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A Meta-synthesis Model of Co-Creation of Value in New Technology-Based Startups

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Abstract

This study explores the co-creation of value in technology startups, emphasizing the role of customer engagement in identifying needs from the outset. The research follows a qualitative approach, employing meta-synthesis to analyze 48 selected studies from a review of 200 scientific articles. Additionally, the Shannon entropy method ranks the identified sub-categories. Key categories for value co-creation include product/service indicators, interactions, organization, customers/target market, and development actions, with 22 sub-indicators. The most influential factors are human resources and training, organizational structure, marketing and sales, product/service type, innovation and quality improvement, and customer relationships. Findings highlight that collaboration, knowledge sharing, and stakeholder engagement enhance value creation. These elements drive efficiency, innovation, and sustainable growth. Furthermore, strong networks with customers, partners, and institutions contribute to increased value for startups, emphasizing the importance of interactive relationships in developing high-quality, customer-centric offerings.

Keywords: Co-creation of value, aMeta-synthesis, startup, new technologies.

1. Introduction

co-creation of value (value co-creation) refers to the collaborative development of new values (concepts, solutions, products, and services) in partnership with stakeholders (such as customers, suppliers, etc.) (Malhotra, 2022). This concept clearly emphasizes the importance of collaboration with customers and other stakeholders, focusing on their active participation in the value

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production process. This participation can often lead to more personalized and innovative solutions (Diefenbacher, 2023).

The prevailing perspective on shared value creation is that customers can be viewed as all the actors or stakeholders of a product or service (Roli, 2011; Nozari & Aliahmadi, 2022). Based on these definitions, value can be considered a dynamic, multi-dimensional concept that encompasses the needs and expectations of customers and all stakeholders of a product/service, created jointly between the organization and stakeholders, thereby providing the foundation for shared value creation.

If we assume that value creation is a construct related to both the customer and the organization (Grönroos, 2011), attention must be paid to the significance of shared value creation in the product or service growth process. A review of some studies conducted in the field of value creation (Pine et al., 2008; Grönroos, 2011; Sarijarvi, 2011) indicates that the customer is always considered a synergistic element in value creation. This can point to the interactive nature of value creation between the organization and the customer (same source).The goal of shared value creation is to establish a favorable condition that helps an organization highlight customer perspectives and improve the process of identifying customer needs and wants from the very beginning of interactions (Pine et al., 2008). When a customer is involved in the design or development processes of a product, this collaboration can lead to shared value creation. The logic of shared value creation is based on the principle that organizations, as service providers, must create the necessary opportunities for shared value creation with customers (Grönroos, 2011), and customers must continuously engage in the process of interpreting and shaping the context of the product or service in order to participate in innovation (Roli, 2011; Nozari & Szmelter-Jarosz, 2022). Therefore, to develop and improve a product or service, it is essential to examine, extract, and utilize the experiences and knowledge of stakeholders. On the other hand, technology-based startups are newly established companies or entrepreneurs that are in the stage of market research and development. These companies do not necessarily use high-level technology. Startups active in the field of new technologies identify gaps between existing services and products and the new needs and wants of customers, and they creatively and innovatively design a product or service that can meet market demands. Accordingly, these companies possess high agility and flexibility, alongside utilizing new expertise and up-to-date technologies. These characteristics provide a significant competitive advantage for such companies. The framework of shared value creation helps relevant managers to participate in the co-creation of value (Marz and colleagues, 2018;Movahed et al., 2024). In this investigation, an attempt has been made to review studies in the area of shared value creation in technology-based startups. Given the rapid growth of technology and the entry of competitors into the market, startups must become increasingly competitive. Therefore, studying shared value creation helps them gain a better understanding of competitive factors and establish sustainable strategies for success. Hence, the question arises: What dimensions and components does value creation in technology-based startups encompass from the perspective of previous domestic and foreign studies?

2. Theoretical Foundations and Research Background

The concept of co-creation has increasingly emerged and gained popularity in the literature of management and innovation over the past 15 years, first introduced by Prahalad and Ramaswamy (2004) in the field of marketing. However, since then, this topic has been widely discussed and evolved as an important research issue in other domains as well. As Leclerc and colleagues (2016) have pointed out, co-creation of value has been highlighted and applied in branding (Hatch, 2012; Marz and colleagues, 2018; Tynan and colleagues, 2010;Nozari et al., 2024), retailing (Andrew and colleagues, 2010), innovation (Fuller and colleagues, 2011; Fulero Matzler, 2007; Sporer and Magliocca, 2008), sociology (Schaa and colleagues, 2009), service management (Vargo and Lusch, 2008), and recovery (Raghuvanshi and colleagues, 2012), as well as in other topics. Furthermore, prior to the aforementioned research, scholars were examining how businesses could collaborate with customers in the development of new products (Riggs and Von Hippel, 1994; Von Hippel and Katz, 2002) and in the provision of services (Gronroos and Voima, 2013). However, Prahalad and Ramaswamy (2004) were the first to emphasize that the co-creation of value involves not only customers but also other stakeholders, such as suppliers, competitors, business partners, and public organizations; thus, they suggested a shift from a participatory view to an exchange view (Leclerc and colleagues, 2016). The fundamental idea of Prahalad and Ramaswamy (2004) was that businesses need a new framework for co-creating value and re-evaluating the traditional firm-centric value creation system. The researchers proposed that companies should create "experience environments" to add diversity to the experiences of co-creating value and should establish flexible "experience networks" that allow individuals to build and personalize their experiences. In this way, they argued that the roles of firms and customers converge towards a unique co-creation value experience. Consequently, Prahalad and Ramaswamy (2004) developed their[†] DART model of value co-creation to understand the co-creation process through four key building blocks: Dialogue, Access, Risk Assessment, and Transparency. The authors argued that combining these four DART building blocks could help businesses enable customer participation as their collaborators, and that companies could create new and significant capabilities by blending these building blocks in various ways, namely enhancing consumers' ability to make informed choices, increasing the capacity for discussion and the development of collaborative public and private policy options, fostering and maintaining topic-related engagement, and developing mutual trust. The research and initial work on co-creation by Prahalad and Ramaswamy (2004) provided significant knowledge and insights, and since then, it has marked a turning point for many articles focused on value co-creation. However, as noted, many opinions and studies have emerged, developed, and analyzed in this field since the study by Prahalad and Ramaswamy (2004). Existing definitions regarding customer-perceived value can be classified into several primary models: the components-based model, the cost-benefit model, the means-end model, and the key dimensions of value model. None of these models are necessarily exhaustive or complete; each addresses a specific set of concepts while overlooking others. In many cases, there can also be overlaps and friction between these models, allowing for a cohesive and comprehensive perspective on value co-creation by purposefully combining them.

2.1. Value Component Model

[†] Dialogue, Access, Risk assessment, Transparency

In general, three main components regarding customer perception of value can be identified as follows:

Dissatisfiers: These are expected characteristics of a product or service whose absence causes annoyance and dissatisfaction for the customer, while their presence has a neutral effect.Satisfiers: These are the expected and desired characteristics for the customer, the presence of which leads to satisfaction and sometimes joy and happiness for the customer.Delighters: These are new and innovative characteristics that are beyond the customer's expectations and can surprise the customer in the best way, or in other words, increase their satisfaction to the point of delight. They fulfill a latent need in an innovative way. The absence of these characteristics does not negatively impact the customer's perception of the value they receive as long as they are unexpected and unpredictable; however, their presence has a positive effect on customer perception.As shown in Figure 1, there is a close relationship between the three types of product features and the level of customer satisfaction in this model. The dashed line underlines the area of necessary and essential specifications (standards), and the area above this line indicates an increase in satisfaction from a neutral state to maximum satisfaction, which is the creation of delight.This model significantly aids in the design of new products and services with desirable and effective characteristics. The model primarily focuses on attracting customers and improving the relationship between them and the provider of goods and services. However, it pays very little attention to the entire cycle of customer activity, from recognizing needs to purchasing, using, and discarding or foregoing the consumption of goods, as well as the benefits (gains) and drawbacks (costs) that customers encounter alongside the value they gain (Khalifa, 2004).

