

# Understanding The Role of Affordance Existence Barriers in SMEs Digitalization Failure

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## ABSTRACT

The failure of digitization in small and medium-sized enterprises (SMEs) is commonly not driven by the absence of technology, instead by lack of cognition readiness to utilize it. This research focuses on the affordance stage to explore how the potential of technology fails to emerge in medium-sized SMEs due to two barriers, reliance on outdated legacy systems and absence of digital growth mindset. By applying multiple case studies, the data conducted with semi-structured interviews, field observation, and document review of medium-sized SMEs in Indonesia and analyzed using Gioia Methodology. The findings reveal that in Firm A, only 34.88% of Point of Sales (POS) system features were adopted, while in Firm B, adoption increased from 20.93% to 49.43% but remained partial and inconsistent. The findings also highlight that even though digital tools such as Point of Sales (POS) systems are technically available, digitalization are considered unnecessary or difficult to use due to strongly established preferences for manual control and the absence of mindset focused on digitalization. The novelty of this study depends on the refinement of affordance theory by explicitly identifying barriers at the existence stage, an area that has been underexplored in previous studies. This research contributes to the literature by offering conceptual refinement of digitalization failure by focusing on existence of affordance and providing practical implications for SME owners, consultants, and policymakers seeking to design more adaptive and cognitively aware digitalization strategies.

## INTRODUCTION

In the rapidly evolving digital economy, digitalization has become strategic necessity for small and medium-sized enterprises (SMEs) to improve operational efficiency and competitiveness [1]. Even though MSMEs contribute significantly to the national GDP [2], they also face intense pressure to adapt to consumer behavioral changes, increased competitiveness from modern retail stores, and advanced technology [3], [4]. Digitalization offers efficiency in daily tasks such as transaction recording, inventory control, and customer relationship management. Even though digital tools are technically available, its utilization is still limited, especially among medium-sized Indonesian MSMEs with more complex operations [5].

This research focuses on medium-sized retail SMEs in Makassar, Indonesia, consisting of two stores with differing levels of digitalization. These stores still use Point of Sale (PoS) systems for basic transactions with lack of inventory-transaction integration, absence of financial accounting, and forecasting tools. As a result, stock mismatches, informal task

allocation, finance reporting mismatches, and inefficient workflows are found. These stores still rely on manual accounting and direct operational control.

To address these challenges, both seek support from a corporate consulting firm. However, differences on the existence of digitalization were found. One store strongly denied the change because reliance on legacy system. Meanwhile, the other store initially intended to digitalize but discontinued the consultant's digitalization program due to the absence of growth mindset. Both stores also have simple digital tools such Point of Sales (PoS) systems. But they failed to establish sustainable digitalization.

Previous studies have emphasized owner-related characteristics (e.g. gender, experience, age, education, finance, technology support) as key drivers of digitalization [3], [6], [7], [8], [9]. However, those studies tend to emphasize external or demographic factors rather than cognition processes. Affordance theory offers perspective that emphasizes how user understanding influences whether technological features become realizable [10]. As conceptualized by Pérez and Vitari [11], the first stage is affordance existence which refers to the availability of digital features and digitalization program within an organization that are fully recognized, understood, and realized. However, only few studies have examined the mechanisms behind digitalization failure to be actualized, especially within the retail SME context [5].

This research adopts the affordance theory refined by Pedrola and Vitari [12], which emphasizes that affordance does not automatically arise from existence of IT artifacts, but is shaped by cognition process of organizational actors. Based on this perspective, the failure of affordance to emerge can arise from two interrelated barriers, reliance on outdated legacy systems and absence of a digital growth mindset. Reliance on outdated legacy systems refers to the tendency of organization to remain dependent on manual systems that are no longer efficient but are considered sufficient due to routine habits [5], [13]. Absence of a digital growth mindset reflects cognition misalignment where the intention to adopt digital tools is not accompanied by sufficient understanding of how digitalization works, creating a gap between ambition and actual capability [8], [14], [15].

This study aims to analyze cognitive and behavioral barriers that hinder the emergence of affordance existence in the digitalization of medium-sized enterprises. Using multiple case studies of two medium retail SMEs in Makassar, Indonesia, this research applies Gioia's methodology [16] and pattern matching [17] to identify key variables and link empirical data with theoretical framework. Even though both SMEs have adopted POS systems, their use remains limited and disconnected from broader digitalization goals, indicating failure at the early stages of digitalization process. Therefore, this research is guided by the following research question: "How do reliance on outdated legacy systems and the absence of digital growth mindset constrain the emergence of affordance existence in medium-sized retail SMEs?".

