participation and resource integration (Brodie et al., 2011; Storbacka, 2016).

The third cluster integrates VCC with technology adoption models, particularly TAM and value-based adoption frameworks (Davis, 1989; H. W. Kim et al., 2007; Venkatesh et al., 2003). The fourth and most recent cluster highlights AI-driven co-creation, platform ecosystems, and digital transformation (Dwivedi et al., 2022; Huang & Rust, 2020; Nambisan et al., 2017). These clusters demonstrate a cumulative evolution of the field, where new research builds upon and extends earlier theoretical foundations rather than replacing them.

Keyword Evolution

Keyword analysis shows a clear shift in research focus over time. Early studies emphasize concepts such as "service-dominant logic," "value-in-use," and "co-creation experience." In the middle phase, terms such as "customer engagement," "service ecosystem," and "resource integration" become dominant.

From 2016 onward, digitalization introduces keywords such as "mobile apps," "digital marketing," and "technology adoption." In the most recent phase, keywords such as "artificial intelligence," "metaverse," "platform ecosystem," and "psychological ownership" emerge as central themes (Dwivedi et al., 2022; Shen et al., 2023; Xu et al., 2022). This progression reflects a shift from conceptual and relational perspectives toward technologically mediated and ecosystem-based co-creation.

Thematic Analysis: Evolution of Value Co-Creation

Phase 1: Conceptual Paradigm Formation (2004–2010)

The first phase establishes the philosophical foundation of value co-creation through Service-Dominant Logic. Value is conceptualized as emerging through interaction and use rather than being embedded in products (Vargo & Lusch, 2004, 2008). Concepts such as value-in-use and co-creation experience emphasize the experiential and contextual nature of value (Chandler & Vargo, 2011; Grönroos, 2011). This phase marks a fundamental shift from firm-centric to interaction-centric value creation, positioning customers as active participants in the value formation process.

Phase 2: Operational and Measurement Development (2011–2016)

In this phase, VCC is operationalized through measurable constructs, particularly customer engagement (Brodie et al., 2011). Engagement captures cognitive, emotional, and behavioral participation in co-creation processes.

Service ecosystem theory further expands the scope of analysis by emphasizing multi-actor interactions and resource integration (Ranjan & Read, 2016; Storbacka, 2016). This phase strengthens the empirical foundation of VCC through scale development and validation.

Phase 3: Digital Platform Integration (2016–2020)

The third phase is characterized by the integration of VCC into digital platforms. Social commerce, mobile applications, and digital marketing platforms enable scalable interaction and continuous engagement (W.-L. Shiau et al., 2018; Zhang et al., 2018).

Digital interaction quality becomes a key determinant of perceived value and user experience. Co-creation is no longer limited to interpersonal interaction but is embedded within technological infrastructures that facilitate participation and personalization.

Phase 4: Technology Adoption Convergence (2018–2023)

This phase reflects the convergence between VCC and technology adoption research. Extended TAM models begin to incorporate perceived value and engagement as key determinants of adoption (Baabdullah, 2023; H. W. Kim et al., 2007).

Engagement is identified as an antecedent to perceived usefulness and perceived ease of use, indicating that participatory experiences influence cognitive evaluations. This integration marks a shift from purely cognitive models toward relational and experiential adoption frameworks.

Phase 5: AI and Intelligent Ecosystem Era (2023–2026)

The most recent phase introduces AI as an active participant in value co-creation. AI-enabled systems facilitate personalization, predictive analytics, and adaptive interaction, transforming co-creation into a hybrid human–machine process (Davenport et al., 2019; Huang & Rust, 2020).

In addition, emerging contexts such as metaverse marketing, fintech ecosystems, and platform innovation highlight the importance of ecosystem trust and governance (Cheng et al., 2021b; Dwivedi et al., 2022). Psychological ownership and personalization further explain sustained engagement and adoption behavior (Bleier & Eisenbeiss, 2015; Peck & Shu, 2020; Xu et al., 2022).

Integrative Discussion

The findings reveal that value co-creation has evolved through a cumulative and progressive process rather than a discontinuous transformation. Each phase builds upon previous developments, expanding the scope of co-creation from conceptual foundations to technologically mediated ecosystems. A key insight from this study is that VCC functions as a **structural antecedent** in technology adoption. Rather than being a peripheral construct, co-creation shapes engagement and perceived value, which subsequently influence perceived usefulness and adoption intention.

This insight challenges the traditional TAM framework, which assumes that adoption is driven primarily by cognitive evaluation. Instead, the results demonstrate that cognitive perceptions are formed through relational and participatory processes. Furthermore, the integration of AI and ecosystem trust highlights the importance of contextual factors in shaping adoption behavior. AI enhances personalization and interaction quality, while trust ensures confidence in digital platforms. Together, these factors strengthen the relationship between co-created value and adoption intention.

Theoretical Implications

This study contributes to theory in three ways:

1. It establishes a five-phase evolution of value co-creation, providing a structured understanding of its development.
2. It reconceptualizes VCC as a structural antecedent in technology adoption.
3. It extends TAM into an ecosystem-based framework that incorporates AI and trust.

