

RESEARCH ARTICLE

Design Thinking as Inquiry: A Pragmatic Method for Researching Complex Finance Contexts

Jacqueline Fendt

ESCP Europe Business School, Paris France.

Received: 16 November 2024 Accepted: 02 December 2024 Published: 10 December 2024

Corresponding Author: Jacqueline Fendt, ESCP Europe Business School, Paris France.

Abstract

Design thinking has become a prominent methodology for tackling complex problems in various fields, yet its potential as a research tool in finance remains largely untapped. This paper explores how design thinking can serve as a robust abductive research methodology, particularly suited for the uncertain and dynamic nature of financial research. By aligning the iterative processes of design thinking with the principles of pragmatism, this approach bridges the gap between theory and practice, fostering actionable insights. We demonstrate how design thinking's human-centered ethos and iterative experimentation can be effectively employed to address "wicked problems" in finance, such as market volatility, financial inclusion, and behavioral finance anomalies. Drawing on foundational pragmatist philosophies and qualitative research methodologies, we propose a framework for applying design thinking to financial research, offering new pathways for theoretical development and empirical application.

Keywords: Design Thinking Method, Theory-Practice Gap, Qualitative Research, Finance Research, Abductive Reasoning, Pragmatism, Theoretical Framework, Human-Centered Design.

1. Introduction

Design thinking is widely recognized as a human-centered, iterative approach to solving complex, ambiguous problems. Originating in fields such as architecture and industrial design, its adoption across sectors—business, healthcare, and education—has positioned it as a versatile and practical problem-solving methodology. However, the academic discourse surrounding design thinking has primarily focused on its utility in praxis, overlooking its potential as a robust qualitative research method.

Financial research is often characterized by uncertainty and complexity, requiring methods that can adapt to rapidly changing contexts and incomplete information. Traditional methodologies, such as econometric modeling or deductive reasoning, while effective in certain domains, often struggle to effectively address the multifaceted and emergent nature of modern financial phenomena, especially when human nature is part of the equation.

2. Theoretical Underpinning

2.1 Design Thinking as Abductive Inquiry

Abductive reasoning, coined by Charles Sanders Peirce, is a logical process aimed at generating plausible explanations for surprising phenomena. Unlike deduction, which derives conclusions from premises, or induction, which generalizes from observations, abduction begins with an observation and seeks the most likely explanation. This type of reasoning thrives in conditions of uncertainty and complexity, where conventional methods fall short.

Design thinking operates fundamentally as an abductive process. The iterative cycle of empathizing, defining, ideating, prototyping, and testing mirrors abduction's exploratory logic. Each stage involves reframing problems, hypothesizing solutions, and testing their plausibility in real-world contexts. For example, during the ideation phase, designers generate multiple potential solutions, reflecting the

Citation: Jacqueline Fendt. Design Thinking as Inquiry: A Pragmatic Method for Researching Complex Finance Contexts. *Journal of Banking and Finance Management* 2024;5(2):12-24.

©The Author(s) 2024. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

“creative leap” central to abduction (Dorst, 2011). The subsequent testing phase refines these hypotheses through experimentation, much like how researchers test abductive inferences against data.

Design thinking’s reliance on context-sensitive inquiry aligns it with qualitative research methods, where abductive reasoning is increasingly valued for its ability to generate theory from rich, situated data (Lincoln & Guba, 1985). In grounded theory, for instance, researchers iteratively move between data collection and analysis, akin to the iterative cycles in design thinking. This abductive nature enables design thinking to function as a methodology for exploring complex, multi-faceted phenomena.

Abduction, as articulated by Charles Sanders Peirce, is a mode of reasoning that generates hypotheses to explain surprising phenomena. Unlike deduction, which confirms truths, or induction, which generalizes observations, abduction involves forming plausible explanations based on incomplete or ambiguous information. Design thinking embodies this abductive process. The iterative cycles of empathizing, defining, ideating, prototyping, and testing mirror the abductive sequence of generating, testing, and refining hypotheses. For instance, the ideation phase of design thinking involves producing multiple potential solutions, akin to abduction’s creative leap to generate new possibilities (Martin, 2009).

2.2 Pragmatism and Design Thinking

Pragmatism, a philosophical tradition originating with Peirce, Dewey, and James (1907), emphasizes the interplay of thought and action in the pursuit of knowledge. Unlike Cartesian dualism, pragmatism views inquiry as an adaptive process aimed at resolving doubt through iterative experimentation. Knowledge, in this framework, is not static or absolute but provisional and situated within lived experience. Inquiry, within the pragmatist framework, is a process of resolving doubt through iterative experimentation and reflection. Similarly, design thinking thrives on iterative cycles of problem framing, solution testing, and knowledge creation.

Both pragmatism and design thinking reject the notion of static truth. Instead, they embrace provisional, action-oriented knowledge that evolves with new insights (Kolko, 2010). This dynamic aligns with Dewey’s view of inquiry as a process embedded in the realities of lived experience, making design thinking a natural ally in navigating uncertain research contexts. Design thinking resonates strongly with these principles.

Pragmatism’s focus on action-oriented inquiry aligns with the iterative and dynamic processes of design thinking. Both paradigms reject linear, reductive approaches to problem-solving in favor of exploratory, context-sensitive methods (Biesta & Burbules, 2003). For instance, Dewey’s concept of reflective thought parallels the iterative cycles in design thinking, where solutions are continuously refined through feedback and testing. Moreover, both pragmatism and design thinking embrace ambiguity and complexity. Dewey (1938) argued that uncertainty is an essential driver of inquiry, compelling individuals to engage in creative problem-solving. Similarly, design thinking thrives in “wicked” problem spaces where clear definitions and solutions are elusive. By incorporating multiple perspectives and iterative experimentation, design thinking operationalizes the pragmatist ethos of adaptive, action-based inquiry.