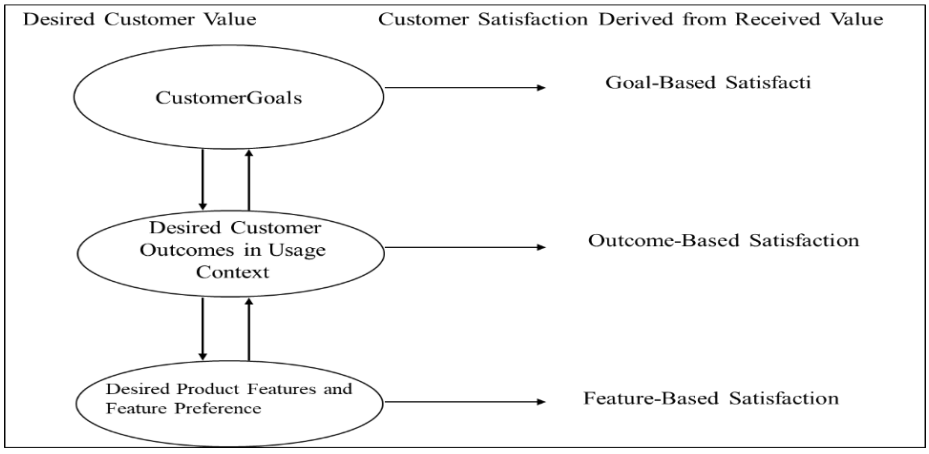

Figure 1. Hierarchy of Values (Salam Khalifa, 2004)

2.2. Cost-Benefit Ratio Model

In this model, value is discussed in relation to what the customer gains and what they pay in return for acquiring it. The benefits derived from obtaining a good or service include both tangible and intangible aspects, and the payments they make include monetary and non-monetary aspects such as money, time, search costs, learning costs, psychological costs, and financial, psychological, and social risks (Huber et al., 2001). In other words, value from the customer's perspective relates to

the exchange of positive outcomes (benefits) or desirable outputs and negative outcomes (losses) or costs. Gross, in a study conducted in 1994, concluded that the price set by the producer of the goods or the service provider in the market for the customer is the sum of the variable costs of the product and gross sales profit. Parolini, in 1999, proposed a different approach to the concept of value, describing it as a tool for achieving competitive strategy. In this approach, which he termed "value network," three types of value are presented: value from the system, value received by the final customer, and value created by value chain actors. The value derived from the system is the difference between the gross value that the customer attributes to the goods or services (regardless of the price of those goods or services) and all the costs that the value creation system incurs to produce or supply those goods or services. The value assigned to a product is directly related to the benefits that the customer anticipates and inversely related to the costs associated with using that product or service (such as spare parts and complementary components, maintenance, and other post-purchase costs). The total net value created by the system is distributed among final customers and the economic actors involved in creating that value, depending on the relative bargaining power of each. The net value received by the final customer can also be divided into two parts: the value that the customer associates with a good or service and the price they actually pay for it. The total price paid is equal to the total revenues received by the actors who were involved in value creation activities. The net value received by the value creation actors is the difference between the total price that the buyer pays to the value creation actors and the total costs they incur (Salem Khalifa, 2004).

In any system, the supply of a product (with a specific value called gross value) requires a certain amount of cost, which the system considers along with the actions of value creators (individuals such as sales personnel who contribute to the creation or enhancement of value for the final product through appropriate behavior and interactions with customers). The system sets a price for the final product, where the difference between the price and the gross value of that product indicates the net value for the customer. Generally, from the perspective of the two mentioned models, value is defined from the customer's standpoint as the ratio of benefits and desired outcomes to the costs incurred to obtain those outcomes.

2.3. Means-Ends Model

In this model, customers utilize goods and services to achieve desired outcomes. It can be said that the features and characteristics of a product or service, the results and consequences derived from its consumption, as well as the personal values of the customer, shape their decision-making process. In a study conducted by Woodruff in 1997, value from the customer's perspective is defined as a preference attributed by the customer to a product, influenced by their evaluation of the product's features and characteristics and the consequences of its consumption in line with their goals and objectives. The model presented by this researcher is known as the customer value hierarchy, and as depicted in Figure 2, the desired and expected value for the customer leads to satisfaction resulting from the value received. In this hierarchy, movement occurs in both downward and upward directions: when a customer seeks a product with a specific set of features and characteristics (which yield known consequences and results from its consumption) to achieve a specific goal or fulfill a particular need; however, at times, a customer may purchase and consume

a product that provides desirable outcomes related to addressing certain needs, subsequently learning to use that product to meet those needs in the future. The value that the customer attributes to the product or service in each of these scenarios and their satisfaction in each situation varies according to Figure 2. In general, in the means-ends model, the value a customer assigns to a specific product or service depends on how their preferences are shaped through the consumption of a product with a specific set of characteristics (as a means) that leads to the reception of outcomes and the realization of specific goals (as an end) (Saleh Khalifa, 2004).

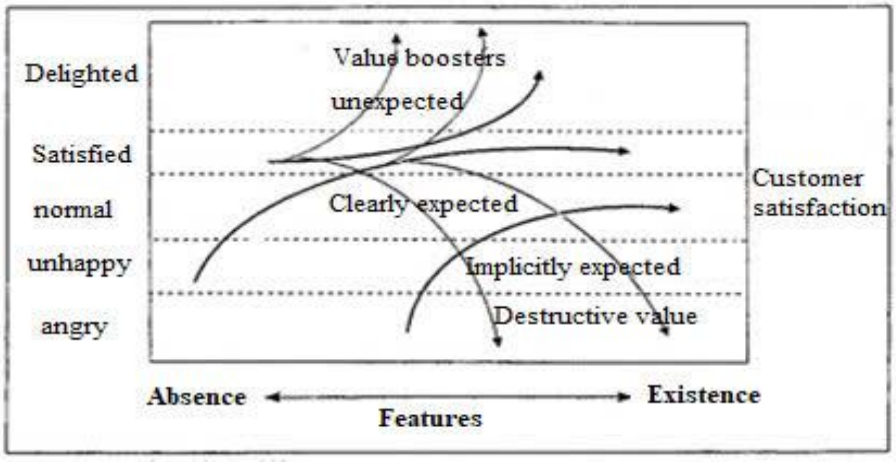

Figure 2. Dynamics of Customer Value (Salem Khalifa, 2004)

2.4. Key Dimensions of Value from the Customer's Perspective

In 1991, Shes and his colleagues proposed the consumption value theory and divided customer value into five key dimensions:

- Functional Value: Related to economic utility, it reflects the benefits derived from a product or service from an economic standpoint, emphasizing the quality and performance characteristics of the product.

- Social Value: Represents the social utility and status derived from possessing a product in the eyes of friends, colleagues, and other members of the reference group from the customer’s perspective.

- Emotional Value: Relates to the psychological and emotional outcomes of the product and the product's ability to evoke feelings and create appealing experiences.

- Cognitive Value: Pertains to the novel and surprising aspects of the product, as well as its degree of freshness and innovation.

- Situational Value: Refers to the array of situations customers face when making decisions (Tzeng-Chen et al., 2005).

