

Critical success factors of co-innovation platforms: a systematic literature review

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Abstract

Purpose – Collaborating with consumers during new product development can provide companies with significant benefits and competitive advantages. Although several studies have been conducted on the design of co-innovation platforms, there is still a need for a more comprehensive understanding of the co-innovation phenomenon. To address this gap, this research aims to identify the critical success factors of co-innovation platforms and provide an extensive analysis of the variables that determine their effectiveness.

Design/methodology/approach – This study presents a systematic literature review of co-innovation platforms based on an analysis of 89 articles published in 50 scholarly journals in the disciplines of information systems, marketing and business, covering the years from 2006 to 2022.

Findings – The review synthesizes the current state of scientific knowledge and groups prior studies thematically as critical success factors of co-innovation platforms. As a result, eight success factors have been identified in terms of quantity and quality of contributions. These factors include product involvement, perceived fairness, sense of community, interactive environment, employee involvement, participant diversity, assessment structure and task design.

Originality/value – The study consolidates existing research about the critical success of co-innovation platforms. It also provides a research framework that incorporates a diverse set of variables that can be used to assess co-innovation performance in future studies.

Keywords Co-innovation platforms, Collaborative innovation, Platform ecosystem, New product development, Systematic literature review

Paper type Literature review

1. Introduction

The new global business ecosystem requires companies to open their organizational boundaries and embrace environments that constantly improve their value propositions (Ma, Lu, & Tang, 2023). This creates a shift from current value creating systems into new

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environments that generate innovation. Such change involves collaboration, coordination and integration of different players, activities and interfaces (Hendricks & Matthyssens, 2023; Trabucchi & Buganza, 2022). One such initiative, the co-innovation platform, helps increase the performance of new product development processes by involving external volunteers as active participants in the system (Nobre & Ferreira, 2017).

Although companies aim to accelerate their innovation processes with new approaches, ineffective management of co-creation can lead to unfavorable results. For instance, *ElectriCo*, an electronics manufacturing company, discontinued its open innovation approach due to limited contributions, the consumers' unwillingness to share ideas and impracticality of some ideas received (von Briel & Recker, 2017). Therefore, companies still need assistance in enhancing the value generated from open innovation communities, as contributors do not provide creative outcomes that meet the requirements (Jiang, Yang, & Gai, 2023). It is necessary to establish a sustainable environment that nurtures the interests and passions of potential individuals and enables them to create high-quality innovations (Cleaver, Lawas, & Marshall, 2023). To do so, it is vital to identify the factors that impact the quantity and quality of contributions through these idea-generation platforms. In the literature stream about digital platforms, Trabucchi, Buganza and Verganti (2021) have provided an overview of these two main groups of measures for two-sided platforms. However, there needs to be more comprehensive studies on co-innovation platforms from these perspectives (e.g. Priharsari, Abedin, & Mastio, 2020).

Extensive research has been conducted on consumer motivations, co-creation processes and the quality of value created (Schemmann, Herrmann, Chappin, & Heimeriks, 2016). While co-innovation platforms have significantly matured, there are still questions about improving their design for more effective and efficient interactions and outcomes. To achieve success, it is essential to identify mechanisms that yield the most creative and valuable ideas. Literature highlights the crucial areas for future research as determining guidelines to increase user engagement and improved ways to guide the crowd to interpret ideas (Hofstetter, Aryobsei, & Herrmann, 2018; Wang, Wang, & Tao, 2017).

Although there are numerous studies regarding co-innovation from a platform and design perspective, there is still a lack of multi-perspective frameworks to orchestrate the interactions between a range of actors and enhancement of knowledge flows (Roberts, Palmer, & Hughes, 2021). To fulfill this need, this article conducts a systematic literature review on co-innovation platforms to compile past research, identify critical success factors that have an impact on contribution quantity and quality and present future avenues of research in this field. In this respect, the study aims to answer three specific research questions: 1) What is the state of the art in the research domain about co-innovation platforms? 2) Which major factors can be determined as critical success factors to improve the performance of the co-innovation process? 3) What are the future research avenues in this area that may advance existing academic knowledge?