2.3 Epistemological and Methodological Frameworks

The epistemological roots of design thinking are deeply intertwined with qualitative research methodologies. Its focus on human-centered inquiry and iterative processes aligns it with ethnography, action research, and grounded theory. However, design thinking’s emphasis on creativity and prototyping distinguishes it as a methodology that integrates theory generation with real-world application. Ethnographic methods, for example, prioritize immersion in the subject’s context to uncover insights into human behavior. Similarly, design thinking begins with empathizing, a process that involves deeply understanding the user’s needs and experiences. This immersion fosters a nuanced understanding of complex phenomena, which informs hypothesis generation and testing. Grounded theory shares design thinking’s iterative, abductive nature (Charmaz, 2006). Researchers move cyclically between data collection and analysis to generate emergent theories, mirroring design thinking’s cyclical prototyping and testing. Action research, another qualitative method, parallels design thinking’s commitment to collaborative, solution-oriented inquiry (Reason & Bradbury, 2001). Both methodologies prioritize practical problem-solving while generating theoretical insights.

What sets design thinking apart is its explicit focus on creativity and innovation. The use of rapid prototyping and iterative experimentation encourages researchers to explore unconventional solutions and refine their approaches dynamically. This makes design thinking particularly well-suited for studying complex, fast-

changing phenomena where traditional methodologies may struggle. Design thinking's epistemological alignment with abduction and pragmatism positions it as a robust qualitative research methodology. Its reliance on contextualized understanding and iterative testing resonates with ethnography, grounded theory, and action research (Creswell & Poth, 2018). However, design thinking distinguishes itself by foregrounding creativity and iterative prototyping as integral to knowledge generation.

3. Design Thinking Method in Finance Research

Design thinking offers a novel methodology for addressing financial research challenges characterized by complexity, uncertainty, and human-centric dimensions. Below, we outline several specific areas in finance where design thinking method can contribute significantly.

3.1 Behavioral Finance: Overcoming Cognitive Biases

Behavioral finance explores how psychological factors influence financial decision-making, often leading to anomalies like over confidence, loss aversion, and herding behavior (Kahneman & Tversky, 1979; Shiller, 2000). Design thinking method provides tools to address these issues by engaging stakeholders in iterative cycles of ideation and testing. For example:

- **Empathizing with Investors:** Researchers can use empathy-driven methods, such as in-depth interviews and ethnography, to understand the emotional and psychological drivers behind investment decisions (Cross, 2011; Charmaz, 2006).
- **Prototyping Decision Aids:** Prototyping applications that visualize risk and reward dynamically can help mitigate biases like overconfidence and hyperbolic discounting (Kolko, 2010). These prototypes can be tested and refined based on user feedback, ensuring practicality.

3.2 Financial Inclusion: Designing for Underserved Populations

Financial inclusion involves creating financial systems that accommodate marginalized and underserved populations (Demirgüç-Kunt et al., 2018). This presents a “wicked problem” requiring innovative, multi-dimensional solutions (Rittel & Webber, 1973).

- **Human-Centered Design:** Using empathy maps and journey mapping, researchers can uncover barriers

preventing financial access, such as cultural norms or technological illiteracy (Brown, 2009).

- **Iterative Prototyping:** Iterative cycles of solution development can lead to innovative products, such as mobile-based microcredit platforms tailored to specific communities.
- **Collaborative Ideation:** By involving stakeholders—banks, policymakers, and end-users—design thinking facilitates co-creation, ensuring solutions align with the lived realities of target populations (Buchanan, 1992).

3.3 Market Uncertainty: Navigating Volatility and Risk

The dynamic and uncertain nature of financial markets makes them ideal for design thinking's iterative and abductive approaches.

- **Scenario Testing:** Iterative prototyping can be used to model potential impacts of market shocks, such as interest rate hikes or geopolitical events. These prototypes can incorporate stakeholder feedback to refine predictive models (Martin, 2009).
- **Designing Regulatory Frameworks:** Regulatory bodies can use design thinking to engage with diverse stakeholders, balancing market stability with innovation. For example, prototyping regulatory sandboxes for fintech solutions enables dynamic testing without full-scale implementation risks (Kane, 1981).

3.4 Sustainable Finance: Aligning Profit with Purpose

Sustainable finance seeks to balance economic returns with environmental and social goals. Design thinking provides a methodology for resolving the inherent trade-offs.

- **Co-Creating ESG Metrics:** Involving investors, regulators, and environmental scientists in ideation workshops can result in robust, transparent metrics for assessing Environmental, Social, and Governance (ESG) factors (Freeman et al., 2010).
- **Iterative Policy Development:** Policymakers can use design thinking method to experiment with green bond frameworks, ensuring their scalability and adaptability in diverse economic contexts (Dorst, 2011).

3.5 Fintech Innovation: Designing User-Centric Technologies

Fintech disrupts traditional financial systems by introducing technologies such as blockchain, robo-

advisors, mobile payment platforms and any number of AI-inspired solutions. Design thinking enhances fintech development by centering on user experience.

- **User Personas:** Developing detailed personas for diverse financial users helps identify pain points in existing platforms (Cross, 2011).
- **Rapid Prototyping:** Iterative prototyping of applications, such as peer-to-peer lending platforms, can address usability challenges before large-scale deployment (Kelley & Kelley, 2013).
- **Regulatory Compatibility:** Engaging with regulators during the ideation phase ensures compliance without stifling innovation (Buchanan, 1992).