The main contribution of this study is the recognition of two barriers; reliance on outdated legacy systems and absence of digital growth mindset that help explain why digital tools fail to create meaningful affordance even when the technology is already present and adoption intentions are stated. Through its focus on medium-sized Indonesian SMEs, this study refines theoretical perspectives on digitalization failure by demonstrating how structural limitations and cognitive readiness jointly shape the early emergence of affordance. Beyond its conceptual significance, the findings also carry practical implications, offering guidance for SME owners, consultants, and policymakers to design interventions that move beyond merely providing technology, and instead address the deeper readiness factors required for sustainable digitalization.

## METHOD

This research adopts multiple case study approach and Gioia methodology [16] to analysis how cognitive and behavioural barriers influence SMEs' digitalization failure. The methodology is guided by “Yin Case Study Research Design and Method” [17] and analyzed by Gioia Methodology for qualitative data structuring and theoretical abstraction [16]. The methodological process follows four phases: Research Design, Data Collection, Data Analysis, and Theory Articulation, as shown in Figure 1.

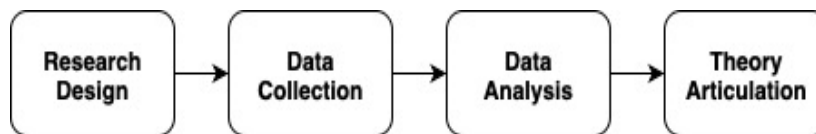


Figure 1. Research Methodology

### Research Design

This research reveals the factors hindering digitalization failure caused by the absence of affordance existence in SMEs. Qualitative multiple-case study approach was chosen to explore these phenomena in depth. Based on affordance theory [11], [12], the research defines two digitalization barriers; Reliance on outdated legacy systems and Absence of digital growth mindset.

### Data Collection

The research involves two family-owned medium-sized mom and baby equipment retailers SMEs in Makassar, Indonesia. Both firms had adopted Point of Sales (POS) systems but failed to integrate them into broader operational routines. The sample was selected theoretically to represent critical and contrasting cases of surface-level digitalization.

Data were collected through 18 semi-structured interviews with owners, consultants, and staffs. Interviews lasted 30-60 minutes and explored individual perceptions of digital systems, system usage behavior, and organizational responses to consulting support. The summary of respondents' demographic is shown in Table 2 below. Data sources were triangulated through direct field observation, PoS usage records, and internal SOPs. Informants were selected based on their operational roles and proximity to daily operations. Contextual analysis was also conducted during data collection to understand the informal and hierarchical dynamics that shape decision-making.

In this study, the term consultant refers to external digitalization consultants engaged by both SMEs to support the implementation of their Point of Sales (POS) systems. These consultants were not part of the firms' internal management structures but were temporarily contracted to provide technical assistance, training, and operational guidance. Their involvement typically covered tasks such as configuring the POS system, introducing key features, and offering recommendations on how digital tools could be integrated into day-to-day operations. The results are summarized in Table 1.

Table 1. Respondents' Demographic

Firm	Firm Industry	Firm Code	Role of Interviewee	Work-Experience (yrs)	Interviewee Code
Firm A	Medium-sized SME Retail	A	1 Owner	14	A.O1
			2 Co-Owners (Owner's Sibling)	8	A.O2 - A.O3
			5 Employees	2-14	A.E1 - A.E5

<b>Firm B</b>	Medium-sized SME Retail	<b>B</b>	1 Owner	7	B.O1
			7 Employees	3-7	B.E1 - B.E7
<b>External Consultant</b>	Consulting	<b>C</b>	1st External Consultant of Firm A	13	D.C1
			2nd External Consultant of Firm B	2	C.C2

### Data Analysis

The analytical process involved systematic coding of interview transcripts using the Gioia Methodology. In the first cycle, informant-centric terms were extracted as 1<sup>st</sup> order concepts. These were then categorized and abstracted into 2<sup>nd</sup> order themes. Finally, the themes were interpreted into aggregate theoretical dimensions aligned with the concept of affordance existence. Pattern matching [17] was conducted to validate whether the observed barriers aligned with theoretical articulation from affordance theory. The final data structure consists of two aggregate themes, Reliance on Outdated Legacy Systems and Absence of Digital Growth Mindset, each supported by multiple coded concepts and representative quotations.