The study contributes to the current literature on co-innovation platforms in two ways. First, it provides an overview of the research carried out on co-innovation platforms in an integrated and comprehensive way and offers a thematic classification of critical success factors in terms of the quantity and quality of contributions. Second, a research framework has been developed depicting the potential research areas which will guide scholars and practitioners in advancing this area.

2. Overview of the co-innovation domain

Digital transformation and a shift from closed to open innovation are reshaping the present value creation systems in companies (Hendricks & Matthyssens, 2023). Interactive and collaborative environments have replaced traditional innovation processes. Such a replacement caused open and continuous communication among the company, consumers and online communities. "The 'opening' of product innovation transforms the process from being one that

is vertically integrated and in-house to a distributed innovation process reliant on managing knowledge flows across organizational boundaries” (Roberts *et al.*, 2021, p. 2). Interactions among the co-creation partners provide opportunities to exchange knowledge and expertise, to produce ideas and solutions and to enhance affective and cognitive experiences by fostering collective intelligence (Nobre & Ferreira, 2017; Wang, Hsiao, Yang, & Hajli, 2016).

Co-innovation platforms enable consumers “to express their ideas, exploit their creativity and co-design and collaboratively innovate with the firm in new product and service development” (Zhang, Kandampully, & Bilgihan, 2015, p. 313). The many-way dialog between the parties helps reveal consumers’ needs and wants and find alternative and potentially more successful solutions (Poetz & Schreier, 2012). Specifically, it enables companies to advance their organizational competencies, manage their research and development processes effectively and overcome the high failure rates of newly launched products (Huertas, Veludo-de-Oliveira, & Leite, 2013). Adopting a co-innovation approach improves innovation activities and helps establish long-term alliances with current or potential consumers, thus increasing loyalty (Füller, 2010). This approach also helps to enhance brand awareness and customers’ satisfaction with the company (Grissemann & Stokburger-Sauer, 2012). It encourages consumers’ purchase intentions, willingness to pay and willingness to recommend the company to others (Schreier, Fuchs, & Dahl, 2012).

Consumers are valuable sources of innovative ideas; therefore, companies want them to contribute more ideas or many idea evaluations to reap the benefits of this vital resource. They outperform the company’s traditional efforts regarding both novelty and consumer benefits. However, regardless of the potential benefits, many open innovation approaches have failed due to low user engagement (Akman, Plewa, & Conduit, 2019). Additionally, even with high engagement, quantity does not necessarily bring quality to idea pools and huge collections of ideas may include unnecessary, insufficient, or low-quality inputs (Hossain & Islam, 2015). Companies tend to implement only a tiny fraction of the ideas they receive (Liu, Du *et al.*, 2020). Thus, a prominent issue is that, in addition to contribution quantity, companies want their innovation partners to generate high-quality ideas.

Developing a co-innovation platform that meets both user motivations and company needs while also ensuring the platform’s sustainability is a challenging task. To achieve this, companies must identify the right ways to collaborate with consumers, increasing their willingness to be fully engaged and inspiring them to contribute creatively (Fernandes & Remelhe, 2016). However, more guidance must be needed to manage the co-innovation process effectively (Roberts *et al.*, 2021). Thus, this study aims to explore a comprehensive body of critical success factors that may improve the collaboration between the two parties (companies and consumers) where both sides get significant benefits from this partnership.

