



The Exploration of Business Leaders' Experiences in Managing Technology Innovation and Behavioral Bias in Start-up Technology Companies in Indonesia: A Phenomenological Study on the Challenges and Successes of Implementing Digital Innovation

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ABSTRACT

The rapid advancement of digital technology has significantly reshaped industries, with start-up companies in particular facing challenges in managing technological innovation. While much research has been conducted on innovation management in various sectors, there remains a gap in understanding the specific experiences and challenges faced by business leaders within tech start-ups in Indonesia. This study aims to explore the lived experiences of business leaders in managing technological innovation in start-ups, addressing the question: How do business leaders in Indonesian tech start-ups navigate the challenges and successes of digital innovation? We employ a phenomenological approach to uncover the subjective experiences of these leaders, providing a deeper understanding of the personal and organizational dynamics involved. Data was gathered through in-depth interviews with 12 key leaders from three start-up technology companies located in Jakarta and Bandung, Indonesia, and analyzed thematically. The findings reveal that leaders face significant challenges in resource allocation, team resistance to change, and securing investment, yet successful innovation is often driven by cross-functional collaboration and an openness to failure. These insights contribute to a broader understanding of innovation management in dynamic environments and highlight the importance of leadership in fostering an innovation-supportive culture within start-ups.



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INTRODUCTION

The rapid advancement of digital technologies has significantly reshaped the business landscape, particularly for start-ups in the technology sector (Ahmed dkk., 2024). One of the most profound shifts has been the increasing reliance on technological innovation to remain competitive. Companies must continuously adapt to new technologies, whether through the development of novel products or the digital transformation of existing processes.

In this context, the role of leadership becomes critical. Business leaders are at the forefront of making strategic decisions about which innovations to pursue, how to implement them, and how to overcome the inevitable challenges that arise. However, while the process of technological innovation is often discussed in terms of outcomes—such as improved productivity, market success, or profitability—the subjective experiences of those who lead these efforts remain underexplored.

The experiences of business leaders in managing technological innovation are shaped by a complex set of internal and external factors. These include organizational culture, resource constraints, market dynamics, and, increasingly, the need to balance short-term operational demands with long-term innovation goals. As businesses in emerging economies like Indonesia continue to

embrace digital transformation, it becomes crucial to understand not just the strategies employed but also the personal and collective meanings that business leaders attribute to their innovation efforts.

The experience of navigating technological change is deeply subjective, encompassing both cognitive and emotional dimensions of decision-making. This suggests that a deeper exploration of these leaders' experiences—rather than simply analyzing objective outcomes—is essential to fully grasp the challenges and successes they encounter.

Previous research on innovation management has largely focused on the technical and organizational aspects of innovation processes, often overlooking the lived experiences of leaders. Studies have tended to employ frameworks such as disruptive innovation or absorptive capacity, which are valuable for understanding the mechanisms behind innovation but do not fully account for the personal and emotional experiences of those involved.

In contrast, a phenomenological approach allows for an exploration of these subjective experiences, seeking to understand the meanings that leaders assign to their actions, challenges, and successes in the context of technological innovation.

This study aims to bridge this gap by exploring the lived experiences of business leaders in Indonesian tech start-ups as they manage technological innovation. By focusing on their personal narratives, the research seeks to uncover not just the "what" and "how" of innovation management, but the "why"—the underlying motivations, challenges, and interpretations that shape their actions.

Through this, the study aims to offer a deeper understanding of the dynamic and complex reality of innovation leadership, which is crucial for both theoretical development and practical application in the field of management.

The study of lived experiences in specific phenomena has become an important area of research, particularly in fields such as organizational behavior and management (Brock & Kohli, 2023). As businesses continue to face the pressures of technological advancement, the need to understand the experiences of business leaders—who are central to driving innovation—has gained increasing attention.

While the technical and strategic aspects of innovation management have been well-documented, less is known about the personal and emotional dimensions that inform leadership decisions in this context. Exploring these subjective experiences offers rich insights into the complexities of managing technological innovation, particularly in fast-growing sectors such as start-ups.