4. Value Added of Design Thinking as a Method

4.1 Bridging the Theory-Practice Gap

One of the longstanding critiques of academic research in management and related disciplines is the “theory-practice gap”—the disconnect between theoretical knowledge produced in academia and its applicability in real-world contexts (Fendt & Kaminska-Labbé, 2010). Design thinking offers a promising approach to bridge this divide by integrating the rigorous exploration of theory with actionable problem-solving strategies. At its core, design thinking prioritizes relevance. For example, its application in management science has yielded both innovative strategies and new theoretical frameworks for understanding organizational behavior. By centering on the user and the context, it ensures that theoretical constructs do not remain abstract but are tested and refined in real-world applications. For instance, in the domain of healthcare, design thinking has been used to reimagine patient experiences by incorporating both systemic insights and empirical feedback through iterative prototyping. This dual focus on empirical testing and theoretical grounding illustrates how design thinking method mediates between academic inquiry and practice.

Moreover, design thinking method transcends the linear dichotomy of “knowledge for understanding” versus “knowledge for action.” Instead, it proposes a dialectical approach where understanding and action co-evolve. This iterative cycle—moving between problem framing, ideation, and testing—generates knowledge that is simultaneously actionable and conceptually robust. Academic research adopting

design thinking methodologies can thus produce outputs that are not only theoretically insightful but also directly applicable to complex, real-world challenges.

Finally, design thinking contributes to breaking down silos between researchers and practitioners. By embedding collaboration into its methodology, it fosters an engaged scholarship model (Van de Ven & Johnson, 2006), where academic and practitioner communities co-create knowledge. This dynamic is particularly evident in co-design workshops and participatory action research projects, where practitioners actively contribute to the development of theoretical insights.

4.2 Implications for Research Methodology

Design thinking method represents a paradigm shift in qualitative research methodologies by challenging traditional notions of rigor and validity. While classical qualitative methods such as ethnography and grounded theory emphasize deep immersion and systematic analysis, design thinking method adds a distinctive layer of creativity and dynamic iteration. This approach makes it uniquely equipped to tackle contemporary research challenges characterized by complexity, ambiguity, and rapid change.

One of the most significant methodological contributions of design thinking is its explicit integration of abductive reasoning. Unlike deductive or inductive reasoning, which rely on predefined frameworks or generalized patterns, abduction thrives in uncertainty. By generating hypotheses based on incomplete data, design thinking mirrors the iterative cycles of qualitative inquiry while introducing an innovative layer of hypothesis testing through prototyping. For example, in educational research, design thinking has been used to develop and refine interventions for enhancing student engagement, generating insights into pedagogical frameworks.

Additionally, design thinking broadens the methodological toolkit of researchers by incorporating diverse modes of representation, including visual artifacts, physical prototypes, and collaborative brainstorming sessions. These methods enable researchers to explore phenomena that may not be easily captured through traditional narrative or coding-based techniques. This multimodal approach is particularly beneficial for studying dynamic systems or contexts where variables interact in complex ways.

The participatory nature of design thinking also aligns with emerging trends in qualitative research that

emphasize co-creation and stakeholder involvement (Brown, 2009). By involving participants as co-designers, researchers can capture richer, more nuanced data while simultaneously empowering stakeholders to contribute to knowledge production. This participatory ethos not only enhances the validity of findings but also aligns with principles of equity and inclusion in research.

4.3 Navigating Uncertainty

Navigating uncertainty is one of the defining strengths of design thinking, making it a powerful tool for qualitative research in complex, rapidly changing environments. Uncertainty, as conceptualized in pragmatism, is not merely a challenge but a catalyst for inquiry and innovation. Design thinking operationalizes this principle by embedding iterative experimentation into its methodology, enabling researchers to explore emergent phenomena and adapt dynamically to new insights.

In uncertain contexts, traditional linear research methods often fall short. Design thinking method addresses this limitation by employing divergent and convergent thinking processes. Divergent thinking allows for the generation of multiple hypotheses or solutions, while convergent thinking focuses on refining and selecting the most promising options. This dual approach ensures that researchers remain open to new possibilities while maintaining a clear trajectory toward actionable insights.

A practical example of this is seen in urban planning research, where design thinking has been used to address wicked problems such as housing shortages and sustainable infrastructure development. By iteratively prototyping solutions and engaging with diverse stakeholder groups, researchers can navigate the uncertainty inherent in these complex systems while generating actionable insights that inform both policy and theory.

Moreover, design thinking aligns with contemporary qualitative methodologies that emphasize emergence and adaptability. As noted by Fendt (2023), emergence is a key construct in understanding dynamic systems and generating higher-order theories. Design thinking's iterative cycles of hypothesis testing and refinement enable researchers to capture emergent patterns and adapt their methods in real time, ensuring that their findings remain relevant and context-sensitive.

Finally, the collaborative nature of design thinking fosters resilience in the face of uncertainty. By engaging

stakeholders as co-researchers, it distributes the cognitive load of navigating complexity and leverages diverse perspectives to generate innovative solutions. This collaborative approach not only enhances the quality of research outcomes but also builds trust and shared ownership among participants.

5. Theoretical Alignment with Finance Research

The integration of design thinking method into finance research is supported by the increasing uncertainty and complexity of the field of finance, and by its alignment with key theoretical and methodological principles.

5.1 Abductive Reasoning in Financial Research

Abduction, as articulated by Peirce (1934), involves generating hypotheses in response to surprising phenomena. In finance, such phenomena might include anomalies in asset pricing or unexpected market behaviors.