Practical Implications

The findings of this study provide several practical implications for organizations, educational institutions, and digital platform providers implementing AI-based technologies. First, AI adoption strategies should not focus solely on technological functionality and system efficiency, but also on creating interactive, personalized, and co-created user experiences (Huang & Rust, 2021; Ramaswamy & Ozcan, 2018). The thematic synthesis demonstrates that perceived value, ecosystem engagement, and psychological ownership significantly influence users' adoption intention within intelligent digital environments.

Second, organizations should design AI-enabled systems that facilitate participatory interaction, adaptive personalization, and user involvement to strengthen relational engagement and sustained technology adoption (Verhoef et al., 2021). In educational contexts, AI-based learning technologies should support collaborative interaction, personalized learning experiences, and active student participation rather than merely automating instructional processes (Bond et al., 2021).

Third, digital platform providers should recognize that technology adoption increasingly depends on ecosystem trust, emotional attachment, and co-created value formation. Therefore, organizations need to develop user-centered AI ecosystems that enhance transparency, interaction quality, and long-term engagement (Vargo & Lusch, 2016).

Policy Implications

This study also provides important policy implications for governments, educational regulators, and digital governance institutions involved in AI technology implementation. The findings suggest that AI adoption policies should move beyond infrastructure-oriented approaches and increasingly consider ecosystem interaction, user participation, trust development, and digital engagement quality (Dwivedi et al., 2023).

In educational environments, policymakers should encourage the development of AI-based learning ecosystems that support collaborative participation, personalization, and ethical AI interaction (Bond et al., 2021). Policies related to AI governance should also emphasize transparency, user trust, data responsibility, and inclusive digital participation to ensure sustainable adoption within intelligent digital ecosystems (Huang & Rust, 2021).

Furthermore, policymakers should recognize that successful AI implementation depends not only on technological readiness but also on users' perceived value and relational engagement with intelligent systems. Therefore, future AI governance frameworks should integrate technological, social, and ecosystem-based perspectives simultaneously (Verhoef, 2021).

Research Limitations

This study has several limitations that should be acknowledged. First, the study is based on a systematic literature review and thematic synthesis approach, which relies on the interpretation and conceptual integration of existing studies rather than empirical data collection (Braun & Clarke, 2006). Consequently, the findings reflect synthesized conceptual perspectives that may vary depending on article selection and interpretive analysis.

Second, the review primarily focuses on value co-creation and AI-based technology adoption within digital ecosystem contexts, which may limit the generalizability of the findings across different technological environments and organizational settings. Third, the study emphasizes conceptual and theoretical integration rather than empirical model testing. Therefore, future research is encouraged to empirically examine the relationships among value co-creation, perceived value, psychological ownership, and adoption intention within specific AI-based technology contexts.

Future studies may also explore cross-sector comparisons, longitudinal adoption behavior, and the role of emerging AI governance mechanisms in shaping ecosystem-based technology adoption (Dwivedi et al., 2023).

CONCLUSION

This study provides a state-of-the-art conceptual synthesis explaining the evolution of value co-creation from Service-Dominant Logic toward intelligent digital ecosystems and its implications for AI-based technology adoption. The findings demonstrate that technology adoption within AI-enabled environments should no longer be understood solely through individual cognitive evaluation, but increasingly through ecosystem interaction, participatory engagement, co-created experiences, and relational value formation.

This study contributes theoretically by integrating value co-creation, perceived value, psychological ownership, and adoption intention into an ecosystem-based understanding of technology adoption. The thematic synthesis extends traditional Technology Acceptance Model perspectives by demonstrating that AI-based technology adoption emerges through dynamic interaction among users, platforms, intelligent systems, and digital environments rather than through purely functional system evaluation.

The findings also highlight the importance of developing AI-enabled ecosystems that facilitate personalization, ecosystem trust, interactive engagement, and co-created user experiences. These insights are particularly relevant for educational institutions, organizations, and digital platform providers seeking to enhance sustainable AI adoption within increasingly intelligent and adaptive digital environments.

The findings reveal that value co-creation functions as a structural antecedent in technology adoption. Rather than being a supplementary construct, VCC shapes customer engagement and perceived value, which subsequently influence perceived usefulness, perceived ease of use, and adoption intention. This insight challenges the traditional cognitive-centered logic of the Technology Acceptance Model (TAM) and supports a shift toward a relational and ecosystem-oriented perspective.

Furthermore, this study proposes an ecosystem-based Extended TAM that integrates digital marketing strategy as a driver of co-creation and incorporates AI capability and ecosystem trust as critical contextual factors. The inclusion of psychological ownership further enriches the understanding of sustained engagement and adoption behavior within digital environments.

The study contributes theoretically by bridging marketing and information systems perspectives, extending Service-Dominant Logic into human–AI co-creation contexts, and reconceptualizing technology adoption as an outcome of participatory value formation within digital ecosystems.

Despite these contributions, the study is limited by its reliance on a single database (Scopus) and a defined time frame (2004–2026), which may not capture all emerging developments. Future research is encouraged to conduct empirical validation of the proposed model, explore cross-cultural variations, and examine AI-mediated co-creation dynamics using longitudinal and experimental approaches.

Future research is encouraged to empirically examine the relationships among value co-creation, perceived value, psychological ownership, ecosystem trust, and AI-based adoption intention across different technological and organizational contexts. Further studies may also explore longitudinal adoption behavior, ethical AI governance, and cross-sector ecosystem interaction to advance ecosystem-based technology adoption research.

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