### Theory Articulation

The results of analysis were synthesized into conceptual narrative that connects cognition tendencies to the non-activation of realization affordances [18]. The identified barriers are proposed as exploratory mechanisms for digitalization failure at the existence stage. These findings offer theoretical refinements to affordance realization process and provide foundation for further research in SMEs digitalization.

## RESULT AND DISCUSSION

This research explores whether affordances exist in digitalization process of medium-sized SMEs, as well as how digitalization opportunities provided by available IT artefact are recognized by key organizational actors. The analysis focuses on two variables, Reliance on Outdated Legacy Systems and Absence of a Digital Growth Mindset. These two variables indicate cognition readiness of organizations to enable affordances before recognition and realization of affordances. The findings are presented through verbatim transcription from interviews and field observations. The verbatim transcriptions are then analysed into 1<sup>st</sup> order concepts, synthesized into 1<sup>st</sup> order themes, and mapped to two variables related to affordance existence. The results are summarized in Table 2.

Table 2. Results of verbatim transcript analysis

No	Interviewee Code	Verbatim Transcription	1st Order Concepts	2nd Order Themes	Pattern Matching	Status
1	D.C2	“We had already designed the system step by step. it’s flexible, lightweight, and scalable. The problem isn’t the tools, but the change in human mindset.”	Absence of process-oriented digital thinking	Absence of Digital Growth Mindset	Affordance Existence	Not Existed
2	A.O1	“I don’t immediately trust anything digital, especially if it involves complex systems.”	Fear of digital complexity	Absence of Digital Growth Mindset	Affordance Existence	Not Existed
3	A.O2	“As long as I’m not fully convinced, I’ll stick with manual methods because that’s what I	Distrust toward digital systems	Absence of Digital Growth Mindset	Affordance Existence	Not Existed

		feel most comfortable and confident with.”				
4	A.O2	“I’m afraid that if the system has an error or wrong input, it’ll be hard to fix.”	Fear of digital complexity	Absence of Digital Growth Mindset	Affordance Existence	Not Existed
5	A.O1	“If the system has too many rules, I worry it’ll make things more confusing and slow us down.”	Fear of digital complexity	Absence of Digital Growth Mindset	Affordance Existence	Not Existed
6	A.O2	“This store isn’t ready to change everything just yet.”	Perceived unpreparedness for digitalization	Absence of Digital Growth Mindset	Affordance Existence	Not Existed
7	A.O1	“I still feel comfortable using the manual way because I’m used to it.”	Preference for comfort and familiarity with manual systems	Reliance on outdated legacy systems	Affordance Existence	Not Existed
8	A.O1	“I’m fine with this current way less hassle, no need to stress about learning new systems.”	Preference for comfort and familiarity with manual systems	Reliance on outdated legacy systems	Affordance Existence	Not Existed
9	A.O1	“Even with the consultant’s help, I still trust the system I’ve been using all this time.”	Owner’s preference for direct manual control	Reliance on outdated legacy systems	Affordance Existence	Not Existed
10	D.C2	“Mr. A*** (Owner of Firm A) believes that the best control is manual, through direct supervision, not through digital systems or data reports.”	Owner’s preference for direct manual control	Reliance on outdated legacy systems	Affordance Existence	Not Existed
11	D.C2	“He (Owner of Firm A) still feels comfortable with the current condition and believes he can control everything manually.”	Owner’s preference for direct manual control	Reliance on outdated legacy systems	Affordance Existence	Not Existed
12	A.E2	“Maybe they (the owners) are just so used to doing it this way from the beginning.”	Preference for comfort and familiarity with manual systems	Reliance on outdated legacy systems	Affordance Existence	Not Existed
13	A.O2	“It’s more practical to give instructions directly every day, instead of focusing on training that may not work immediately.”	Owner’s preference for direct manual control	Reliance on outdated legacy systems	Affordance Existence	Not Existed
14	B.O1	“In 2022 I started using POS to help manage stock and sales, but many things are still done manually. I’m still confused about what exactly needs fixing.”	Lack of awareness of digital system potential	Absence of Digital Growth Mindset	Affordance Existence	Not Existed
15	B.O1	“I wanted a more digital and automated system, so I hired a consultant. . . But I wanted everything to run all at once.”	Lack of awareness of process-based digitalization	Absence of Digital Growth Mindset	Affordance Existence	Not Existed
16	D.C1	“The Firm B owner is the type who has big ambitions to modernize the store. In the beginning, the response was positive. He even pushed to jump directly into the next	Desire for instant digitalization without process awareness	Absence of Digital Growth Mindset	Affordance Existence	Not Existed