The operational feasibility and ease of use of Shes' model have led numerous researchers to reference it. For instance, a study conducted in 2004 in various service organizations in China examined consumer behavior and customer value within a comprehensive and cohesive

framework, yielding interesting and beneficial results. The aim of these researchers was to investigate the practical application of value from the customer perspective in relation to customer relationship management performance; therefore, they made modifications to Shes' model. In their proposed model, the key dimensions of value include functional, social, emotional, and a fourth dimension accounting for costs or sacrifices made. According to these researchers, the Shes model is not sufficiently comprehensive and practical despite including cognitive and situational dimensions of value. For this reason, they replaced these two dimensions with a fourth one, which considers both monetary and non-monetary costs incurred by customers in acquiring products, such as search costs, learning costs, maintenance costs, as well as financial and social risks, along with the time and energy expended by the customer in both the short and long term (Yung-Yu Wang, 2004).The Shes model has also been applied in the context of customer value in relation to other marketing components. One such example is a study aimed at examining the relationship between price, brand, and customer value in banks in Taiwan. The objective of this study was to investigate the relationship between product price, brand, and customer value and to describe the impact of price and brand on the key dimensions of customer value through service quality and perceived risk. The findings indicated an indirect effect of the brand on customer value through service quality, as well as an indirect impact of price on customer value through perceived risk. This prompted bank managers to enhance customer value by implementing appropriate pricing policies and effective branding strategies (Tzeng-Chen et al., 2005). The following section delves into the research background:

Solakis and colleagues (2022) in a study titled "Co-Creation of Value and Customer-Perceived Value" identify perceived quality and price as sources of competitive strategy in value creation from the perspective of the customer. Batisti et al. (2022) conducted research titled "Creating New Technology Entrepreneurs with Digital Platforms: Meta-Organizations for Co-Creation of Value in Data-Driven Retail Ecosystems," concluding that a flexible structure of meta-organizations can effectively guide the mindsets of different stakeholders to provide support for startups with advanced technology. AI-based platforms serve as a reliable alternative to address vital social issues to enhance economic growth and improve individual performance in a stressful and competitive environment, such as the retail sector. Rao et al. (2021) conducted a study on the impact of co-creation of value, perceived trust, and brand image on word-of-mouth marketing. The findings of this study indicated that positive word-of-mouth marketing affects the establishment of trust and perceived enjoyment among customers, and these factors contribute to co-creation of value and ultimately increase purchase intention.

Cignonari et al. (2021) conducted a study on co-creation of stakeholder value: a comparison of value-added in European companies. In this study, value creation is redefined from the perspective of organizational stakeholders, and a comparison of value-added in selected companies is made based on environmental, social, and governance criteria. A total of 399 companies were examined and compared. Additionally, a new index was developed to measure the status of companies based on stakeholder value creation. Shiaoni et al. (2021) conducted research on digital business models and their role in co-creating value through a stakeholder analysis approach. The results reveal a set of service value drivers, one-dimensional benefits, and community-level outcomes through which the central intermediary of this sharing economy platform creates, delivers, and attracts value for

its various stakeholders. Mengwar and Daoud (2021) conducted a study titled "Co-Creation of Value: A Systematic Review." The results of this research indicate that, firstly, co-creation of value is a significant and increasing addition to the existing literature, and it is neither a revolutionary concept nor a common term. Secondly, assuming rationality in companies, the decision-making performance of a company in adopting a co-creation strategy depends on opportunity costs and transaction costs. Thirdly, several external and internal factors affect the company's ability to effectively pursue a co-creation strategy.

In internal studies, Amir-Divani and Mohaghegh (2021) conducted research titled "Investigating the Role of Co-Creation of Value for Customers in the Relationship between Communication Capabilities and Marketing Innovation." The results of this study indicate that communication capabilities have a positive impact on competitiveness and co-creation of value for customers. The results also showed that marketing innovation has a significant influence on competitiveness and co-creation of value for customers. Communication capabilities and marketing innovation affect competitiveness through the co-creation of value for customers.

Kazemi and Vaziry (2021) conducted a study titled "Examining the Impact of Social Media on the Endogenous Variables of Company Capabilities and Co-Creation of Value." Based on the results, social media increases customer loyalty to the company's brand by providing information about the components of final products and collecting and transferring consumer feedback to the manufacturing company. Additionally, by conveying customers' ideas and desires, social media leads to the production of products that meet consumer needs and preferences, ultimately enhancing brand equity.

Ebrahimpour Azbari et al. (2020) conducted a study titled "The Impact of Customer Co-Creation Behavior on Brand Preference and Repurchase Intention." The research results indicate a positive and significant effect of co-creation behavior for customers on brand preference and of brand preference on repurchase intention. Furthermore, brand preference plays a mediating role between co-creation behavior and repurchase intention.

Del-Forozi et al. (2020) conducted a study titled "Examining the Relationship between Co-Creation of Value and Financial Performance (Case Study: Scientific Research Park of Isfahan City)." The results showed that co-creation of value impacts the financial performance of internet businesses. The relationship between co-creation of value and components of performance was also confirmed. Among the components of financial performance, the rate of return on sales is the most significantly affected by co-creation of value.

Mohammadi Ahmar et al. (2020) conducted a study titled "Examining the Impact of Customer Participation on the Co-Creation of Brand Value Mediated by Customer Motivation and Resources." The results of the study using path analysis indicate that customer participation has a significant impact on the co-creation of brand equity, mediated by customer motivation. Customer participation significantly influences customer motivation. Customer motivation significantly affects the co-creation of brand equity. Customer participation, mediated by customer-owned resources, has a significant impact on the co-creation of brand equity. Customer participation

significantly affects customer-owned resources, and customer-owned resources significantly impact the co-creation of brand equity.

A review of the research background shows that despite the growing number of studies in the field of value creation and co-creation in public organizations and commercial and service enterprises, there is a significant research gap, particularly regarding startups. Most of the studies conducted within the country have examined the impact of various occupational, environmental, and organizational factors on co-creating value, but they have not operationally and practically provided a comprehensive model or framework. Only a few studies have partially designed a co-creation value model. Furthermore, in the context of startups, despite their significant presence in today's business landscape, there has been negligence in research. Therefore, in this study, the researcher, by identifying influential factors and mechanisms of co-creating value, aims to address the previous research gap and present an innovative study.

4. Methodology

The research method of this article is meta-synthesis. This method is considered suitable for gaining new interpretations and meanings from an ambiguous phenomenon through qualitative study. Therefore, it can be said that meta-synthesis is not merely an aggregation of interpretations from similar studies; rather, it is the interpretation of the primary findings of selected studies to create comprehensive and interpretive findings that reflect the researcher's deep understanding in three main phases selecting studies, synthesizing studies, and presenting the synthesis, which are essential for the meta-synthesis method. While Barroso and Sandelowski introduce a seven-step method, this research utilizes their seven-step approach, which includes: formulating the research question, reviewing the literature, searching for studies, extracting texts, analyzing them, ensuring quality control, and presenting findings. In this regard, after reviewing 200 scientific articles related to the topic of this study, 48 studies were ultimately selected for analysis. The qualitative content analysis involved extracting natural codes, followed by labeling them as final codes. Subsequently, each code was categorized based on its meaning. Additionally, for the quantitative analysis of the research, after extracting factors, Shannon's entropy method was used to determine the weight and importance of each factor. The stages of the meta-synthesis method are illustrated in Figure 3:

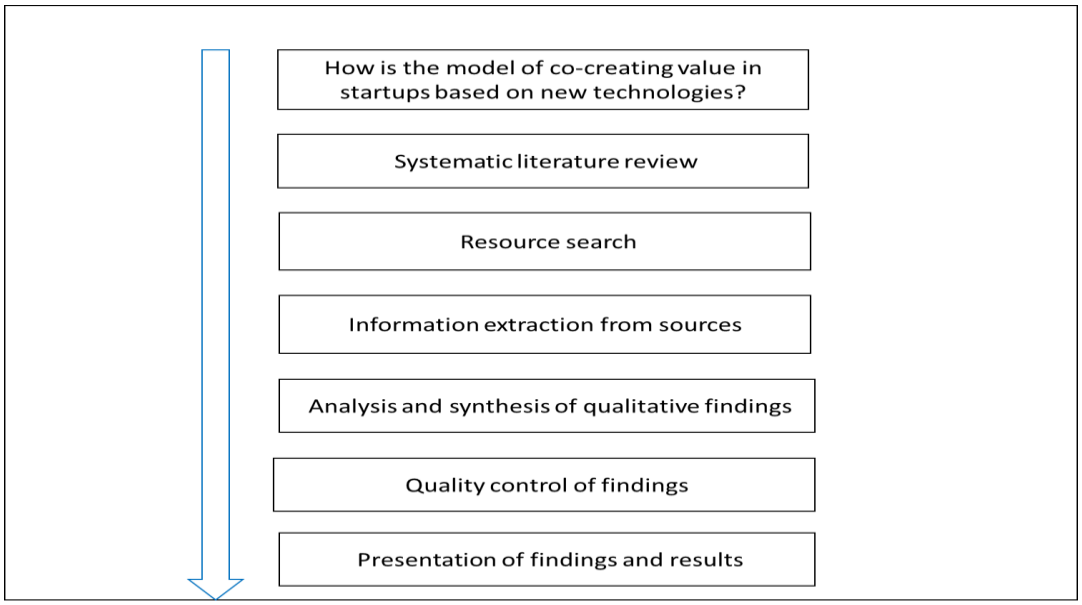

Figure 3. Research Phases with the Meta-Synthesis Model

5. Findings

The findings of the research are presented step by step based on the stages of meta-synthesis:

5.1. Step One: Formulating the Research Question

The first step in any research is to formulate a question or a goal. To set this question or purpose, it is necessary to first clarify the inquiry of "what?" In this paper, the model of co-creating value in startups based on new technologies is examined. In the next step, the question of "who?" needs to be identified, which in this research involves examining databases and journals.