3. Methodology

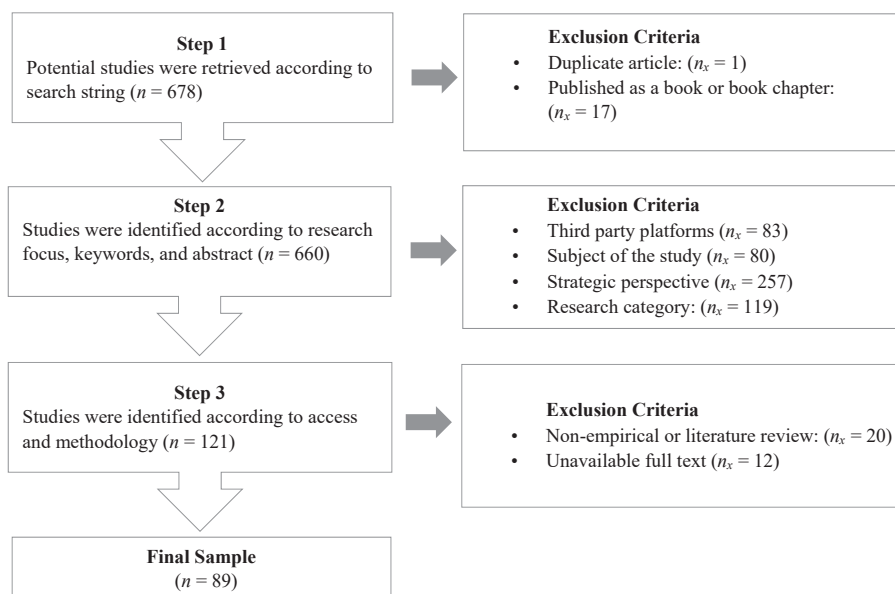
A systematic literature review was conducted to provide a replicable and transparent process. Tranfield *et al.*’s (2003) methodological approach has been employed during the planning, reviewing and reporting stages. At the outset, a search and elimination approach were defined based on research goals. The search strategy was to select broad keywords for the main pool, as the domain under review may be encountered with an extensive array of interchangeable terminologies in different studies. The elimination strategy was to use more stringent inclusion and exclusion criteria to obtain a more cohesive set of articles. During the second stage, appropriate search strings were identified, and the articles were retrieved that met all the inclusion and exclusion criteria outlined in the review protocol. The final stage was to assimilate the information from the selected papers and organize it to analyze the content to achieve the study’s research objectives. This phase focused on presenting the research

findings of the prior literature and identifying a thematic grouping approach. A research framework has been proposed to guide future research in the co-innovation domain.

For the systematic review, the articles were independently extracted from the Web of Science (WoS) and Scopus databases. Although the research assessment features of both databases were similar, there were differences in the classification of major and minor subject areas (Singh, Singh, Karmakar, Leta, & Mayr, 2021). The WoS database provided more selective coverage than Scopus, and 65% of the articles in the Scopus database matched WoS. Thus, the WoS database was chosen due to the high matching rate and the differences in the thematic categorization of subject areas (Jukić, Pevcin, Benčina, Dečman, & Vrbeč, 2019). Choosing WoS also allowed for a standard selection process and exclusion criteria, as it covers a vast collection of high-impact peer-reviewed publications across multiple research domains and subjects.

Following the research objectives of the study, data were extracted using the following sequential method shown in Figure 1:

- (1) A comprehensive search was applied with the terms (“value co-creation” or “co-innovation” or “collaborative innovation” or “open innovation”) and (“product dev*” or “co-production”) or (“online” or “virtual”) and (“community” or “platform”)), narrowed to “topic (title-abstract-keyword)”. The results were filtered according to articles written in English. For the time interval criteria, end of publication date was filtered as September 2022 and no constraint was given for the beginning point. Additionally, the research domain should be narrowed for search conditions that include many sub-categories to prevent information overload and the development of transdisciplinary understanding (Tranfield, Denyer, & Smart, 2003). Therefore, in line with the focus of the study, six WoS categories, namely “Management,” “Business,” “Engineering, Industrial,” “Information Science & Library Science,” “Operations Research & Management Science” and “Computer Science, Information Systems” were used to exclude other categories. This search yielded 678 articles.