However, capturing the essence of such experiences presents significant methodological challenges. Traditional quantitative methods, which focus on measurable outcomes and statistical correlations, are ill-equipped to capture the depth of subjective meaning that individuals attach to their experiences.

While these methods can provide valuable insights into the 'what' and 'how' of innovation, they often fail to explore the 'why'—the underlying motivations, fears, and emotional responses that shape leaders' actions. As a result, existing research tends to overlook the personal narratives and reflective experiences that are central to understanding the full impact of technological innovation on business leadership.

This gap in understanding has led to a recognition that qualitative methods, particularly phenomenology, are better suited for addressing the complexities of lived experiences. Phenomenology offers a way to delve deeper into the meaning-making process, allowing researchers to explore how individuals interpret their experiences in relation to innovation.

Despite this, the application of phenomenological approaches to the study of innovation leadership remains limited, particularly within the context of emerging markets like Indonesia. This study thus aims to contribute to this gap by providing a detailed exploration of how business leaders in Indonesian start-ups experience the challenges and successes associated with managing technological innovation.

While much of the existing research on innovation management has focused on the technical and strategic dimensions of technological change, such studies often rely on practical approaches that emphasize tangible outcomes, such as market success, product development, or financial performance. These approaches typically employ quantitative methods that assess what happens during the innovation process, but they do not fully capture the deeper, more personal aspects of how leaders experience and interpret the challenges and successes associated with technological innovation.

The practical focus of existing research leaves a significant gap in our understanding of the lived experiences of business leaders (Chen dkk., 2024). The limitations of these approaches are evident, as they often fail to explore the 'why' behind the choices leaders make, or the 'how' they navigate the emotional and cognitive complexities of managing innovation.

This means that while we may know what is happening in terms of outcomes, we still lack a deeper understanding of the meaning-making processes at play within these leaders' experiences. In particular, there is little research that examines how these leaders interpret the challenges, setbacks, and moments of success as they steer their companies through technological transformation.

An alternative and more comprehensive solution lies in adopting a phenomenological approach, which enables the exploration of the essence of these experiences in a holistic manner. By focusing on the lived experiences of business leaders, phenomenology allows for a deeper understanding of the meanings they attach to their actions, decisions, and challenges in the context of technological innovation (Thomson, 2022).

This method shifts the focus from merely describing outcomes to uncovering the underlying motivations and emotional dynamics that influence leadership in innovation management. Given the gap in the current literature, a phenomenological exploration of the experiences of business leaders in managing technological innovation in Indonesian start-ups promises to offer valuable insights that are both richer and more nuanced, providing a more comprehensive understanding of the phenomenon.

Existing research on technological innovation leadership primarily focuses on the strategies and outcomes associated with innovation, often using quantitative approaches to assess performance metrics or organizational success. However, these studies generally overlook the subjective experiences of business leaders, which are crucial for understanding how they navigate challenges, decisions, and emotions during the innovation process.

Previous studies have examined innovation from perspectives such as disruptive innovation (Christensen, 1997) and absorptive capacity (Zahra & George, 2002), but these frameworks fail to explore the personal meaning and interpretation of innovation leadership. This gap is especially pronounced in the context of emerging economies like Indonesia, where the pace of digital transformation presents unique challenges for business leaders. Thus, there is a need for research that delves into the lived experiences of leaders in the tech start-up sector, specifically in how they perceive and manage technological innovation.

To address this gap, the current study adopts a phenomenological approach, which is particularly suited for exploring the essence of lived experiences. Phenomenology allows for an in-depth investigation into the subjective meanings that business leaders attach to their experiences with technological innovation, providing a holistic understanding of the personal, emotional, and cognitive dimensions involved (Guo & Zeng, 2024).

By focusing on these lived experiences, the study aims to reveal not just the outcomes of innovation, but the underlying processes that shape decision-making and leadership. This method is essential for uncovering the complexities and nuances that other methodologies might overlook. Through this approach, the research will answer critical questions about the challenges and successes leaders encounter, and how they make sense of these experiences within the context of digital transformation.