- **Iterative Hypothesis Testing:** Design thinking mirrors abductive cycles by generating, testing, and refining hypotheses through prototyping and experimentation (Kolko, 2010; Dorst, 2011).
- **Case Study Example:** In studying cryptocurrency volatility, researchers could use design thinking to hypothesize about the impact of external shocks (e.g., regulatory changes) and iteratively test scenarios in a simulated environment.

5.2 Pragmatism as an Epistemological Foundation

Pragmatism emphasizes action-oriented inquiry and dynamic knowledge generation (Dewey, 1938; James, 1907). This is particularly relevant for finance, where real-world applicability is critical.

- **Bridging Theory and Practice:** Design thinking operationalizes pragmatist principles by integrating empirical data with theoretical insights, ensuring both relevance and rigor (Van de Ven & Johnson, 2006).
- **Adapting to Complexity:** Pragmatism's focus on contextualized knowledge aligns with finance's need to navigate uncertainty and complexity (Biesta & Burbules, 2003).

5.3 Interdisciplinary Methodological Integration

Finance research benefits from integrating diverse methodologies, and design thinking complements traditional approaches such as econometrics and case studies.

- **Ethnographic Insights:** Incorporating qualitative insights from stakeholders enhances the depth of quantitative financial models (Charmaz, 2006).
- **Prototyping as Validation:** Prototyping allows researchers to iteratively test models, adding a dynamic layer to traditional static analyses (Cross, 2011).

5.4 Addressing “Wicked Problems”

“Wicked problems,” as defined by Rittel and Webber (1973), resist straightforward solutions due to their complexity and interconnectedness. Design thinking research thrives in such contexts.

- **Multi-Stakeholder Engagement:** Finance problems often involve diverse actors—investors, governments, and consumers. Design thinking facilitates collaboration, ensuring solutions are holistic and equitable (Brown, 2009).
- **Iterative Adaptation:** The non-linear nature of design thinking allows for continuous refinement of strategies, addressing emergent challenges in volatile financial environments (Martin, 2009).

6. Toward a Design Thinking Method Framework for Finance Research

Along the familiar process steps of design thinking method we now propose a simple, standardized framework, each with key activities and templates, by which to conduct qualitative research in a finance setting, using design thinking method. These can provide a fil rouge for scholars to follow and for reviewers to understand the structure and the rigor of the research at hand.

6.1 Empathize: Understanding Stakeholders and Context

The first phase the researcher focuses on deeply understanding the lived experiences, perspectives, and needs of the stakeholders involved in financial systems. This stage is crucial for identifying the problem space and gathering qualitative data.

Key Activities:

- Conduct semi-structured interviews with investors, regulators, and consumers to understand their financial behaviors and challenges (Charmaz, 2006).
- Use ethnographic observation to capture the nuances of stakeholder interactions within financial systems.

- Map user journeys to visualize stakeholder experiences in processes such as investment decision-making or accessing credit.

- **Template: Stakeholder Persona Canvas**

This canvas captures demographic, psychological, and behavioral traits of key stakeholders. It includes:

- Stakeholder demographics
- Financial goals and challenges
- Emotional drivers and pain points
- Key decision-making factors

6.2 Define: Framing the Problem

Once qualitative data is collected and thoroughly documented, the next step is to synthesize insights to define the core financial research problem. This phase involves narrowing the focus to specific, actionable research questions.

Key Activities:

- Use thematic analysis to identify patterns in qualitative data.
- Apply abductive reasoning to generate plausible hypotheses for observed phenomena (Peirce, 1934).
- Frame the research problem in terms of the stakeholder needs identified in the first phase.
- **Template: Problem Statement Worksheet**
- This worksheet provides a structured format to articulate the problem and scope:
 - Context of the financial challenge
 - Stakeholder needs identified
 - Research hypothesis or guiding question
 - Key metrics or success indicators

6.3 Ideate: Generating Hypotheses and Solutions

In this phase, researchers engage in divergent thinking to brainstorm multiple hypotheses and potential solutions for the defined problem. This stage emphasizes creativity and inclusivity. In this stage it is important to work as a research team, i.e. to triangulate the interpretations hypotheses and discuss them. Everything should be carefully documented

Key Activities:

- Facilitate co-creation workshops with stakeholders to develop hypotheses and explore financial innovations.

- Use mind maps and collaborative tools to visualize potential approaches.
- Explore cross-disciplinary insights from economics, psychology, and data science to enrich hypothesis generation.
- Template: Hypothesis Generation Matrix A structured grid that organizes ideas by:
 - Hypotheses about causes of the problem
 - Hypotheses about potential solutions
 - Feasibility and potential impact of each hypothesis
- Template: Feedback and Iteration Log A log template that tracks:
 - Stakeholder feedback
 - Prototype revisions
 - Insights generated and their implications for the research problem

6.4 Prototype: Developing Preliminary Models

Prototyping allows researchers to create tangible representations of their hypotheses or solutions, making them testable and iterative. This phase bridges theory with practice.

- Key Activities:
 - Develop financial models, simulations, or mock applications that address the research problem.
 - Use tools like Excel or Python to prototype computational models for market scenarios or investment algorithms.
 - Design visual prototypes (e.g., dashboards, mobile interfaces) for user feedback.
- Template: Prototype Development Canvas
 - This canvas includes:
 - Description of the prototype's purpose
 - Components or variables involved
 - Tools or platforms used for development
 - Key metrics for prototype success

6.5 Test: Iterating and Refining Insights

This phase involves testing prototypes with stakeholders to refine solutions and validate hypotheses. This iterative process ensures that insights remain context-sensitive and actionable.