Note(s): n : Number of Articles, n_x : Excluded Number of Articles

Source(s): Figure by authors

Figure 1. Systematic literature review process

- (2) The title, abstract, keywords and WoS categories were screened to classify the studies not relevant to the research purpose. This process created a focused pool and resulted in diligent elimination.
 - *Third party platforms*: Topics that include “social media” and “innovation intermediaries” were determined as an exclusion category as the unit of analysis in this review is company-initiated platforms.
 - *Subject of the study*: Topics that include “supplier integration,” “B2B” and “C2C” were determined as an exclusion category as this study is about company-consumer collaboration.
 - *Strategic perspective*: Topics that include “absorptive capacity”, “alliance networks”, “strategic alignment”, “servitization”, “intellectual property”, “technology licensing”, “innovation networks” and “open strategy” were determined as an exclusion category as these studies relate to a broader level of issues with no focus on user contribution.
 - *Incongruent research category*: Topics that include “public administration”, “educational research”, “software engineering”, “artificial intelligence”, “food science technology” and “health care sciences services” were determined as an exclusion category as these articles were either related with non-profit organizations or technical level issues that lack immediate congruence with the focus of the study.

To ensure that the research objectives were met, every abstract and, if needed, the entire text was thoroughly scanned. In total, 539 articles were eliminated as they did not align with the study’s scope.

- (3) Finally, 20 articles were non-empirical studies or literature reviews, and 12 articles were not accessible in any database in full text. The results were refined, and the final sample consists of 89 articles.

The reviewed articles were thematically coded based on the constructs explored and their relationships (Xiao & Watson, 2019). These constructs were then grouped into broader categories, based on their similarities and relationships. An iterative process was employed between the studies by going back and forth and simultaneously comparing the identified indicators.

The study delved into the literature stream on platform ecosystems to identify potential areas for future research. The study utilized a suitable platform business model that could bring new insights to the co-innovation literature. Next, a research framework was developed by combining various indicators based on the building blocks of the chosen business model.

4. Descriptive and theme-based review of the Co-innovation literature

4.1 Descriptive review

The articles in this review cover the period between 2006 and September 2022. A general overview of the progress in the literature regarding co-innovation shows a prominent increase in interest in this realm. As shown in Figure 2, there has been a significant increase in the number of studies in this area, especially since 2015, and co-innovation has continued its academic popularity in the last three years (n = 30). *Journal of Business Research* (n = 9) and *Creativity and Innovation Management* (n = 6) are the two leading journals publishing in this domain. In terms of research methodology, data collection through surveys (n = 36) was the leading research approach while case studies (n = 18) and secondary data analysis (n = 13)

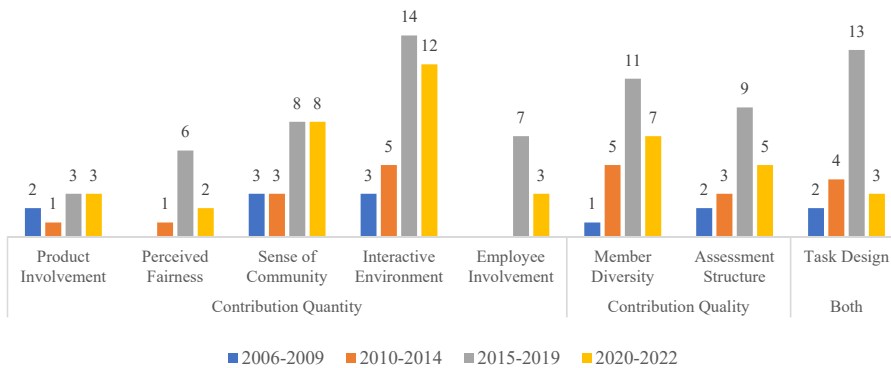


Figure 2. The number of articles per critical success factors according to publication era

Source(s): Figure by authors

were the two other methods in the reviewed studies. The reviewed articles primarily focused on communities formed by companies operating in “Information and Communications Technology” sector, such as Xiaomi, Huawei, Samsung, Apple, Dell (IdeaStorm), Microsoft, IBM, SAP (SAPiens). Additionally, communities in the “Automobile” industry, such as Alfa Romeo (alfisti.com), Volkswagen, Ducati Motors, as well as those in the “Textiles, Apparel and Luxury Goods” sector, such as Threadless, Swarovski and Adidas, were examined. Other sectors, including the Starbucks community (My Starbucks Idea) and Lego community, were also studied.