The next question is "when?" which defines the time frame of the reviewed articles. In this research, domestic studies from the years 2011 to 2023 and foreign studies from the years 2000 to 2023 are examined.

The final question is "how?" which indicates a method for collecting research data. For data collection, studies conducted using scientific methods (qualitative, quantitative, and mixed) have been utilized. Based on the aforementioned points, the research question for proceeding with the next steps of the meta-synthesis is as follows: "What are the components of the co-creating value model in startups based on new technologies during the research period (2011 to 2023 and from 2000 to 2023), and how can these components be categorized?"

5.2. Step Two: Systematic Review of Literature

In this article, in the process of reviewing studies and synthesizing them—which follows a uniform and clear procedure—the time frame from 2000 to 2023 is specified for selecting studies to systematically search for published articles in various journals, scientific periodicals, and databases. Relevant keywords (co-creating value, startup, new technology) were searched for accordingly. Thus, the Persian databases searched include the Iranian Journal Database (MagIran),

the Scientific Information Center of Jihad University (SID), Irandoc, ISC Database, and Noormags. The English databases include Emerald, ScienceDirect (Elsevier), ResearchGate, Google Scholar, and Proquest.

5.3. Step Three: Resource Search

In this step, after several iterations of reviewing and refining academic articles and theses, some sources are excluded and are not considered in the meta-synthesis process.

Sampling Framework for Selecting Studies: The sampling method in this research is purposive sampling, and two criteria, "inclusion criteria" and "exclusion criteria," are used to select appropriate texts. To establish the accuracy, validity, and relevance, as well as to more precisely evaluate and select the studies under review, inclusion and exclusion criteria are employed. In this stage, after four rounds of refinement, 152 studies were eliminated from an initial pool of 200 studies, and 48 studies were selected for data analysis.

Inclusion Criteria: In this paper, the inclusion criteria refer to the standards based on which a particular study is included in the research. Setting criteria is carried out according to scientific principles and norms based on the views of researchers and specialists.

Exclusion Criteria: The second filter in selecting appropriate studies consists of exclusion criteria.

Table 1. inclusion and exclusion criteria of Resources

Exclusion Criteria	Inclusion Criteria
Research that has not provided sufficient information regarding the objectives of this .study	Scientific research articles published and theses indexed in the IranDoc database relevant to the .specified area
Research that has identical titles and . .objectives	Articles and research conducted using quantitative, qualitative, and mixed research ..methodologies
Research that lacks an appropriate .methodological framework	Research must report sufficient data and .information related to the research objectives
Research that lacks adequate scientific quality, as they have been published in low-quality .journals	Studies that have undergone a thorough peer review process by specialized reviewers and have . .been published in full either online or in print
.Review studies and library studies	Articles and research published in the specified .field between the years 2018 to 2023
Studies conducted before the year 2018 (1398 in .the Persian calendar)	Articles and research that have utilized scientific methods to examine the subject matter and ..provide a roadmap for innovation

The process of refinement and review, according to the specified inclusion and exclusion criteria, is briefly illustrated in Figure 1:

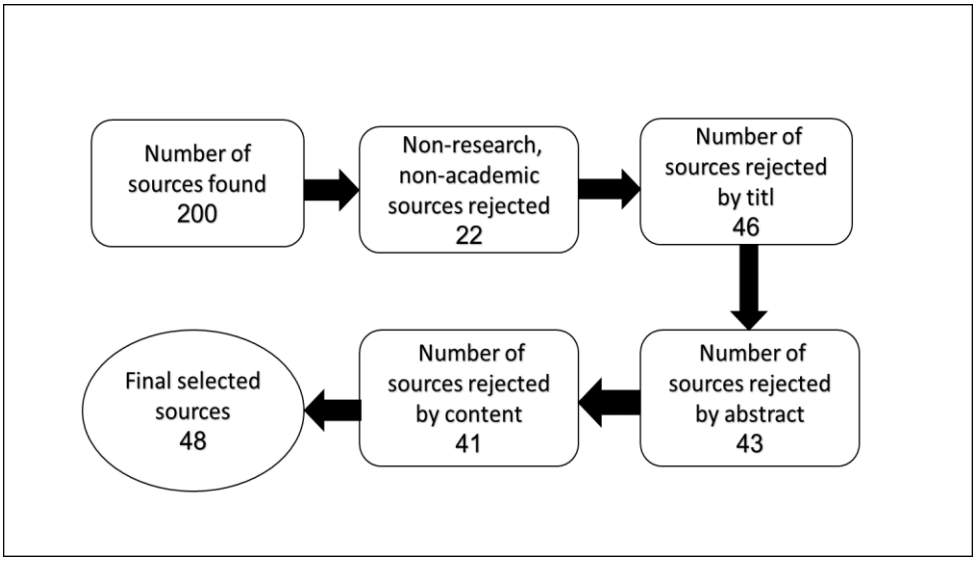

Figure 4. Stages of Selecting the Checklist of Studies from the Chosen Database

5.4. Step 4: Extracting Information from Sources

The analysis of existing texts and studies has been conducted to identify and extract information related to the co-creation of value model in startups based on new technologies. In this method, the meaning of the texts is evaluated, and specific parameters are examined. To code themes and concepts, existing texts from other studies were first collected. These texts were then carefully read to identify important patterns, terms, phrases, and concepts. In this method, the examined text is divided into smaller semantic units, referred to as theme coding. These themes are categorized as labels, classifications, concepts, or specific phrases. Further analysis of these themes helped identify patterns, relationships, and commonalities among them, leading to the identification of various observations and patterns. Below is an example of the coding of texts extracted from sources, including core themes and Comprehensive themes.

Table 2. An Example of Text Coding

Sample Code / Basic Theme	Central Theme	Comprehensive Theme
Technology-based startups need to focus on the training and enhancement of their employees' technical skills. This includes the technical and specialized skills required for technology development and management. Continuous training and updating employees' knowledge contribute to increasing the competitive power and innovation of the startup (Andreas .Kuketz et al., 2019)	Human Resources and Organizational Structure	Organization
In technology-based startups, collaboration and academic teams are usually very important. Human resources and training can facilitate effective group interactions by enhancing collaboration skills and communication across different cultures. Additionally, training in teamwork and leadership		