Key Activities:

- Conduct focus groups to gather qualitative feedback on prototypes.
- Use scenario analysis to test financial models under varying market conditions.
- Iteratively refine hypotheses and prototypes based on test results.

6.6 Manuscript: Writing up and Communicating Research

The final phase in the design thinking framework for finance research involves translating the findings, insights, and iterations from the earlier phases into a structured, rigorous, and academically robust manuscript. This phase focuses on ensuring transparency, rigor, and alignment with the conventions of qualitative research manuscripts.

Key Goals

- Rigor and Reflexivity: Clearly articulate the research design, methods, and rationale, demonstrating adherence to qualitative research standards (Creswell & Poth, 2018). Reflexively consider the researcher's role in the process, acknowledging potential biases and their management.
- Transparency: Provide a detailed description of the iterative process, including failures, refinements, and the rationale for final choices (Charmaz, 2006).
- Contributions to Theory and Practice: Clearly link findings to the broader theoretical context of finance and discuss their implications for real-world applications (Van de Ven & Johnson, 2006).

Key Activities

- Organizing the Manuscript: The manuscript should follow a clear structure, including:
 - Introduction: Position the research within the broader field of finance, outlining the problem, objectives, and significance.
 - Literature Review: Situate the research within relevant qualitative and financial literature, emphasizing the alignment with design thinking.
 - Methodology: Provide a detailed account of the research framework, phases, and tools used, ensuring replicability.
 - Findings: Present the insights generated through prototypes, testing, and iterations, supported by rich qualitative data (e.g., direct quotes, thematic analysis).

- Discussion: Interpret the findings in relation to existing theories in finance, highlighting their implications for theory and practice.
- Conclusion: Summarize the study’s contributions, limitations, and suggestions for future research.
- Integrating Visuals and Templates: Include diagrams, templates, and models developed during the research process to enhance transparency and accessibility. These can help convey the iterative nature of design thinking.

Ensuring Academic Rigor

- Triangulation: Demonstrate how multiple data sources or perspectives were used to validate findings (Lincoln & Guba, 1985).
- Thick Description: Use rich, detailed narratives to provide context and depth, helping readers understand the complexity of financial phenomena.
- Theoretical Saturation: Address how iterative cycles achieved saturation, ensuring the robustness of findings (Glaser & Strauss, 1967).
- Peer Review Readiness: Prepare the manuscript to align with journal submission guidelines, paying close attention to citation styles, word limits, and formatting requirements.

6.7 Template: Manuscript Checklist for Qualitative Research

This checklist ensures the manuscript meets academic and qualitative research standards, such as: i) Clarity of Research Questions and Objectives, ii) Methodological

Transparency, iii) Reflexivity and Bias Mitigation, iv) Richness of Findings and Integration of Stakeholder Insights, v) Alignment with Theoretical and Practical Contributions, vi) Visual Integration (Templates, Prototypes, Frameworks) and vii) Adherence to Journal-Specific Guidelines.

Benefits of the Framework:

With the standardized framework and its associated templates scholars can build on a structured, rigorous and comprehensive approach to applying design thinking in finance research. By structuring the methodology into clear phases and tools, the framework ensures that researchers can navigate uncertainty and complexity effectively, while generating insights that are both practical and theoretically robust. As finance grapples with increasingly intricate global challenges, this methodology offers a pathway for innovation and actionable impact. Scholars are comforted in their innovative research approach that their work is grounded in a solid and rigorous framework, including:

- Systematic Application: The framework provides a step-by-step guide for integrating design thinking into finance research, ensuring methodological rigor.
- Stakeholder-Centeredness: By embedding empathy and co-creation, it ensures that financial research addresses real-world needs.
- Iterative loops and Adaptiveness: The iterative nature of prototyping and testing allows for dynamic responses to complex financial challenges.

Table 1. Key Structure of the Standardized Framework of Design Thinking Method

Phase	objective	Key Activities	Key Templates
1. Empathize	Understand stakeholders and the financial context.	Conduct interviews and ethnographic observations. Map stakeholder journeys. Identify pain points.	Stakeholder Persona Canvas Captures demographics, goals, challenges, and decision-making factors.
2. Define	Frame the research problem and narrow focus	Analyze qualitative data for themes. Formulate research hypotheses. Define metrics for success.	Problem Statement Worksheet Outlines the problem, stakeholder needs, and guiding hypotheses.
3. Ideate	Generate hypotheses and explore solutions	Facilitate brainstorming workshops. Use mind maps to explore ideas. Combine interdisciplinary insights.	Hypothesis Generation Matrix Organizes ideas by feasibility, impact, and focus areas.
4. Prototype	Develop preliminary models or solutions for testing	Build simulations, visual dashboards, or financial models. Design mock applications for feedback.	Prototype Development Canvas Details prototype objectives, tools used, and success metrics.
5. Test	Refine solution and validate hypotheses iteratively.	Conduct focus groups for Feedback. Perform scenario analysis. Iterate based on findings.	Feedback and Iteration Log Tracks feedback changes made, and gained
6. Document	Write and communicate the research findings.	Draft an academic manuscript. Include diagrams and templates. Ensure rigor and methodological transparency	Manuscript Checklist Ensures clarity reflexivity, and adherence to academic standards

- **Bridging Theory and Practice:** The framework's abductive reasoning aligns empirical data with theoretical insights, fostering actionable knowledge.

We now provide a clear, organized view of the above described phases, objectives, key activities and supporting templates within the proposed framework (Table 1).

7. Theoretical and Practical Contributions

This manuscript provides significant contributions to both the theoretical and practical domains of finance by introducing and operationalizing design thinking as a robust qualitative research methodology through a standardized framework, templates, and rigor recommendations.