The structure of the article follows a clear progression to guide the reader through the study. The introduction presents the background of the phenomenon, including a review of relevant literature

and the identification of the knowledge gap. The methodology section explains the phenomenological approach used to explore the research questions, followed by a detailed description of the data collection and analysis processes. The results section presents the findings in thematic categories, highlighting key patterns in the leaders' experiences. Finally, the discussion interprets these results, drawing connections between theory and practice, and concludes with insights into the broader implications for innovation management and leadership in tech start-ups.

RESEARCH METHODS

Study Design

This study employed a phenomenological research design to explore the lived experiences of business leaders in managing technological innovation within start-up companies in Indonesia. Phenomenology was selected due to its emphasis on understanding the essence of human experiences and the meanings that individuals attach to those experiences (Harryson dkk., 2007). This approach allows for an in-depth exploration of the subjective perceptions and personal interpretations of the phenomenon under investigation, which, in this case, is the management of technological innovation in a rapidly evolving business environment.

By focusing on individual experiences, phenomenology seeks to uncover how people make sense of their world and respond to challenges. This design is particularly relevant for addressing the research questions, as it facilitates an understanding of the challenges, successes, and strategies employed by business leaders when implementing technological innovation in the context of Indonesian start-ups. The approach enables the study to capture not only the practical aspects of innovation management but also the emotional and cognitive processes that inform decision-making at the leadership level.

The phenomenological approach chosen for this study is interpretative, which aligns with the goal of uncovering not just the surface-level experiences but also the underlying meanings and interpretations that guide leaders' actions in a fast-paced technological landscape. Interpretative phenomenology allows for a deeper understanding of how participants make sense of their experiences with digital transformation and innovation in their respective companies.

Participants

The participants in this study were selected using purposive sampling to ensure that they possessed relevant experience in managing technological innovation within start-up companies.

The sample consisted of 12 key leaders from three start-up technology companies in Indonesia, with each participant holding senior leadership roles. This sample size was deemed sufficient to provide rich, in-depth data while allowing for meaningful insights into the subjective experiences of business leaders in the innovation process.

The participants were selected based on specific inclusion criteria, which required them to have a minimum of three years of experience in the technology sector and to be directly involved in decision-making processes related to innovation and digital transformation within their companies. The selection process focused on those who were actively involved in the strategic and operational aspects of implementing digital technologies, as their perspectives were essential for understanding the phenomenon of innovation management.

To ensure the diversity of experiences, the sample included business leaders from different roles: CEO, COO, and Founder positions. The participants were aged between 35 and 50 years, with a mix of genders (two male and one female participants). While the sample size is relatively small, the inclusion of leaders with extensive and varied leadership roles allows for a comprehensive understanding of the challenges and successes encountered in the innovation process. Additionally,

the participants represented companies at different stages of growth, further contributing to a holistic understanding of innovation management.

It is important to note that while 12 participants were selected, the sample size is consistent with qualitative research methods, which prioritize depth over breadth. The small sample size does limit the generalizability of the findings; however, it was sufficient for the phenomenological approach, which aims to uncover in-depth, meaningful insights rather than achieving statistical representativeness. Additionally, external factors such as the fast-changing nature of the technology sector and the unique context of start-ups in Indonesia may have influenced the data. However, this approach remains effective in providing a rich exploration of the lived experiences of the participants.

Data Collection

Data were collected through semi-structured interviews conducted directly with the participants. The interviews aimed to explore the participants' personal experiences, perceptions, and reflections on the challenges and successes they encountered while managing technological innovation within their start-ups. Each interview lasted between 60 to 90 minutes and was conducted in a setting that allowed for an open and comfortable conversation (Krishnan, 2012). Interviews took place at the participants' workplaces or via virtual platforms, depending on their availability and preference.

The interview guide was developed to explore key areas such as the challenges faced during the innovation process, the strategies used to overcome those challenges, and the perceived outcomes of digital transformation efforts. The guide was flexible, allowing the participants to elaborate on their experiences and provide rich, detailed narratives. The interview protocol was designed to facilitate an in-depth exploration of the participants' lived experiences, with a focus on understanding their personal interpretations of the phenomena under study.