skills can strengthen the coordination and cooperation abilities among team members (Mungwar and Daoud, 2021).		
Training, as an effective empowerment tool, enables employees to manage technical challenges, project management, business, and more effectively. By enhancing skills, employees can experience improvements in their efficiency and performance while fostering creativity and innovation in their work (Battisti et al., 2022).		
Training and human resources can help cultivate an entrepreneurial culture within startups. This culture includes generating new ideas, embracing mistakes as learning opportunities, and facilitating change and innovation within the organization (Mchman Slimah et al., 2021).		
Identifying needs helps startups design and develop products and services that effectively meet customer demands. This enhances performance and customer satisfaction, creating shared value between customers and the startup (Arika Stenros and Jakola, 2012).		
Identifying needs that have not yet been addressed by competitors places the startup in a unique position. By determining unmet needs, the startup can quickly and strategically offer innovative products or services that focus on these weaknesses of competitors, thereby creating greater value for itself (Arika Stenros and Jakola, 2012).	Identifying Needs	Customers and Target Market
Needs identification and market analysis assist startups in understanding market trends and developments. With this awareness, the startup can determine appropriate strategies and actions for market entry, development strategy, and business model formulation (Rao et al., 2021).		
Value creation and its conceptualization help startups determine their value strategy. By understanding the needs and problems of customers, the startup can provide solutions that adequately address these needs and create unique added value for customers (Bunamigo et al., 2022).		
Value creation and its conceptualization assist startups in designing and developing products that effectively meet customer needs and create value for them. By focusing on the features, performance, and advantages of the product, the startup can offer products to customers that are superior in production, use, and customer experience (Arika Stenros and Jakola, 2012).	Value Creation and Its Conceptualization	Development Actions
Value creation and its conceptualization enable startups to design strategies that enhance customer satisfaction and generate greater value for them. By improving customer		

understanding and experience, the startup can enhance its services and products based on the needs and preferences of customers, thereby experiencing an increase in customer satisfaction and trust (Babu et al., 2020).	
Value creation and its conceptualization help startups establish appropriate marketing strategies. With a deep understanding of the product's value and its advantages, the startup can design its marketing strategies based on this value and these advantages, thereby establishing effective communications with customers (Costa Clement and Hafter, 2021).	

In the coding process, various opinions, ideas, and meanings related to value co-creation, as well as associated elements and structures, were observed, reflecting the multidimensional nature of the experience. Efforts were made to maintain coherence, focusing on the research objective and the characteristic of "repetition" in coding; however, to ensure comprehensive coverage of the text's content, extracted concepts from core themes were revisited and recoded within the text. For example, by coding the elements used in models concerning the concepts of "experience," "satisfaction," "brand attitude," and "loyalty," it was observed that similar elements were employed. Therefore, attention was given to the models of these concepts in coding.

As another example, various concepts related to "assessment" or "transformation" were found in the coded text; hence, the text was recoded based on a search for concepts related to these topics, leading to the inclusion of "leadership" and "qualitative assessment" (completed based on the radar evaluation logic) into the themes.

Value co-creation in technology-based startups has been addressed as an important research theme in various studies. After identifying these themes in other studies, they were separated and classified. This action contributes to increasing awareness of the factors and conditions that influence value creation in startups. In summary, themes related to value co-creation in technology-based startups may include business models, technology innovation, management team, target market, competitiveness, and financial management. Further research in this area can assist in the development and advancement of technology-based startups. Below are some of the themes and their corresponding study sources presented in Table 3.

Table 3. Components, Dimensions, and References of Creating Shared Value

References	Content
Mohammadi Far et al. (2022)	Expert human resources, training, knowledge-based, technical achievements, idea creation, and innovation
Radpour et al. (2022)	Process readiness, process value network, process achievements
Shafiei et al. (2022)	Service experience, service attachment, service image, customer personality traits, and service image
Parsa et al. (2022)	Customer participatory behavior, customer citizenship behavior

Kalabi (2022)	Corporate social responsibility, organizational innovation, organizational commitment, organizational culture
Khalighi et al. (2021)	Creating facilities, support and participation of senior management, appropriate planning, existence of expertise in information technology
Amirdivani and Mohaghegh (2021)	Communication capabilities, marketing innovation
- Sadrzadeh et al. (2021)	needs assessment, interactive processes, increasing customer .satisfaction, and alignment with customer needs and thoughts
Fartash et al. (2021)	.introduction to modern technologies and market recognition
Kajoory et al. (2021)	customer mental image, customer value, customer experience, customer motivation.
Ahmadpour Daryani et al. (2020)	managerial characteristics, business characteristics, strategic orientations, contextual factors in company performance .(financial, market, and customer)
Ebrahimpour Azbari et al. (2020)	.brand preference and brand preference
Razvani et al. (2020)	new service innovation, new service processes, technological .systems, verbal marketing
Khodaii et al. (2019	effectiveness criteria, continuous identification of new .customers, customer participation in the value creation process
Aghazadeh et al. (2019)	improving public reputation through social actions, reducing risks and costs through environmental protection actions, increasing revenue through the creation of business opportunities arising from solving social problems, and enhancing revenue by .improving the benefits transferred to a group of stakeholders
Hamidi and Shams (2019)	conceptualizing value, platform creation, resource planning, and value agents on the processes of shared value creation, learning, conceptualizing value, and processes of shared value .creation and learning
Amir-Sadat et al. (2019)	the role of reputation, the importance and value of .acceptance, responsibility, and compensatory actions
Amir-Sadat et al. (2020)	behavioral motives, emotional motives, financial and social benefits, perceived risk, technical risks, collectivism, perceived performance, social learning, informational factors, personal .targeting, psychological factors, and financial expectations
Ghorsi et al. (2018)	increasing revenue through the creation of business opportunities arising from solving social problems, increasing revenue through improving the benefits transferred to a group of stakeholders, improving public reputation through social actions or modern charitable activities, reducing risks and costs through environmental protection actions, and traditional charitable .approaches
Biranvand et al. (2018)	.human resources, spiritual resources, and physical resources
Hamidi and Shams Qarne (2018)	conceptualizing value, platform creation, resource planning, and value agents
Kashavarziyan (2018)	.customer value, customer loyalty, and trust in employees

Hosseini Nia and Yaghoubi (2016)	information search, information sharing, responsible behavior, personal interaction, feedback, consulting, assistance, .and tolerance as well as new product development
Hashemi and Tavakoli (2013)	potential for participation in the customer needs understanding stage, commercialization stage, exploitation and maintenance stage, end-of-life management stage, the current level of customer participation in all stages, and discrepancy .potential and participation level
Solakis et al. (2022)	Quality and Price Features
Bonamigo et al. (2022)	Value Creation, Interaction, Actor Behavior, Customer, and Participation
Battisti et al. (2022)	Flexible Structure of Inter-Organizational Networks, Innovation
Rao et al. (2021)	Perceived Trust and Brand Image
Machman Sleema et al. (2021)	Communications, Governance, Competence, and Participation
Mangwar and Dawood (2021)	Organizational Social Responsibility, Opportunity Costs, and Transaction Costs
Hasan Noor and Saari (2021)	Interaction, Online Communications, and Social Network
Costa Clement and Hafter (2021)	Responding to Imitators, Evolution with Product Market Strategies, Environmental Factors
Baridoux and Stolehorst (2020)	Brand Trust and Brand Loyalty
Almanol and Al-Hilali (2020)	Improvement of Quality and Efficiency, Knowledge and Information Sharing, Improvement of Communications
Babu et al. (2020)	Value Creation through Sustainable Social Innovation
Yin et al. (2020)	Innovation, Value Co-Creation Behaviors, Customer Interaction, and Customer Behavior Monitoring
Andreas Kuckertz et al. (2019)	Technological, Social, and Organizational Orientation
Chuang (2018)	Integrated Market Orientation, E-Marketing
Moon and Lee (2017)	Organizational Cohesion and Organizational Commitment
Lim (2016)	Organizational Loyalty, Organizational Commitment
McClenney et al. (2014)	Systems Management, Practical Alignment, Passive Compliance, Island Control
Arica Stenros and Jakola (2012)	Needs Detection, Design and Production of Solutions, Solution Implementation, Value Conflict Management, Process and Industry Organization
Kur et al. (2006)	Framework, System, and Process
Prahalad and Ramaswamy (2004)	Access, Dialogue, Transparency, Risk
Ramaswamy and Gouillart (2010)	Theme of Interactions, Mental Framework, Experience, Network Relationships, Engagement Platform
Gordjien (2003)	Market Segment, Exchange, Value Trading, Value Exchange, Value Proposition, Value Activity, Review of Value Activity, Connection, Value Interface

5.5. Step 5: Analysis and Synthesis of Qualitative Findings

In the table below, each of the main categories can be further divided into subcategories. This classification can help ensure that the topics under consideration are examined more accurately and that an appropriate categorization is achieved in the research conducted.