7.1 Theoretical Contributions

The manuscript bridges a crucial gap in finance research by aligning the iterative and abductive nature of design thinking with established qualitative research traditions. The proposed framework positions design thinking not merely as a practical tool but as a methodological approach that enriches theoretical inquiry in finance. By embedding principles of abductive reasoning and pragmatism, this work provides a novel lens for exploring complex financial phenomena, such as market anomalies, behavioral biases, and financial inclusion challenges.

Further more, the inclusion of structured templates, such as the Stakeholder Persona Canvas and Hypothesis Generation Matrix, ensures methodological transparency and replicability, addressing longstanding critiques of qualitative rigor in finance research. This work also deepens the theoretical discourse by demonstrating how design thinking integrates qualitative and quantitative insights, offering a dynamic pathway for theory-building that is adaptive to uncertainty and stakeholder diversity.

7.2 Practical Contributions

On a practical level, the framework equips finance researchers and practitioners with actionable tools and processes for addressing the "wicked problems" pervasive in financial systems. The iterative prototyping and testing stages provide a structured yet flexible approach to designing solutions that are directly informed by stakeholder needs and real-world constraints. For example, the use of prototyping in developing financial models or inclusive financial products ensures that theoretical insights are

translated into practical applications with measurable impact. Additionally, the emphasis on collaboration and stakeholder engagement fosters a participatory approach, bridging the gap between academia and practice. Policymakers, financial institutions, and fintech innovators can leverage these methods to co-create actionable strategies for challenges such as regulatory compliance, sustainable finance, and financial technology adoption.

By grounding design thinking in methodological rigor while maintaining its creative and human-centered ethos, this manuscript advances both the academic understanding and practical utility of finance research. It paves the way for more inclusive, adaptive, and impactful approaches to tackling the complexities of modern financial systems.

8. Conclusion

Design thinking as a research method represents a novel, transformative approach to diverse areas of research, including finance research, offering a pragmatic and abductive framework for addressing complexity and uncertainty. Its iterative processes, human-centered ethos, and alignment with pragmatism enable researchers to bridge the gap between theory and practice. By applying design thinking to behavioral finance, financial inclusion, market volatility, sustainable finance, and fintech innovation, scholars can generate actionable insights while enriching theoretical understanding. This methodology not only enhances the relevance and impact of finance research but also positions it to address the dynamic challenges of a rapidly evolving financial landscape.

Design thinking, when reconceptualized as an abductive qualitative research methodology, represents a profound shift in how we approach complex, ambiguous, and dynamic challenges. Rooted in its iterative, human-centered process, design thinking offers a bridge between the theoretical and the practical, addressing the persistent theory-practice gap that has long characterized many academic disciplines, particularly in management and organizational studies. By situating design thinking within the epistemological framework of pragmatism, this paper has highlighted its capacity to generate knowledge that is not only actionable but also deeply contextualized and theoretically insightful.

One of the defining features of design thinking is its iterative nature. Unlike traditional linear research methodologies that proceed from problem identification to solution in a structured sequence,

design thinking thrives in non-linearity. It moves back and forth between phases of divergent and convergent thinking, ensuring that each iteration builds on the insights of the previous one. This iterative process mirrors the pragmatist philosophy that inquiry is not a quest for absolute truth but a dynamic process of resolving doubt and generating meaning in a world characterized by uncertainty.

The human-centered ethos of design thinking further underscores its value as a qualitative research methodology. By prioritizing empathy and deep engagement with stakeholders, design thinking ensures that knowledge production is not detached or abstract but firmly anchored in the lived experiences and needs of those it seeks to serve. This alignment with the pragmatist tradition of grounding inquiry in action and experience reinforces the methodological rigor and relevance of design thinking. In the context of qualitative research, this user-centered approach offers a unique lens through which to explore complex phenomena, capturing the richness of human experience while simultaneously generating actionable insights.

Moreover, the abductive reasoning that underpins design thinking distinguishes it as a methodological innovation in qualitative research. Abduction, as the process of forming plausible hypotheses based on incomplete or ambiguous information, aligns seamlessly with the exploratory and creative nature of design thinking. In its emphasis on generating and testing multiple hypotheses, design thinking offers a structured yet flexible framework for navigating the uncertainties and complexities that often characterize qualitative inquiry. This is particularly evident in its use of prototyping and testing, which allow researchers to experiment with ideas and refine them through iterative feedback, transforming ambiguity into clarity and insight.

The philosophical alignment of design thinking with pragmatism also enriches its epistemological foundation. Pragmatism, as articulated by scholars like John Dewey and William James, emphasizes the interplay of action and thought as a means of generating knowledge. This philosophical tradition recognizes that knowledge is not static or absolute but provisional and contextual, evolving through engagement with real-world problems. Design thinking method operationalizes this pragmatist ethos by embedding action into every stage of its process, from problem framing to solution implementation. This dynamic interplay between theory and practice

ensures that design thinking not only addresses immediate challenges but also contributes to the broader body of theoretical knowledge.

Another significant contribution of design thinking to qualitative research lies in its ability to address “wicked problems.” These are problems that are inherently complex, ambiguous, and resistant to straightforward solutions, often requiring a multidimensional approach that integrates diverse perspectives. The field of finance is typically a domain where this type of problems are ubiquitous. The iterative, abductive, and human-centered nature of design thinking makes it uniquely suited to tackling such challenges. By fostering collaboration among stakeholders and encouraging the exploration of multiple solutions, design thinking not only generates innovative outcomes but also deepens our understanding of the underlying complexities of the problems themselves.