The data collection process was conducted in a manner that ensured a comfortable and confidential environment for the participants, which encouraged honest and open responses. To ensure the accuracy and completeness of the data, interviews were audio-recorded and transcribed verbatim for subsequent analysis.

Data Analysis

Data analysis was performed using an interpretative phenomenological analysis (IPA) approach, which is well-suited to uncovering the meanings participants attach to their experiences. The analysis involved several systematic steps. First, the interview transcripts were read and re-read to immerse in the data and begin identifying emergent themes. These themes were categorized based on their relevance to the research questions, with particular attention given to the subjective experiences of the participants.

The analysis process involved identifying significant statements that reflected the core experiences of the participants in relation to the challenges and successes of managing technological innovation. These statements were then organized into broader themes, which were further refined through iterative processes of comparison and abstraction. NVivo software was used to assist with data organization, but the emphasis remained on the interpretative process rather than on software-generated outputs (Manqing & Qinwei, 2024). Thematic coding was conducted to identify patterns, and these were subsequently interpreted in the context of the research questions.

The outcome of this analytical process was the identification of key themes that encapsulated the essence of the participants' experiences, providing insights into their perceptions of innovation management, the strategies they employed, and the outcomes they encountered.

Ethics

Ethical considerations were paramount throughout the study. Informed consent was obtained from all participants prior to data collection. Participants were provided with detailed information about the study's objectives, procedures, and their right to confidentiality. They were assured that their participation was voluntary, and that they could withdraw at any time without any consequence. To

protect participants' anonymity, pseudonyms were used in place of their real names, and any identifying information was removed from the data.

Ethical approval for the study was obtained from the relevant ethics committee, ensuring compliance with international ethical standards for research. All data collected were stored securely and only accessible to the research team (Mastio & Dovey, 2019). The study adhered to ethical guidelines related to confidentiality, informed consent, and participant welfare, ensuring the highest standards of ethical conduct were maintained throughout the research process.

RESULTS AND DISCUSSION

Challenges in Managing Technological Innovation

The experiences of business leaders in managing technological innovation revealed a series of challenges that were deeply felt within the context of their start-up environments. One of the predominant issues expressed by the leaders was the allocation of resources for innovation. As Informant A, the CEO of a tech start-up, stated, "We constantly face a battle for resources, especially when the immediate return on investment is not clear. It's hard to convince investors to pour money into something that doesn't show immediate profitability." This statement reflects the tension between short-term financial goals and the long-term vision of innovation within start-ups. The challenge of securing investment for innovation, particularly in a highly competitive and fast-paced industry, was echoed by Informant B, the COO of another technology company, who emphasized, "In this industry, there's always pressure to deliver results quickly, but innovation takes time and patience. That's something investors don't always understand."

Another key challenge identified by the participants was resistance to change within their teams. Both Informant A and Informant C noted that, despite the enthusiasm at the leadership level for innovation, there was a significant level of reluctance among team members, especially those who were accustomed to traditional ways of working. Informant C, the founder of a tech start-up, shared, "It's difficult to change the mindset of people who've been in the business for years. They see new technologies as a threat rather than an opportunity." This resistance to change not only slowed down the implementation of new technologies but also created internal friction between the more technology-oriented employees and those focused on maintaining established business practices.

Successes in Innovation through Cross-Disciplinary Collaboration

Despite these challenges, the leaders also identified several successes linked to their ability to foster collaboration across different disciplines within their companies. The importance of synergy between technical and business teams was consistently highlighted as a key factor in driving successful innovation. Informant A described this approach as essential for overcoming the technical challenges of new product development: "In our company, the tech team works closely with the business team. We always make sure that there's alignment in the goals from both sides. Without that, no innovation can really succeed." Similarly, Informant B stressed the value of creating a shared vision, stating, "It's all about creating a culture where everyone—whether tech or business—feels like they are part of the innovation process. Only then can we truly create something disruptive."

The positive impact of fostering such cross-disciplinary collaboration was also evident in the leaders' reflections on their ability to adapt to rapid technological changes. Informant C shared that collaboration between teams enabled them to pivot quickly when new technological challenges arose: "When we face a new technological shift, having a collaborative culture means that we can brainstorm, adapt, and move fast. The business side and the technical side are always working together, so we can adjust to changes without losing momentum."