	stages. But that's when friction started."			
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Both firms had technically implemented a Point of Sales (POS) system prior to receiving support from external consultants. However, in practice, the use of these digital tools remained limited, mostly restricted to basic features such as recording transactions and managing inventory. This condition was confirmed by one of the consultants during the initial assessment phase, *"When we first came in for the initial assessment, the conditions varied across firms. But overall, all firms had already implemented some form of digital system like a Point of Sale (POS). Mainly for recording sales transactions, inputting stock, and managing master data, although that was only in two firms. The other branch, the one still managed by the parents, only used it for stock recording."* (D.C2)

In addition, there is no one of both firms had structured and systematic financial reports before collaborating with consulting firm. This is especially critical for medium-sized SMEs with annual revenues between IDR 15 to 50 billion where financial accountability is essential for growth and sustainability [6]. As stated by another consultant, *"On the financial side, all firms, including this one, still lack digital financial reporting that could support business analysis. What they have is just a handwritten daily cash-in note, without any organized profit and loss recap."* (D.C1). These findings were also confirmed by the researcher's field observations. Across both firms, the POS features were only used for recording sales and inventory transactions. There was no evidence of integrated digital business processes.

At Firm A, the owner expressed concerns about the complexity of digitalization. As stated in the interview, *"If the system has too many rules, I worry it'll make things more confusing and slow us down."* (A.O1). This fear of digital complexity reflects greater comfort with manual oversight and traditional ways of working. In another session, the owner said, *"I still feel comfortable using the manual way because I'm used to it."* (A.O1). This verbatim statement was coded as the 1<sup>st</sup> order concept "Preference for comfort and familiarity with manual systems", representing strong belief in physical, direct control over more structured with digital systems. This concept was then synthesized into the 2<sup>nd</sup> order theme "Reliance on Outdated Legacy Systems", as it illustrates a deep attachment to outdated manual routines.

Moreover, when analyzing the owner's behavioral patterns and operational decisions, there was no awareness identification that the existing POS system could be optimized. for example, to support more efficient transactions, real-time stock monitoring, or data-driven decision-making. This is supported by statement from one of the co-owners' Firm A, *"As long as I'm not fully convinced, I'll stick with manual methods because that's what I feel most comfortable and confident with."* (A.O2). This was categorized as the 1<sup>st</sup> order concept "Distrust toward digital systems" and synthesized into the 2<sup>nd</sup> order theme "Absence of Digital Growth Mindset". It reflects fixed mindset toward change and lack of willingness to learn or growth.

The absence of digital growth mindset was also confirmed by consultant's explanation. According to them, the digitalization strategy had been carefully designed to be systematic and gradual. However, the actual barrier is found in the owners' resistance to digitalization. As one consultant stated, *"We had already designed the system step by step, it's flexible, lightweight, and scalable. The problem isn't the tools, but the change in human mindset."* (D.C2). This statement was coded as the 1<sup>st</sup> order concept "Absence of process-oriented digital thinking", which also supports the 2<sup>nd</sup> order theme "Absence of Digital Growth Mindset".

The preference for using this manual system is strongly related to the owner's belief regarding direct monitoring and control. As one consultant explained, *"Mr. A\*\*\* (Owner of Firm A) believes that the best control is manual, through direct supervision, not through*

*digital systems or data reports. He (Owner of Firm A) still feels comfortable with the current condition and believes he can control everything manually.*" (D.C2). This statement was coded as the 1<sup>st</sup> order concept "Owner's preference for direct manual control" and synthesized into the 2<sup>nd</sup> order theme "Reliance on Outdated Legacy Systems". In this case, affordance never appears cognitively because digitalization is not perceived as a growth opportunity, but rather as a threat to the stability of existing routines.