Table 4. Classification of Subcategories and Main Categories and Their Related Sources

Sources	Subcategory	Main Category
Rezvani et al. (2020)	Type of Product and Services	Product and Services
Ghorzi et al. (2018), Amir-Sadat et al. (2020)	Economic Value	
Amir-Sadat et al. (2020), Babu et al. (2020), Aghazadeh et al. (2019), Costa Clement and Hafter (2021), Andreas Kuckertz et al. (2019)	Social and Environmental Value	
Rezvani et al. (2020), Almanol and Al-Hilali (2020), Babu et al. (2020), Yin et al. (2020), Amir-Diavani and Mohaghegh (2021), Solakis et al. (2022)	Innovation and Quality Improvement	
Rezvani et al. (2020), Khodaiyari et al. (2019), Chuang (2018), Gordjien (2003)	Marketing and Sales	
Rezvani et al. (2020) | Hamidi and Shams (2019), Yin et al. (2020), Ramaswamy and Gouillart (2010), Bonamigo et al. (2022)	Product Proposal Partner and Collaborator Network	
Sadrzadeh et al. (2021), Machman Sleema et al. (2021), Prahalad and Ramaswamy (2004), Ramaswamy and Gouillart (2010), Amir-Diavani and Mohaghegh (2021), Bonamigo et al. (2022), Hasan Noor and Saari (2021)	Customer Relations and Support	Interaction
Kajoori et al. (2021), Hamidi and Shams (2019), Amir-Sadat et al. (2020), Costa Clement and Hafter (2021)	Shared Rewards and Values	
Shafiei et al. (2022), Kajoori et al. (2021), Ramaswamy and Gouillart (2010), Ebrahimpour Azbari et al. (2020), Rao et al. (2021)	User Experience	
Shafiei et al. (2022), Prahalad and Ramaswamy (2004), Kashavarzian (2018), Rao et al. (2021), Hasan Noor and Saari (2021), Baridoux and Stolehrost (2020)	Trust	
Hamidi and Shams (2019), Amir-Sadat et al. (2020), Prahalad and Ramaswamy (2004), Amir-Diavani and Mohaghegh (2021), Bonamigo et al. (2022), Hasan Noor and Saari (2021), Gordjien (2003)	Collaboration and Networks	
Clabi (2022), Khalighi et al. (2021), Ahmadpour Daryani et al. (2020), Hosseini Nia and Yaqoobi (2016), Hashemi and Tavakoli (2013), Muchman	Organizational Management	Organization

Slimah et al. (2021), Lim (2016), McCluskey et al. (2014), Mangavar and Dawood (2021)		
Radpour et al. (2022), Amir Sadat et al. (2020), Moon and Lee (2017), Lim (2016), McCluskey et al. (2014), Kor et al. (2006), Battisti et al. (2022), Mangavar and Dawood (2021), Andreas Kockertz et al. (2019)	Organizational Structure	
Mohammadi Far et al. (2022), Khalighi et al. (2021), Hamidi and Shams (2019), Hamidi and Shams (2019), Amir Sadat et al. (2020), Biranova et al. (2018), Hamidi and Shams Qarne (2018)	Human Resources and Training	
Ahmadpour Daryani et al. (2020), Gordjan (2003)	Type of Business	
Parsa et al. (2022), Khodai et al. (2019), Hosseini Nia and Yaqoobi (2016), Hashemi and Tavakoli (2013), Muchman Slimah et al. (2021), Bonamigo et al. (2022), Baridoex and Stulehorst (2020), Andreas Kockertz et al. (2019)	Participatory Behavior	Customers and Target Market
Sadrzadeh et al. (2021), Sadrzadeh et al. (2021), Fartash et al. (2021), Ghorshi et al. (2018), Hashemi and Tavakoli (2013), Arica Stenros and Jakola (2012), Arica Stenros and Jakola (2012), Aghazadeh et al. (2019)	Identifying Needs	
Mohammadi Far et al. (2022), Radpour et al. (2022), Khalighi et al. (2021), Fartash et al. (2021), Rezvani et al. (2020), Amir Sadat et al. (2020), Ghorshi et al. (2018), Hosseini Nia and Yaqoobi (2016), Arica Stenros and Jakola (2012), Aghazadeh et al. (2019), Battisti et al. (2022), Andreas Kockertz et al. (2019)	Technology Development and Idea Creation	Development Actions
Kojuori et al. (2021), Khodai et al. (2019), Hamidi and Shams (2019), Amir Sadat et al. (2019), Babu et al. (2020), Yen et al. (2020), Arica Stenros and Jakola (2012), Hamidi and Shams Qarne (2018), Kashavarzian (2018), Bonamigo et al. (2022)	Value Creation and Its Conceptualization	
Hosseini Nia and Yaqoobi (2016), Hashemi and Tavakoli (2013)	Commercialization	
Amir Sadat et al. (2019), Amir Sadat et al. (2020), Hosseini Nia and Yaqoobi (2016), Hashemi and Tavakoli (2013), McCluskey et al. (2014)	Implementation and Monitoring	

Table 5. Explanations Related to Main and Subcategories

Row	Explanations	Subcategory	Category
1	Features, performance, efficiency, and capabilities of the innovative technology product, startup hosting and support, improvements and upgrades, after-sales service, and technical consulting.	Type of Product and Services	Product and Services

2	Includes total cost, cost reduction, improved financial performance, and increased revenue.	Economic Value	
3	Includes social impact, responsiveness to social needs, and environmental protection.	Social and Environmental Value	
4	Research and development, creating new ideas, and updating technologies.	Innovation and Quality Improvement	
5	Includes marketing strategy, customer communication, advertising, and product sales.	Marketing and Sales	
6	Precisely defining the proposal and product that improves and solves customer problems. Focus should be on the unique capabilities and added value created by the product in question.	Proposal and Product	
7	Introducing and managing a network of partners, collaborators, and suppliers. Strategic communication and collaboration with other institutions and companies should be considered.	Partners and Collaborators Network	
8	Includes direct relationships with customers and ways to improve them. Emphasizing the maintenance and enhancement of customer relationships when determining the marketing strategy is essential.	Customer Relationships and Support	
9	Providing rewards and additional values to customers that help enhance relationships and create greater returns.	Rewards and Shared Values	Interactions
10	User interface, ease of use, appeal, and user satisfaction.	User Experience	
11	Includes information security, privacy protection, brand trust, and quality standards.	Trust	
12	Involves collaboration with strategic partners, customer interaction, and creating communication networks.	Collaboration and Network	
13	Includes organizational strategy, business model, leadership, and resource management.	Management and Organization	
14	involves the distribution and allocation of the organization's internal resources (human resources, amount of capital, and technical and financial capabilities).	Organizational Structure	Organization
15	Human resources play a vital role in creating shared value in technology-based startups by empowering teams, fostering an entrepreneurial culture, enhancing technical capabilities, motivating and inspiring, and retaining knowledge and experience.	Human Resources and Training	

16	Product-based business model, service-based business model, platform-based business model, data-driven business model.	Business Type	
17	Understanding the target customers, their needs, and preferences. This section should focus on analyzing the needs, wants, and problems of target customers, the target market, as well as competitors and understanding competitive positioning.	Collaborative Behavior	Customers and Target Market
18	The startup must identify the needs and issues present in the market. A set of strategies and approaches will be designed to highlight the necessity and importance of technological innovation for solving these needs.	Needs Identification	
19	The startup must pursue the development of innovative and advanced technology capable of solving identified needs and problems. This stage includes research and development, designing and producing prototypes, and technical testing.	Technology Development and Idea Creation	
20	The startup must plan for value creation for customers. This value creation can include cost reduction, increased efficiency, providing better services, and enhancing customer experience using technology.	Value Creation and Conceptualization	
21	The startup must define and implement its business model. This includes market analysis, identifying competition, pricing and marketing strategies, attracting investors, and executing operational procedures.	Commercialization	Development Actions
22	The startup must launch its idea into the market and begin implementing its business model. Additionally, the startup should maintain continuous control and monitoring of its performance and success and take necessary actions for improvements and changes if needed.	Implementation and Monitoring	

5.6. Step 6: Quality Control of Findings

In this research, the Kappa statistic has been used to maintain the quality of the study (Soltani et al., 2017). Since in the model design phases, the criteria of previous models were considered as codes and, taking into account the semantic similarities between the codes, efforts were made to merge and create concepts, a comparison of the researcher's opinions with that of an expert was also used to control the extracted concepts. The Kappa statistic ranges from zero to one; the closer the measure is to the number 1, the greater the agreement among the raters. The value of this statistic in the current study is 0.87, indicating 64 to 81 percent validity of the qualitative analysis.