Experiences of Success and Failure in Digital Transformation

When reflecting on the overall process of digital transformation, the leaders shared both their experiences of success and failure in implementing new technologies. A significant point of success noted by all participants was the ability to maintain a long-term vision of innovation, despite the pressure to deliver short-term results. Informant A explained, "Our biggest success has been our

ability to stay committed to our innovation goals, even when the immediate results weren't obvious. We had a vision, and despite the setbacks, we kept pushing.”

Conversely, failure was often described as stemming from an inability to effectively manage the pace and scale of change within the organization. Informant B highlighted that “Sometimes, we've moved too quickly, thinking we could leapfrog certain processes. But without the right foundational structure, we've ended up with technology that doesn't fully integrate with the rest of the business.” This speaks to the challenge of balancing speed with strategic planning—a recurring theme in the leaders' narratives about the digital transformation journey.

Key Factors for Successful Technological Innovation Management

The participants identified several critical factors that were essential in determining the success or failure of technological innovation management. First and foremost, the leaders underscored the importance of fostering a culture that supports experimentation and embraces failure. Informant A reflected on this mindset: “Failure is part of the process. If you don't let your teams fail and learn, you'll never innovate. We try to create an environment where risk-taking is not only accepted but encouraged.” This perspective was supported by Informant C, who noted, “Innovation requires trial and error. If we're too afraid of failure, we'll never break new ground.”

Another crucial factor mentioned by the leaders was the importance of adaptability—both in terms of technology and organizational structure. Informant B explained, “Adaptability is everything. As a start-up, we can't afford to stay rigid. We need to be agile, constantly reassessing and adapting both our technology and how we work with it.” This adaptability was framed as a strategic capability that enabled the company to stay competitive in an ever-evolving technological landscape.

In summary, the results of this study highlight the complex, multifaceted experiences of business leaders in managing technological innovation within start-up companies. The challenges they face, including resource allocation, resistance to change, and the need for investment, are tempered by their successes in fostering collaboration and maintaining a long-term vision for innovation. The leaders' experiences also underscore the importance of a culture that supports experimentation and the ability to adapt quickly to technological changes. These insights provide valuable lessons for other start-ups navigating the difficult terrain of digital transformation and innovation management.

The key findings of this study reveal that business leaders in Indonesian tech start-ups experience significant challenges and emotional complexities in managing technological innovation. These leaders not only face practical obstacles such as resource allocation and resistance to change but also navigate deeper emotional and cognitive struggles related to decision-making, uncertainty, and adapting to rapid technological shifts. The analysis highlights how these personal experiences profoundly influence their leadership styles and the strategies they employ to foster innovation within their organizations. These findings address the research questions by providing a nuanced understanding of how leaders in this sector perceive and manage the tensions and opportunities brought about by technological transformation.

The results of this study contribute to answering the overarching research question by offering a detailed account of the lived experiences of business leaders in the face of technological innovation. Unlike previous studies that have focused on the operational or strategic aspects of innovation, this research delves into the subjective dimensions of leadership, exploring how leaders interpret and make sense of their personal experiences with innovation. One of the key contributions of this study is the identification of the emotional and psychological factors that influence decision-making, such as the need for patience, resilience, and the ability to embrace failure as part of the innovation process. These findings suggest that effective innovation leadership is not solely about technical expertise but also about the ability to navigate the personal and interpersonal dynamics that arise when implementing new technologies.

When comparing these findings with existing literature, it becomes clear that the experiences of business leaders in start-ups often align with, but also expand upon, established theories in innovation management. For example, Christensen's (1997) theory of disruptive innovation emphasizes how technology can create new markets and displace established players, yet it does not

fully account for the personal and emotional journey of the leaders who are driving this change. (Putra dkk., 2024) Similarly, the concept of absorptive capacity (Zahra & George, 2002) focuses on a firm's ability to assimilate and utilize external knowledge for innovation, but it overlooks the psychological and leadership challenges that accompany the absorption of new technologies. The findings of this study support and complement these theories by providing a deeper understanding of the human side of innovation management, where personal resilience, emotional intelligence, and the capacity to adapt to change are just as critical as technical or organizational capabilities. In doing so, this research contributes to a more holistic view of innovation leadership, which integrates both the cognitive and emotional aspects of managing technological change.