In Firm B, the findings reveal slightly different pattern, showing more dynamic perceptions of digitalization. Initially, the owner expressed high enthusiasm for implementing digital systems, driven by growing awareness of the need for change due to increasing competitive pressure. As the owner stated, *"I started comparing our store with others that were more advanced. They already use digital systems, can monitor stock, automatically generate sales reports, and manage everything remotely."* (B.O1). The owner also experienced emotional and physical fatigue from constantly overseeing operations under the manual system. As he said, *"I felt like every day I was just going in circles. Tired, but nothing was progressing. The employees were working, sure, but I still had to watch over everything."* (B.O1).

However, when asked about the POS system that had been available prior to the consultant's involvement, the owner stated, *"In 2022 I started using POS to help manage stock and sales, but many things are still done manually. I'm still confused about what exactly needs fixing."* (B.O1). This quote was categorized as the 1<sup>st</sup> order concept "Lack of awareness of the system's digital potential" and reflects the 2<sup>nd</sup> order theme "Absence of Digital Growth Mindset". It indicates the owner's initial inability to understand the full capabilities of the digital system already in place. The affordance failed to emerge because the available digital features were not seen as tools for transforming existing processes.

The document analysis of POS system usage revealed distinct patterns between Firm A and Firm B in terms of feature adoption before and after the consultant's involvement. In Firm A, out of the 86 available POS features, only 34.88% (30 features) were actively utilized. Notably, this percentage remained unchanged even after the consultant's intervention, indicating that the digitalization program had limited impact in expanding the scope of POS adoption. The stagnation reflects the owner's persistent reliance on manual processes and his reluctance to embed new digital routines into daily operations.

In contrast, Firm B displayed a different trajectory. Before the consultant's involvement, utilization was considerably lower, with only 20.93% (18 features) in active use. Following the consultant-led digitalization efforts, adoption increased to 49.43% (43 features). This progress was particularly visible in modules related to inventory management, financial reporting, and customer management, which had previously been neglected. The substantial improvement demonstrates that external consulting support was able to stimulate broader POS adoption, although the depth of usage was still mediated by the owner's willingness to translate digital tools into operational routines.

These findings underscore that while consultants can facilitate technical adoption and expand feature utilization, the effectiveness of their intervention ultimately depends on the cognitive readiness of SME owners. In Firm A, the consultant's role was largely symbolic due to entrenched manual preferences, whereas in Firm B, the same intervention contributed to a measurable expansion of POS usage.

In addition, further analysis was conducted on supporting documents related to the consultant's digitalization program. The findings show that key organizational elements, such as a formal organizational structure, digital Standard Operating Procedures (SOPs) for all roles, a forecasting system for inventory planning, and digital financial reports, had

already been developed and implemented gradually. These materials reflect a comprehensive strategy to guide system adoption in Firm B.

The findings of this research suggest that the failure of digital adoption in medium-sized retail SMEs cannot be explained merely by the lack of available technology. Instead, it stems from affordance failure that occurs across existence stages of affordance. While previous studies have identified factors influencing the success or failure of SME digitalization, they rarely examine how specific barriers emerge at each stage of the process.

The results show that digital affordances were not fully realized in any of the two retail SMEs. This was the case despite the availability of digital artifacts such as POS systems, digital SOPs, KPIs, and financial reporting tools. All of which had been systematically designed and staged for gradual implementation. These findings confirm that the mere presence of technology artifacts does not guarantee the emergence of affordances. The affordance theory framework [11], [12] becomes especially relevant in explaining this limitation, as it views affordance as a result of interaction between artifacts, users, and organizational context.

One major barrier in the affordance existence stage is Reliance on Outdated Legacy Systems. Owners in Firm A showed a strong tendency to maintain manual methods such as direct supervision, using the POS system only for basic stock or sales input, making decisions based on intuition, manual bookkeeping, and verbal reporting. As a result, they failed to recognize the presence of digital systems as relevant or valuable. Restrepo-Morales et al. [5] stated that SMEs often face competence constraints in accessing digital providers, tools, and skilled human resources, which further reinforces their reliance on outdated systems and obstructs digital transformation. This aligns with Kallmuenzer et al. [13], who argued that SMEs tend to avoid innovation as long as their existing systems are still usable, which perpetuates continued reliance on legacy technologies.