4.2 Theme-based review

Co-innovation platforms face critical challenges in enhancing the participation of potential individuals and the quality of their creative outcomes. While essential indicators may impact these challenges, a classification of insights is needed to refine the studies. To achieve this, the reviewed articles were scrutinized. An aggregate set of success factors regarding co-innovation performance was identified and framed according to the focus of contribution type. The constructs that impacted user engagement or intention to participate were classified as quantity-based indicators. On the other hand, the constructs that impacted on idea generation or evaluation quality were classified as quality-based indicators. The variables were structured to develop a holistic perspective and an attempt to propose an integrative research framework to guide further studies. Figure 2 demonstrates these factors and the number of articles per category relative to publication era. The following sections discuss the determinants at length.

4.2.1 Contribution quantity. 4.2.1.1 Product involvement. A brand community consists of people with a common interest in a product, brand, or company, distinguishing the platform from other communities (Marchi, Giachetti, & De Gennaro, 2011). An individual’s interest in the product or product category - product involvement - is a critical concept in the value co-creation context and an important determinant of future participation (Guzel, Sezen, & Alniacik, 2020; Ranjan & Read, 2016). Segmentation of participants according to their degree of interest in the product and development of diverse strategies for each group promote user engagement (Füller & Bilgram, 2017).

4.2.1.2 Perceived fairness. One critical criterion determining an individual’s decision to engage in co-creation activities is *perceived fairness* (Franke, Keinz, & Klausberger, 2013). Since individuals invest time and effort during the co-innovation process, they compare the value given to their contributions and relevant outcomes with the other members’ input and

the value they receive accordingly (Chou, Lin, & Huang, 2016). Studies indicate that *perceived fairness* can be enhanced by empowering consumers during the idea evaluation process, allowing them to moderate the platform, or fostering knowledge exchange among community members (Chou *et al.*, 2016; Franke *et al.*, 2013).

4.2.1.3 Sense of community. Co-innovation communities are social structures involving individuals from various backgrounds who come together for a particular purpose (Pedeliento, Andreini, & Veloutsou, 2020). These participants share a common vision and are committed to achieving a particular outcome (Chou *et al.*, 2016). This sense of belonging helps establish ongoing relationships between participants, which can involve sharing information and providing feedback. By supporting and encouraging one another, community members feel more connected to the group and are more likely to remain committed to its goals over time (Zhang, Hu, Guo, & Liu, 2017).

4.2.1.4 Interactive environment. An interactive environment requires simultaneous two-way communication through comments or dis/like buttons. When members contribute, they expect immediate responses from others or the company. The presence of company feedback is a signal that the company is reviewing submitted ideas and taking the community seriously (Windasari & Visita, 2019). Furthermore, the presence of peer feedback on a posted idea is a sign of social interaction (Akman *et al.*, 2019). It has been suggested that businesses should respond to the efforts of individuals and encourage others to respond to one another to enhance consumer engagement (Yang & Han, 2021).

4.2.1.5 Employee involvement. Employees are valuable sources of innovation and partners of consumers in co-innovation activities. According to Wu (2017), consumers tend to contribute more when they can collaborate with employees. The active participation of employees plays a crucial role in fostering the involvement of all participants. On the other hand, companies that exclude their employees from such initiatives are likely to fail. For instance, ElectriCo's open innovation initiative failed because its employees were excluded from the community (von Briel & Recker, 2017). Input from employees encourages consumers to contribute and understand the proposed problems better (Zhang, Pan, & hua Ouyang, 2020).