5.7. Step 7: Presentation of Findings and Results

This level of overarching themes, which can also be observed in the theme network, has been extracted. By examining the overarching themes, it is evident that a process-oriented perspective has been repeated in many codes and themes, and the process nature of the model is reflected in the conceptual sequence of these themes in the model.

Table 6. Main and Sub-Categories Comprising the Initial Conceptual Model

Some Related Themes	Frequency	Core Theme
Type of Products and Services Economic Value Social and Environmental Value Innovation and Quality Improvement Marketing and Sales Offer and Product	11	Products and Services
Network of Partners and Collaborators Customer Relationships and Support Shared Rewards and Values | User Experience Trust Collaboration and Networking |	38	Interrelationships
Management and Organization Organizational Structure Human Resources and Training	42	Organization
Type of Business Participatory Behavior Identifying Needs	28	Customers and Target Market
Technology Development and Idea Creation Value Creation and Its Conceptualization Commercialization Implementation and Monitoring	45	Development Activities

Considering the identified main and subcategories, the conceptual model of co-creation of value can be presented as follows:

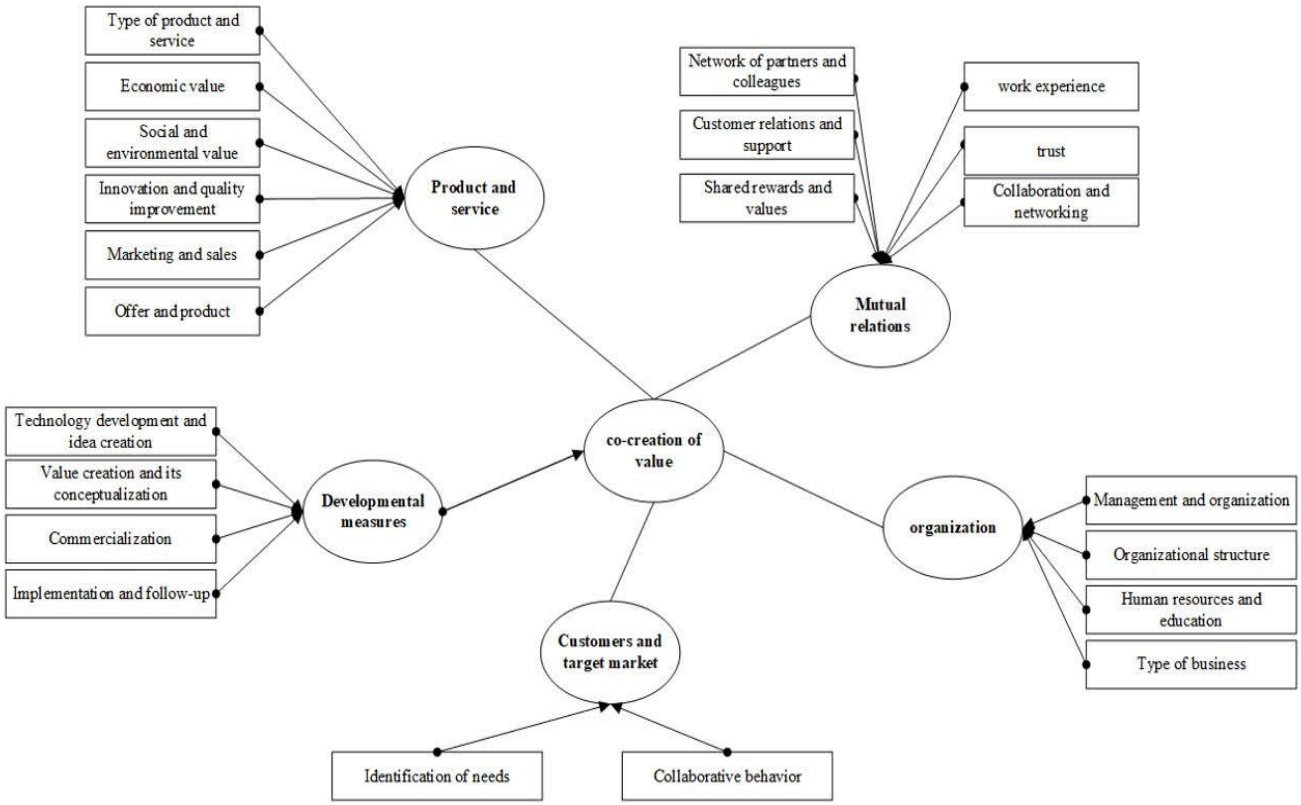

Figure 5. Preliminary Conceptual Mode

In order to determine the importance of each of the sub-categories, it is necessary to calculate the weight of each of the proposed indicators. For this purpose, the Shannon entropy method was used for ranking the indicators. In most multi-criteria decision-making problems, knowing the weights of the elements is very important. The Shannon entropy technique is one of the methods used to determine the weights of the elements. In this technique, the weight of elements is determined based on the degree of dispersion of the values of the elements. According to the weights obtained from the indicators in this stage of the Shannon entropy technique, those indicators that have more dispersion are more important than others, and their influence in selecting the optimal option is greater. The steps of this method are as follows:

First, a decision matrix is formed. To create this decision matrix, if the criteria are qualitative, verbal expressions should be used to evaluate each option against each criterion, and if the criteria are quantitative, the real numerical evaluations should be included:

$$X = \begin{bmatrix} x_{11} & \cdots & x_{1n} \\ \vdots & \ddots & \vdots \\ x_{m1} & \cdots & x_{mn} \end{bmatrix} \quad (1)$$

Step 2: The matrix is normalized, and each normalized element is referred to as P_ij. Normalization is performed by dividing each element of the column by the sum of the column.

Step 3: Calculation of the entropy for each index; the entropy Ej is calculated as follows, where k serves as a constant that keeps the value of Ej between 0 and 1."

$$E_j = -k \sum_{i=1}^{m} P_{ij} \times \ln P_{ij} \qquad i = 1,2,\ldots,m \tag{2}$$

where p(x) is the probability distribution of the random variable X. An increase in Shannon entropy leads to greater uncertainty and less information about the knowledge of the random variable. Another interesting aspect of Shannon entropy is its maximum entropy property for a uniform distribution.

Step 4: Next, the value of d_j (deviation degree) is calculated, which indicates how much useful information the relevant index (d_j) provides to the decision-maker for decision-making. The closer the measured values of an index are to each other, the more it indicates that the competing options do not differ significantly from each other regarding that index.

$$d_j = 1 - E_j \tag{3}$$

Therefore, the role of that indicator in decision-making should be reduced accordingly.

Step 5: Then, the weight W_j is calculated. In fact, the weight of the criterion is equal to each d_j divided by the sum of all d_j values.

$$w_j = \frac{d_j}{\sum d_j} \tag{4}$$

The results of this section are presented in Table 7.