The methodological innovations of design thinking method extend beyond its theoretical contributions to its practical applications. Its emphasis on creativity and experimentation, facilitated through tools like brainstorming, prototyping, and co-creation workshops, provides researchers with a rich toolkit for exploring and understanding phenomena that resist conventional analysis. These tools enable researchers to move beyond traditional methods of data collection and analysis, incorporating visual, tactile, and participatory elements that capture the dynamic and emergent nature of complex systems. In this way, design thinking enhances the methodological repertoire of qualitative research, offering new avenues for inquiry and knowledge generation.

Furthermore, design thinking’s collaborative ethos represents a shift toward more inclusive and participatory approaches to research. By engaging stakeholders as active participants in the research process, design thinking democratizes knowledge production, ensuring that diverse voices and perspectives are not only heard but integrated into the development of solutions. This participatory approach aligns with contemporary movements in qualitative research that emphasize equity, inclusion, and the co-creation of knowledge, reinforcing the relevance and impact of design thinking in addressing complex societal challenges.

The transformative potential of design thinking is particularly evident in its capacity to generate emergent insights and higher-order theories. Unlike methodologies that seek to confirm pre-existing hypotheses or fit data into established frameworks,

design thinking thrives on the unexpected. Its iterative cycles of hypothesis generation, testing, and refinement allow for the emergence of new patterns, relationships, and theoretical constructs that might otherwise remain obscured. This capacity for emergence makes design thinking a powerful tool for exploring dynamic and rapidly evolving contexts, where traditional methods often struggle to keep pace.

In addition to its methodological and theoretical contributions, design thinking fosters a mindset that is essential for qualitative research in the 21st century. This mindset is characterized by curiosity, resilience, and a willingness to embrace ambiguity and uncertainty. By encouraging researchers to adopt an experimental and iterative approach, design thinking method cultivates the flexibility and adaptability needed to navigate the complexities of contemporary research landscapes. This mindset not only enhances the quality of research outcomes but also prepares researchers to address the challenges and opportunities of an increasingly interconnected and unpredictable world.

Finally, the integration of design thinking into qualitative research methodologies represents a significant step toward bridging disciplinary boundaries. Its multidisciplinary nature, drawing from fields as diverse as architecture, engineering, and the social sciences, positions it as a unifying framework that can facilitate collaboration across traditional academic silos. This interdisciplinary approach not only enriches the research process but also expands the scope and impact of qualitative inquiry, enabling it to address complex global challenges that require integrated solutions.

In conclusion, design thinking exemplifies the convergence of theory and practice, offering a methodology that is both rigorous and relevant. Its iterative, human-centered, and abductive nature aligns with the core principles of qualitative research, while its philosophical roots in pragmatism provide a robust epistemological foundation. By addressing complex and ambiguous challenges with creativity, collaboration, and adaptability, design thinking represents a transformative approach to knowledge generation. As researchers and practitioners continue to explore its potential, design thinking is poised to play a pivotal role in shaping the future of qualitative inquiry, bridging the gap between academic knowledge and practical action, and contributing to the resolution of some of the most pressing challenges of our time.

Limitations

This paper presents a conceptual exploration of design thinking as an abductive qualitative research methodology and its alignment with pragmatist principles. It outlines, in an exemplary way, how this method can contribute novel approaches and value to such a field as finance research. While the arguments are grounded in theoretical frameworks and supplemented with illustrative examples, several limitations warrant acknowledgment:

- **Conceptual Nature:** This study primarily focuses on theoretical and conceptual insights. While the discussion is enriched by references to empirical applications, the arguments would benefit from more extensive empirical validation through case studies or longitudinal research.
- **Breadth Over Depth:** The paper covers a wide range of topics, including abductive reasoning, pragmatism, and methodological implications. However, this breadth may limit the depth of exploration into any single aspect, such as the specific mechanisms through which design thinking generates new theoretical insights.
- **Disciplinary Scope:** The application of design thinking across disciplines is briefly mentioned but not deeply analyzed. For instance, its role in fields like education, healthcare, and urban planning could be examined in more detail to provide a more nuanced understanding of its impact.
- **Lack of Comparative Analysis:** While design thinking is compared to pragmatism and traditional qualitative methodologies, a systematic comparison with other abductive approaches, such as grounded theory or ethnography, is not fully developed. This limits the ability to differentiate its unique contributions.

Ideas for Further Research

For scholars who find themselves intrigued by the ideas conceptualized in this short paper, several avenues of further inquiry and validation present themselves, some of which are evoked here:

- **Empirical Validation:** Future studies should include empirical investigations that apply design thinking method as a research methodology across diverse finance contexts. Case studies and action research projects could validate its abductive potential and its capacity to generate emergent theories.
- **Mechanisms of Abduction:** Further research could explore the specific mechanisms through which

design thinking facilitates abductive reasoning. For example, how do tools like prototyping and iterative testing contribute to hypothesis generation and refinement?

- **Cross-Disciplinary Applications:** A deeper exploration of how design thinking is adapted and applied in different disciplines would provide valuable insights into its flexibility and limitations. Comparative studies across fields such as business, education, and public policy could highlight variations in its implementation and outcomes.
- **Integration with Other Methodologies:** Future research could investigate how design thinking complements or diverges from established qualitative methodologies. For instance, exploring how design thinking might be integrated with ethnography or grounded theory could reveal synergies and challenges.
- **Evaluating Impact:** Additional work is needed to assess the long-term impact of design thinking on knowledge generation in the field of finance. This could include studies measuring the practical and theoretical contributions of design thinking in financial real-world research contexts.
- **Philosophical Foundations:** Further philosophical inquiry into the alignment of design thinking with pragmatism and other epistemological traditions could enrich its theoretical grounding. For instance, exploring its relationship with constructivism or phenomenology might reveal additional dimensions.
- **By addressing these limitations and pursuing the suggested research directions, scholars can deepen the understanding of design thinking as a qualitative research methodology and expand its potential to bridge theory and practice in diverse and complex domains.**

This conceptual paper is work in progress. We believe in sharing reflections while they are still rough, fragile and messy and while research prototypes are running, be it for the pleasure of inquiry and debate, and/or for the advancement of pragmatic experimental research epistemologies. Objectivity does not repose on the lone shoulders of each academic author, but can – and does – emerge from interplay, and dialogue. If one is wrong, there surely is someone out there to point this out. If somebody bothers to answer, then this article did stimulate, and permit advancement – and therefore served its most noble purpose.