4.2.2 *Contribution quality.* 4.2.2.1 Participant diversity. The diversity of participants in co-creation activities has been a topic of interest to researchers and practitioners. Lead-users, a unique user segment, are an important source of innovation developing products or services with high commercial potential (Füller, Hutter, & Faullant, 2011). They are qualified individuals and provide valuable information in co-creation activities. Studies also show that other consumer segments, such as lag-users or laggards, can also be an essential source of innovation. They are resistant in changing habits, suspicious of new products or services, uninterested in emerging trends, have limited domain-knowledge. They are generally the last group of adopters of a new product or service (Jahanmir & Lages, 2015). Studies show that heterogeneity among community members brings diverse perspectives, preventing cognitive fixation problems and improving the quality of contributions (Liu, Du *et al.*, 2020; Nohutlu, Englis, Groen, & Constantinides, 2021; Priharsari & Abedin, 2021).

4.2.2.2 Assessment structure. Due to the increasing number of users' ideas, scalable and real-time approach is necessary to assess these ideas (Martínez-Torres, 2014). Therefore, it is vital to improve idea selection methods (Hossain & Islam, 2015). Community members should use advanced and multi-dimensional assessment structures instead of simple rating mechanisms to determine valuable ideas.

4.2.3 *Contribution quantity and quality.* 4.2.3.1 Task Design. Consumers engage in virtual communities not only for the content, but also for the pleasure they gain from interacting with other like-minded individuals (Füller *et al.*, 2011). Task enjoyment is one of the primary motivators for participants to engage in co-creation activities. Thus, game design elements are used to enhance co-innovation platforms. One of these gamification mechanics,

cooperation design, refers to co-innovation platforms that combine competitive and cooperative features (Renard & Davis, 2019). While competition focuses on individual goals without any collaboration among participants, cooperation emphasizes the interplay between participants who share common objectives. Research studies have revealed that participants who work collaboratively with others and focus on their own contributions generate more high-quality ideas than those who work alone (Hutter, Hautz, Füller, Mueller, & Matzler, 2011; Renard & Davis, 2019). Therefore, it is essential to design tasks that encourage both the quantity and quality of contributions, as consumers have a wide variety of expectations during co-innovation.

4.3 Conceptual framework

The insights obtained from this review were compiled to develop a conceptual model that expands the boundaries of co-innovation platforms by grounding on the concept of two-sided markets. “The theory of two-sided markets states that internet platforms must get both sides of the market on board in order to be viable” (Muzellec, Ronteau, & Lambkin, 2015, p. 140). Since the advantage is gained only when the other side exists, an optimum level of users and tasks is needed to avoid a “chicken and egg” situation. Additionally, according to the concept of “platform business models,” a certain amount of quantity is required to achieve a fulfilling level of quality (Trabucchi *et al.*, 2021). Thus, ‘task’ was declared as a broad term for all kinds of activities users can engage in, enhancing the number of interactions.

In the context of two-sided platforms, three main components have been identified that can affect the quantity and quality of co-innovation performance. The first component is the value-added tasks that promote interactions, which depend on “task design” and “perceived fairness.” The second component is the matchmaking process, which involves selecting the most suitable user for a specific task (Trabucchi *et al.*, 2021). “Product involvement,” “participant diversity,” and “sense of community” are conceptualized as the matching criteria to link activities and users. The last component relates to the dynamics that improve both the task and the matching criteria in a responsive way. “Interactive environment,” “employee involvement,” and “assessment structure” are determined as the building blocks of responsive dynamics.

The framework emphasizes the transformation of static co-innovation platforms into a flexible environment that co-evolves with contributing parties. The company, which is the platform provider, links activities and actors to facilitate value innovation. The company also responsively orchestrates the activities and actors’ interaction. The research framework aggregates the critical success factors that have been identified. Furthermore, it demonstrates various user and company-based moderators that can have a contingent effect on the relationship between indicators and co-innovation performance. Figure 3 depicts these effects.