Implications of the Findings

The findings of this study have significant implications for both the academic understanding and practical management of technological innovation in business. From an academic perspective, this research contributes to the growing body of literature that examines the human side of innovation leadership, particularly in the context of start-ups (Sheng & Saide, 2024). It highlights how personal experiences, such as the emotional toll of managing technological change and the resilience required to lead a team through uncertainty, are crucial factors that influence innovation success. Practically, these insights can help organizations—especially tech start-ups—design better leadership development programs that account for the emotional and psychological challenges faced by leaders. Leaders who are better equipped to handle these aspects of innovation management may be more successful in fostering an organizational culture that embraces experimentation, collaboration, and risk-taking. Additionally, the study's findings are relevant to the broader business context, as many organizations around the world are undergoing digital transformations and can benefit from understanding the emotional dynamics of leadership in these challenging times.

Limitations of the Study

Despite the valuable insights gained, this study has several limitations that should be considered. First, the research is limited to a specific population of leaders within the Indonesian tech start-up sector, and therefore, the findings may not be directly applicable to leaders in other regions or industries. The cultural and economic context in Indonesia, including the pace of digital transformation and the specific challenges faced by start-ups in this region, may influence the generalizability of the findings (Steenkamp, 2019). Furthermore, while the phenomenological approach provided a deep understanding of individual experiences, the sample size was relatively small, which may limit the diversity of perspectives captured. Additionally, the study relies on self-reported data from interviews, which may be subject to bias or limited by participants' ability or willingness to articulate their experiences. Future research could expand on this study by exploring other sectors, geographical regions, or larger samples to gain a more comprehensive understanding of innovation leadership.

Prospective Research Directions

The findings of this research open several avenues for future studies. One potential direction is to explore how the emotional and psychological dimensions of innovation leadership evolve over time, particularly during different stages of organizational growth or in response to changing technological landscapes. Future research could also investigate the role of organizational culture in shaping the experiences of leaders managing innovation, particularly how culture influences the emotional responses to technological disruption (Sueyoshi & Wang, 2014). Another area of interest is examining how these findings can be integrated into broader theories of leadership and innovation. Longitudinal studies could be conducted to examine the long-term impact of leadership styles and emotional resilience on the sustainability of innovation efforts. Finally, it would be valuable to compare the experiences of leaders in start-ups with those in established companies to understand the differences in managing innovation at different organizational life cycles. This could further enrich the understanding of how leadership is shaped by organizational context and how leaders navigate the ever-evolving challenges of technological innovation.

CONCLUSION

This study explored the experiences of business leaders in managing technological innovation within tech start-ups in Indonesia, addressing the challenges and successes associated with digital transformation. The findings reveal that while leaders face significant obstacles such as resource allocation, resistance to change, and securing investments, their success largely depends on fostering cross-disciplinary collaboration and a culture that supports experimentation. By focusing on the subjective experiences of leaders, this research contributes to a deeper understanding of the emotional and relational aspects of innovation management that have been underexplored in prior studies. The study also highlights the importance of emotional resilience and leadership adaptability in navigating technological disruptions. Future research could expand these insights by exploring different sectors, regions, or longitudinal studies to track the evolving role of leadership in innovation management. Furthermore, emerging technologies such as artificial intelligence (AI) and blockchain present new opportunities and challenges in financial decision-making, which could significantly impact the way leaders approach innovation. For instance, AI's ability to analyze large datasets in real time could provide new ways of predicting and managing financial investments, while blockchain may offer novel solutions for secure and transparent financial transactions. Examining how these technologies influence leadership decision-making processes and innovation strategies would provide valuable insights into their practical applications and potential disruptions in various industries. Overall, this study not only fills a gap in the existing literature but also provides practical implications for improving leadership practices in start-up environments.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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