Table 7. Weight and Rank of Proposed Indices Using Shannon Entropy Approach

Rank	Importance Index	Sub-Theme	Core Theme
3	0.0423	Type of Products and Services	Products and Services
4	0.0270	Economic Value	
6	0.0137	Social and Environmental Value	
3	0.0423	Innovation and Quality Improvement	
2	0.0759	Marketing and Sales	
10	0.0082	New Product Proposal	
10	0.0082	Network of Partners and Collaborators	Interrelationships
3	0.0423	Customer Relationships and Support	

9	0.0127	Shared Rewards and Values	
2	0.0759	User Experience	
5	0.0175	Trust	
12	0.008	Collaboration and Networking	
7	0.0133	Management and Organization	
2	0.0759	Organizational Structure	
1	0.175	Human Resources and | Training	Organization
6	0.0137	Type of Business	
9	0.009	Participatory Behavior	Customers and Target Market
12	0.008	Identifying Needs	
11	0.0081	Technology Development and Idea Creation	
13	0.00298	Value Creation and its Conceptualization	Development Activities
4	0.0270	Commercialization	
8	0.0132	Implementation and Follow-Up	

Source: Research findings

As the results indicate, the highest importance coefficients are related to human resources and training, organizational structure, marketing and sales, product and service type, innovation and quality improvement, and customer relations and support. In Figure 6, the main categories are compared in terms of their frequency.

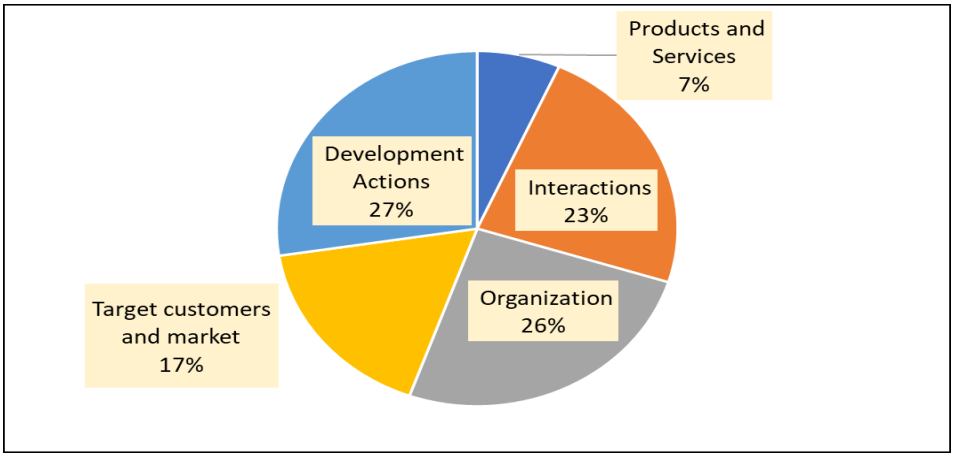

Figure 6. Comparison of the Frequency of Main Categories in Conducted Research Studies.

By reviewing previous research based on the extracted codes and comparing their frequencies as shown in Table 6, it can be concluded that the greatest attention of researchers is, in order, related to developmental actions, organization, and interactive relationships.

6. Discussion and Conclusion

Considering the research question, which asks, "What dimensions and components does value creation in technology-based startups entail from the perspective of previous domestic and international studies?", this study aimed to review previous domestic and international research. Based on a summary of the theoretical foundations, the co-creation of value in technology-based startups is such that it brings value to society, customers, and organizations. In other words, when a startup provides new and different values that improve the social, economic, or personal conditions of individuals, co-creation of value can be claimed. These startups usually achieve this goal through technological innovations and the use of advanced technologies. Generally, co-created value in technology-based startups includes three factors: First, the startup provides additional value to its customers through the offering of products or services. This value may manifest as increased productivity, improved customer experience, reduced costs, or solving a problem and meeting customer needs. Second, startups typically strive to improve societal conditions by offering products and services that have been made possible through innovative technology. This value can include job creation, health improvements, environmental preservation, and local economic development. Third, startups provide financial value by generating income and profits for themselves and their stakeholders. This includes revenue growth, brand expansion, and creating investment opportunities. However, this financial value does not necessarily translate into financial sustainability and strong competition with other competitors. Based on the research findings and in response to the research question, this study identified five main components and 22 sub-components for co-creating value, which will be discussed in the following section:

Interconnected Relationships:Interconnected relationships refer to the establishment of reciprocal communications between startups and customers, partners, the community, and the relevant technology ecosystem. These relationships play a vital role in the co-creation of value in innovative technology-based startups. Interconnected relationships foster strong and strategic connections between startups and their customers. These connections enable startups to gain a deeper understanding of customer needs and problems, which helps in the development of better products and services tailored to those needs. Additionally, these relationships allow startups to deliver and utilize internal feedback and maintain continuous communication with customers, leading to improved solutions and ongoing enhancements in their products and services. Furthermore, interconnected relationships with other stakeholders in the technology ecosystem are also greatly significant. This includes relationships with collaborators, business partners, cultural creators, investors, and other members of the technology ecosystem, which can facilitate the exchange of knowledge, resources, and valuable experiences. These interconnections can contribute to the emergence of new opportunities, improved performance, and the expansion of startups.

Organization:Organization refers to the structure and order present within a startup, which is necessary for co-creating value and coordinating activities. Organization can serve as an effective

factor in the creation of shared value in innovative technology-based startups. In a startup, organization pertains to the establishment of a structure designed to meet clearly defined and regulated goals. This structure may include task division, processes, team management, and coordination of various activities. Through proper and appropriate organization, a startup can leverage its resources and maximize quality and productivity.

Products and Services: Products and services refer to the outputs that a startup offers to its customers or target market. These products and services can be physical or non-physical and can be produced based on new technologies. They are one of the critical factors in creating shared value in technology-based startups. The products and services of a startup can meet customer needs and solve their problems. This ability of a startup to provide unique and valuable products and services can lead to customer satisfaction, attract and retain customers, and build long-term relationships with them. Innovative technology products and services offer startups advantages such as access to innovation, high competitiveness, the ability to accelerate the development process and enhance products and services, cost reduction, increased efficiency, and improved customer experiences.

Development action: Development action refer to the activities and strategies that a startup undertakes to grow, improve, and create shared value in the market and for its customers. These initiatives are particularly important in technology-based startups and can lead to significant competitive advantages and greater success in the market. Development initiatives may include the following:

- Research and Development (R&D): Startups should prioritize research and technology development. This includes discovering new technologies, updating and improving existing technologies, and creating technological innovations. These activities can help establish competitive advantages for the startup and enhance shared value.

- Product Development: Progress in R&D can lead to the development of better and superior products and services. Startups need to focus on enhancing and developing their offerings to meet customer needs and provide added value.

- Marketing and Sales: Startups must implement appropriate marketing and sales strategies to attract and retain customers. These methods include marketing strategies, advertising, public relations, and sales. Startups should be able to effectively introduce their products and communicate their value to customers.

- Developing Partnerships: Startups can enhance their potential for development and growth by establishing collaborations with business partners, institutions, universities, and other members of the technology ecosystem. These collaborations can help share workloads, leverage technical and financial resources, exchange knowledge, and create competitive advantages.

Customers and Target Market: Customers and the target market refer to entities that influence the creation of shared value in innovation-driven startups. These are the individuals for whom the startup offers its products and services. They can be recognized as customers, who purchase the products or services, and as the target market, who are considered appealing to the startup and are

likely to purchase the products or services in the future. Identifying customers and the target market is essential for the startup because these individuals play a crucial role in the success or failure of the startup. For example:

- Understanding Customers: Startups must understand the needs and problems of their customers to develop products and services that best address these needs. This includes gaining a deeper understanding of customers' needs, preferences, characteristics, and challenges.

- Target Market: Startups should define their target market and directly work to attract and serve this market. This involves understanding competitors, market size, revenue streams, and competitive advantages in the market.

- Identifying Needs and Preferences: Startups need to identify the needs and preferences of customers and design and develop their products and services based on these needs. This requires novel technologies and innovation.

- Customer Interaction: Startups should engage with their customers to assess their satisfaction with products and services and gather feedback. This can help improve products and services and strengthen relationships with customers.

One of the fundamental limitations of the current research was the difficulties in finding a rich body of research in the relevant field. Given that the research topic has practical implications, scientific studies and academic research focused on creating shared value characteristics in innovation-driven startups were found by the researcher only in a limited fashion. This has been one of the limitations of the present study. In this context, for future studies, it is recommended to examine the relationship between creating shared value and the success of innovation-driven startups, design an optimal model for creating shared value in technology-based startups with input from industry experts, and assess the impact of utilizing shared value strategies on the performance of innovation-driven startups.

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