4.3.1 Value-added tasks. In the conceptual framework, value-added tasks can be initiated by the company or the consumer. Idea generation, evaluation and integration, providing feedback and product design are the main tasks of co-innovation platforms. The common feature of these tasks is that the rules, procedures and participants are determined by the company and the crowds act according to these boundaries. It is necessary to provide a wide variety of value-added tasks to enhance user contribution as current unidimensional task designs do not offer adequate user engagement and satisfaction (Füller, Weking, Böhm, & Krömer, 2019). Consumers should be empowered to generate tasks, increasing the number of task choices. Additionally, providing control to consumers and allowing them to decide on task choices will increase their perceived fairness. Further research should be conducted to determine the types of tasks that consumers may create and the types of consumers that are likely to create a task.

4.3.2 User-based moderators: task-matching process. The goal of task-matching process in the conceptual framework is to identify how the relationship between the value-added tasks and co-innovation performance changes under user-related moderation. Co-innovation

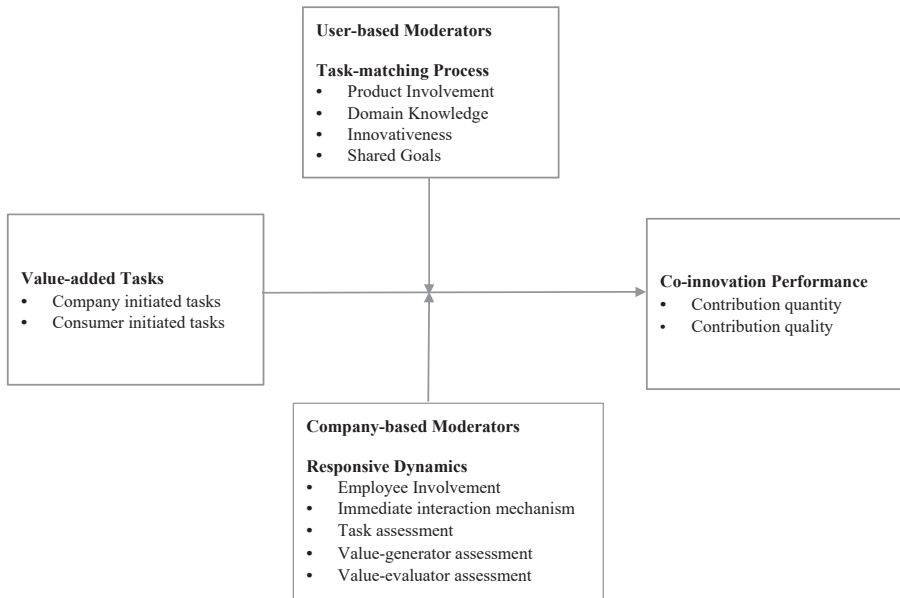


Figure 3.
Research framework

Source(s): Figure by authors

platforms consist of participants from diverse backgrounds, each with varying expertise, motivations and objectives. This diversity creates a synergistic effect that can significantly improve the quality of outcomes. Previous research on co-innovation platforms indicates that user interest in a product category, user skills and characteristics (such as expertise and innovativeness) and sharing common objectives with the community are all indicators of user participation (Füller & Bilgram, 2017; Liu, Xiao *et al.*, 2020; Liu, Du *et al.*, 2020; Nohutlu *et al.*, 2021). Therefore, product involvement, domain-knowledge, innovativeness and shared goals can be used as matching criteria. Future studies may consider exploring how to design a task-matching process to increase the likelihood of achieving a relevant match between the participant and the task. While appropriate tasks may improve user satisfaction, they may also hinder the feeling of belonging to a community. Therefore, more research is needed to investigate the design of customized task communities that serve company innovation efforts whilst enhancing the user’s sense of community.