The second barrier in the existence stage is Absence of Digital Growth Mindset. Although both firms initially expressed willingness to change, they eventually resisted digitalization due to a lack of understanding regarding the purpose and potential of digital systems. Liu and Kamioka [14] emphasize that digital growth mindset positively influences an organization's confidence in effectively using digital tools. However, in owner-driven SME contexts, this mindset often fails to develop due to the absence of system awareness and digital capability enhancement [8]. The situation is worsened by lack of shared understanding and collective support to sustain digital learning across the organization [8]. As a result, all owners ultimately reverted to manual methods, viewing the consultant-provided systems as too complex and difficult to apply.

These findings are also supported by Kozanoglu and Abedin [19], who highlight the importance of digital literacy within organizations. It is not enough for organizations to know how to use digital tools, they must also understand why these tools are essential for operational transformation. The lack of digital awareness and system potential resulted in affordances never emerging, despite the presence of technological artifacts. This also demonstrates that apparent readiness or intention does not always reflect actual capability or digital literacy. As Shirish et al. [8] argue, successful digital transformation requires SME owners to develop a technology mindset that enables them to navigate digital change more effectively. Digitalization should therefore be understood not merely as a tool-based upgrade, but as a strategic transformation process [15]. Therefore, the failure of digitalization in these SMEs is not a technological gap, but a gap in digital mindset and structural detachment from change readiness. By identifying these two barriers within the affordance existence stage, this research provides early indicators that can predict the existence of digitalization and offers refined lens for affordance theory in SME contexts.

## CONCLUSION

This research aimed to examine how affordance existence fails to emerge in medium-sized retail SMEs despite the availability of digital systems. Using a multiple case study approach and Gioia Methodology, the study explored two key cognition and behavioural barriers, reliance on outdated legacy systems and absence of digital growth mindset. Even though both firms had implemented POS systems, their usage remained limited to basic transactions, with no activation of modules related to financial, analytical, or process integration functions. The findings reveal that organizational comfort with legacy systems and the owner's tendency to centralize control hinder the internalization of new digital tools. In parallel, the ambition to digitalize without proper understanding of digital system functions creates mismatch between intention and capability. These two barriers indicate that digitalization failure is not always caused by external limitations, but rather by internal readiness and perception gaps, particularly at the early stage of affordance realization.

### Theoretical Contributions

This research contributes to extend affordance theory by providing an in-depth examination of failure of affordance existence, a stage that has received limited attention in prior literature. By identifying two specific constructs; Reliance on outdated legacy systems and Absence of a digital growth mindset. This research refines theoretical understanding of affordance constraints as function of cognition misalignment rather than merely the absence of technology. The research extends the conceptual framework of Pérez and Vitari [12] by emphasizing that cognition barriers can completely hinder the emergence of affordances, even though digital artifacts are available.

### Practical Implications

For SME owners, the findings highlight the importance of establishing digital growth mindset before implementing any major system changes. Owners must recognize that digitalization is a process-oriented path, not a quick and easy process. For consultants, the research findings suggest that early intervention should not only focus on system implementation, but also on guiding on digital mindset requirements and aligning perceptions of digital capabilities. Policymakers should design digital literacy programs that involve both system knowledge and mindset improvement, especially in SME environments managed by owners where decision-making is highly centralized.

### Limitations and Future Research

This study has several limitations that should be acknowledged. First, the research was conducted on two case studies of medium-sized retail SMEs operating within the same sector and geographical area. While these cases provide rich insights into cognitive and behavioural barriers in digitalization, the findings may not be generalizable to other sectors or regions with different organizational cultures, digital maturity, or regulatory contexts. Second, the research focuses exclusively on the affordance existence stage, leaving the perception, actualization, and effect stages unexplored. Although this narrow scope allows for deeper investigation, future studies should examine how early-stage failures influence downstream stages in the affordance realization process. Future research is encouraged to expand the theoretical framework by testing the interplay between affordance existence and perception stages, especially in cases where partial adoption occurs. Comparative studies across sectors or countries would also provide a broader perspective on how cultural or institutional environments mediate cognitive barriers. Additionally, studies that incorporate intervention-

based designs, such as mindset training or co-design workshops, may offer practical pathways to overcome affordance failures in SME digitalization.

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