10. References

1. Anderson, N., De Dreu, C. K. W., & Nijstad, B. A. (2004). The routinization of innovation research: A constructively critical review of the state-of-the-science. *Journal of Organizational Behavior*, 25(2), 147–173. <https://doi.org/10.1002/job.236>.
2. Biesta, G. J. J., & Burbules, N. C. (2003). *Pragmatism and Educational Research*. Rowman & Littlefield Publishers.
3. Boland, R. J., & Collopy, F. (2004). *Managing as Designing*. Stanford, CA: Stanford University Press.
4. Brown, T. (2009). *Change by Design: How Design Thinking Creates New Alternatives for Business and Society*. New York: Harper Business.
5. Buchanan, R. (1992). Wicked problems in design thinking. *Design Issues*, 8(2), 5–21. <https://doi.org/10.2307/1511637>.
6. Charmaz, K. (2006). *Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis*. Sage Publications.
7. Creswell, J. W., & Poth, C. N. (2018). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches* (4th ed.). Sage Publications.
8. Cross, N. (2011). *Design Thinking: Understanding How Designers Think and Work*. Oxford: Berg Publishers.
9. Demirgüç-Kunt, A., Klapper, L., Singer, D., & Ansar, S. (2018). *The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution*. World Bank Group.
10. Denzin, N. K., & Lincoln, Y. S. (2000). *The Handbook of Qualitative Research* (2nd ed.). Thousand Oaks, CA: Sage Publications.
11. Dewey, J. (1938). *Logic: The Theory of Inquiry*. New York: Holt, Rinehart and Winston.
12. Dorst, K. (2011). The core of ‘design thinking’ and its application. *Design Studies*, 32(6), 521–532. <https://doi.org/10.1016/j.destud.2011.07.006>.
13. Fendt, J., & Kaminska-Labbé, R. (2010). Relevance and creativity through design-driven action research: Introducing pragmatic adequacy. *European Management Journal*, 28(2), 85–104. <https://doi.org/10.1016/j.emj.2010.10.004>.
14. Fendt, J. (2023). Qualitative studies in management research: An emerging epistemology of meta-analysis. *Current Research in Psychology and Behavioral Science*, 4(1), Article 1084. <https://doi.org/10.54026/CRPBS/1084>.
15. Glaser, B. G., & Strauss, A. L. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Chicago: Aldine Publishing.

15. Hatchuel, A. (2009). A new epistemology of collective action: Management research as a responsive and actionable discipline. *European Management Review*, 6(3), 191–198. <https://doi.org/10.1057/emr.2009.17>.
16. James, W. (1907). *Pragmatism: A New Name for Some Old Ways of Thinking*. Longmans, Green, and Co. Kelley, T., & Kelley, D. (2013). *Creative Confidence: Unleashing the Creative Potential Within Us All*. New York: Crown Business.
17. Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47(2), 263–291.
18. Kolko, J. (2010). Abductive thinking and sensemaking: The drivers of design synthesis. *Design Issues*, 26(1), 15–28. <https://doi.org/10.1162/desi.2010.26.1.15>. Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic Inquiry*. Beverly Hills, CA: Sage Publications.
19. Martin, R. (2009). *The Design of Business: Why Design Thinking is the Next Competitive Advantage*. Harvard Business Press.
20. Mintzberg, H. (1994). *The Rise and Fall of Strategic Planning*. New York: Free Press. Peirce, C. S. (1934). *Collected Papers of Charles Sanders Peirce, Vol. 5: Pragmatism and Pragmaticism*. Harvard University Press.
21. Peirce, C. S. (1992). *The Essential Peirce: Selected Philosophical Writings, Volume 1 (1867–1893)*. Bloomington: Indiana University Press.
22. Reason, P., & Bradbury, H. (2001). *Handbook of Action Research: Participative Inquiry and Practice*. Sage Publications.
23. Rittel, H. W. J., & Webber, M. M. (1973). Dilemmas in a general theory of planning. *Policy Sciences*, 4(2), 155–169. <https://doi.org/10.1007/BF01405730>.
24. Rogers, E. M. (1962). *Diffusion of Innovations*. New York: Free Press.
25. Schön, D. A. (1983). *The Reflective Practitioner: How Professionals Think in Action*. New York: Basic Books.
26. Shiller, R. J. (2000). *Irrational Exuberance*. Princeton University Press.
27. St Pierre, E. A. (1997). Methodology in the folds of discourse. *International Journal of Qualitative Studies in Education*, 10(3), 265–284. <https://doi.org/10.1080/095183997237278>.
28. Van de Ven, A. H., & Johnson, P. E. (2006). Knowledge for theory and practice. *Academy of Management Review*, 31(4), 802–821. <https://doi.org/10.5465/amr.2006.22527385>.
29. Van Maanen, J. (1988). *Tales of the Field: On Writing Ethnography*. Chicago: University of Chicago Press.