4.3.3 Company-based moderators: responsive systems. In the conceptual framework, responsive systems refer to understanding how the relationship between the value-added tasks and co-innovation performance changes due to company-based moderators. Digital transformation has led businesses to focus on enabling interactions rather than just providing products or services (Hendricks & Matthyssens, 2023). Interactivity between two parties occurs through commenting or evaluating activities in existing structures. However, depending on the content, these responses may encourage or discourage the user (Li, Liphong, Qin, & Gu, 2020). Thus, it is essential to involve employees in measuring the response rates of each task alongside the content of responses. The main challenge is to create a responsive system that can dynamically redesign tasks based on the user input. Hence, future studies should focus on expanding responsive structures that can motivate actors and enhance the quality of value generated.

5. Discussion

The present study performed a systematic literature review on the co-innovation domain to provide a framework that can improve the performance of co-innovation platforms from multiple perspectives. The review has revealed that several factors, such as product involvement, perceived fairness, sense of community, interactive environment, employee involvement, participant diversity, assessment structure and task design, play a critical role in success of co-innovation platforms. These factors enhance user engagement and lead to high-quality outcomes. This study's insights provide a research framework that can improve the current level of knowledge in a broader context.

5.1 Theoretical implications

This research makes three main theoretical contributions. Firstly, it provides a comprehensive view by comparing various factors and their consequences regarding two primary measures - contribution quantity and contribution quality. Previous literature reviews in the value co-creation and open innovation domains have also highlighted the importance of continuous feedback, a sense of community, interactivity and perceived fairness across various themes based on their research objectives (Bharti, Agrawal, & Sharma, 2015; Füller *et al.*, 2019; Priharsari *et al.*, 2020; Wong, Peko, Sundaram, & Piramuthu, 2016). This study further extends these insights to address the main challenges of co-innovation platforms and presents critical success factors and their association with the challenges.

Second, one of the main contributions of this study is developing a research framework that synthesizes the valuable contributions of existing research in the field. Füller *et al.* (2019) have emphasized the importance of exploring the impact of tasks on the user experience in online communities. The research framework strengthens this argument by placing 'task' at the center of co-innovation performance. The research framework also provides a contemporary representation of relevant paths for future research. The framework suggests that co-innovation platforms should evolve into a flexible environment that includes all participants by offering a wide variety of activities that build a perfect match between users and compelling experiences whilst also improving quantity and quality of interaction in a responsive way.

Lastly, a wide array of research has started to combine research streams with a focus on platform ecosystems (Hendricks & Matthyssens, 2023). The factors identified in this review can also provide a guide to other platform business models, which will add a novel perspective on platform thinking as well.

5.2 Practical implications

The insights from this study provide a guide to practitioners on how to improve the performance of co-innovation platforms. The identified critical success factors can be a roadmap to develop better consumer involvement strategies and to prevent implementation failures. The indicators presented in this study can assist practitioners to refine existing strategies by demonstrating their impact in terms of contribution type.

Secondly, one of the main takeaways from this study is that companies should prioritize creating value-added tasks for their consumers. It is vital for companies to understand the significance of customizing tasks based on specific user segments and focusing on building interactions that add value rather than simply targeting certain user groups with standard co-innovation tasks.

5.3 Limitations

This review attempts to shift the current debate of co-innovation literature into a holistic overview and a summary of current scientific knowledge. However, the study has two

limitations. Firstly, to conduct a systematic review that is inclusivist and rigorous but also manageable simultaneously, the scope of the review has been limited to the WoS database, and only articles written in English were included in the study. Therefore, book chapters, conference papers, theses and studies published in other languages were excluded. Secondly, this research uses an extensive list of search keywords but excludes interchangeable keywords such as crowdsourcing or ideation to avoid losing focus.

5.4 Future research directions

This study provides a systematic insight into co-innovation, which can help to broaden further research in this field. In future attempts, the review can be expanded to include other scholarly databases and additional keywords, which are excluded keywords in the limitations section. Future research can advance the assimilated knowledge on critical success factors and investigate components that can affect contribution quantity and quality. Lastly, since the current study does not focus on the integration of suppliers, future research can explore how the aspects identified here translate into an interaction pattern when suppliers or other players in the value chain are included in the co-innovation process.

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