

DESIGN THINKING LANDSCAPE IN ENTREPRENEURSHIP RESEARCH: A BIBLIOMETRIC-BASED SYSTEMATIC REVIEW

Management

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ABSTRACT

Design thinking has emerged as a prominent approach to problem-solving and innovation, increasingly adopted by organizations and individuals to address complex challenges and improve outcomes. Its collaborative, creative, and human-centered nature makes it a powerful tool for generating innovative solutions. Yet, consensus on its core features, definitions, and applications remains lacking. To clarify its role within entrepreneurial scholarship, this study systematically reviews 106 conceptual and empirical works. Using descriptive and bibliometric analysis, it maps conceptualizations, tools, models, and links to entrepreneurship, offering a foundational overview of design thinking's evolution and future research directions.

KEYWORDS

Design, Design Thinking, Entrepreneurship, Science Mapping, Bibliometric Review, Systematic Review.

INTRODUCTION

Over the past decade, design thinking has gained prominence as a creative and analytical process for problem-solving, innovation, and prototyping (Brown, 2008; Martin, 2009; Razzouk & Shute, 2012; Jahanshahi & Nawaser, 2018; Cross, 2006; Dunne & Martin, 2006; Eizi et al., 2013). Leading journals and outlets such as JPIM, AMJ, HBR, and The Economist highlight its value in addressing complex challenges such as mental health (Chen et al., 2021; Seidel & Fixson, 2013; Davis, 2010; Dencker & Shah, 2009). Meanwhile, rapid technological and market shifts have disrupted traditional business, AI, and regulation planning (Asghari Moghaddam & Pakuhinezhad, 2024a; Asghari Moghaddam & Pakuhinezhad, 2024b; Sepahvand et al., 2023; Yaghoubi et al., 2011; Pakuhinezhad, 2024b; Pakuhinezhad & Afsham, 2025; Pakuhinezhad & Atrian, 2024; Pakuhinezhad & Atrian, 2024; Pakuhinezhad, 2023; Nawaser et al., 2023), underscoring the need for approaches like design thinking to manage uncertainty in entrepreneurship (Adams & Huff, 2016; Etemadi et al., 2022; Vafaei-Zadeh et al., 2024). Although related perspectives, such as effectuation, exist (Gheitarani et al., 2024; Gong et al., 2021), entrepreneurship research has yet to explore the cognitive basis and potential of design thinking fully (Hakkak et al., 2022; Hakkak et al., 2016; Cross, 2006). Three gaps stand out. First, entrepreneurial recognition research, despite overlaps with ideation, learning, and experimentation, rarely integrates design thinking (Taherinia et al., 2021; Jafarkhani et al., 2024). Second, design thinking is underutilized in entrepreneurship education, despite its influence on lean startup methods and curricula (Basirat et al., 2025; Pakuhinezhad, 2024; Ahmadkhan et al., 2025). Third, while design thinking offers tools for navigating uncertainty and complexity (Pakuhezhad & Afsham, 2025a; Seyedkhamoushi et al., 2025), entrepreneurship research does not systematically apply it. This review addresses these gaps by providing a comprehensive bibliometric mapping of design thinking within entrepreneurship, highlighting conceptual trends, tools, and models (Zupic & Čater, 2015). Using science mapping rather than critical synthesis, the study identifies structural and relational patterns in knowledge production in DT.

METHOD

Advances in computing enable bibliometric methods, science mapping, network, and text analysis to reveal research trends (Zupic, 2015; Nawaser et al., 2024; Eck & Waltman, 2017). Applied across entrepreneurship (Short et al., 2009; Moreira et al., 2019; Thananusak, 2019), this study uses bibliometric mapping to examine design thinking. Following review protocols (Schwab et al., 2001), literature from major databases and gray sources was screened (1985–2019), yielding 106 relevant publications for trend analysis. As shown in Figure 1, the concept of design thinking is increasing from 1985 to

2019, which makes it very difficult to carry out relevant literature.

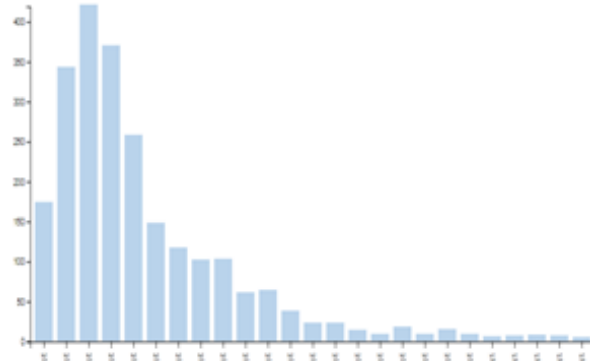


Figure 1: Year of Early Study publications associated with the literature review.

FINDINGS

Design thinking, popularized by IDEO and Stanford's d.school, emphasizes creativity, empathy, and collaboration (Brown, 2008; Jahnke, 2009; Davies, 2010) and supports human-centered innovation (Norman & Verganti, 2012). This study uses co-word analysis to reveal key themes in design thinking and entrepreneurship (Zupic & Čater, 2015).

Keyword	Occurrences	Total link strength
design thinking	62	106
entrepreneurship	33	69
innovation	26	55
education	12	29
creativity	8	26
entrepreneurship education	11	25
performance	8	23
management	9	22
model	7	22
perspective	6	20
business	6	16
effectuation	5	15
thinking	5	15
design	6	14
enterprise	5	13
social entrepreneurship	7	13
science	5	12

Figure 2: The most frequently occurring keywords in the design thinking and entrepreneurship literature

A VOSviewer co-word map (Figure 3) revealed three themes: design thinking (red cluster) with enterprise, business, social entrepreneurship, and education; and entrepreneurship (green cluster) with innovation, thinking, creativity, and model.



Figure 3. Subject analysis of design thinking and entrepreneurship literature

The third theme, education (blue cluster), includes keywords like effectuation, management, and performance, highlighting interest in teaching design thinking in entrepreneurship.

CONCLUSIONS

Research on design thinking and entrepreneurship lacks consistent definitions and attention to cognitive foundations. Most studies focus on methods in entrepreneurial education, while conceptualization remains limited. This review integrates definitions, models, and tools to clarify its role. Findings reveal strong parallels with entrepreneurship: interdisciplinary teamwork, handling uncertainty, empathy, and creativity (Buchanan, 1992; Brown, 2008; Sarasvathy, 2004). Both entrepreneurs and designers rely on empathy to identify needs and on creativity to generate opportunities (Lee, 2002; Mathews, 2010), making these traits the core intersection of the fields.

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