



Beyond Digitalisation: A Relational-Incremental Microfoundation of Dynamic Capabilities in Traditional-Market MSMEs

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Abstract. This study examines how handicraft micro, small, and medium-sized enterprises (MSMEs) operating in a traditional market develop dynamic capabilities under conditions of resource constraint, relational embeddedness, and uneven digitalisation. Using a qualitative case-study design, data were collected from ten owners and managers of handicraft MSMEs in Beringharjo Market, Yogyakarta, through semi-structured interviews, non-participant observations, and business documentation. Data were analysed using reflexive thematic analysis, cross-case comparison, and abductive reasoning, with sensing, seizing, and transforming used as sensitising concepts rather than predetermined coding categories. Seven interrelated themes emerged: relational market sensing, calculated experimentation, incremental resource reconfiguration, relational capability as strategic capital, selective digital adaptation, heterogeneous pathways to competitiveness, and learning through failure. The findings reveal a distinctive adaptive mechanism in which market changes are sensed primarily through customer and business relationships, opportunities are seized through low-risk experimentation, and resources are transformed through cumulative micro-adjustments rather than radical restructuring. Digital technologies complement these processes by extending relational reach and information flows rather than replacing established market relationships. The study develops a relational-incremental microfoundation of dynamic capabilities, demonstrating how strategically meaningful adaptation can emerge from informal, resource-conscious, and socially embedded practices. These findings extend dynamic capability theory into the context of traditional-market microenterprises and challenge assumptions that effective SME adaptation necessarily depends on extensive formalisation or comprehensive digital transformation.

Keywords: Calculated Experimentation; Dynamic Capabilities; Handicraft MSMEs; Relational Market Sensing; Traditional Markets.

1. INTRODUCTION

MSMEs operate in increasingly dynamic environments characterised by changing consumer preferences, digitalisation, intensified competition, cost pressures, and faster access to market information. These conditions heighten the importance of adaptability because small-scale firms commonly face constraints in capital, technology, labour, and formal information systems. Competitiveness therefore depends not only on the resources a firm possesses but also on its ability to recognise environmental change, respond to emerging opportunities, learn from outcomes, and reconfigure resources accordingly. Recent studies show that SME adaptability and resilience develop through learning practices, process changes, agility, collaboration, and dynamic resource management (Quansah et al., 2022; Khurana et al., 2022; Fredrich et al., 2022; Troise et al., 2022; Lu et al., 2023; Saeedikiya et al., 2024).

This issue is particularly relevant to handicraft MSMEs because their competitiveness depends on more than functionality and price. Handicraft products are also evaluated through design, craftsmanship, aesthetics, authenticity, cultural value, and connections with artisans.

Shafi et al. (2025) show that technological innovation in handicraft enterprises is shaped by artistic vision, resource constraints, competitive pressure, and multiple sources of innovation. In Indonesia, Harsanto et al. (2026) demonstrate that craft-based SMEs can adopt digitalisation while preserving authenticity and cultural value, whereas Hussein et al. (2026) show that digital marketing capabilities in batik SMEs need to be translated through innovation and agility to support sustainable growth. These characteristics make handicraft MSMEs an important context for examining how firms with limited resources adapt to environmental change while preserving distinctive market and cultural attributes.

Despite these advances, three important gaps remain. First, much of the SME literature examines digitalisation, innovation, resilience, or competitive advantage as organisational outcomes, while giving less attention to the micro-level processes through which resource-constrained owner-managers recognise market change, commit to emerging opportunities, and reconfigure resources in everyday practice. This gap is particularly important in microenterprises, where strategic and operational decisions are closely intertwined, and adaptation is often enacted directly by owners or managers. Second, although existing research recognises the importance of networks for knowledge acquisition and resource access, less is known about how business relationships themselves contribute to the process of recognising market change. In traditional-market environments, interactions with customers, suppliers, artisans, resellers, and neighbouring traders may provide important information, feedback, referrals, and learning opportunities. However, the role of these socially embedded relationships in shaping the adaptive processes of microenterprises remains insufficiently explained.

Third, existing studies often associate organisational transformation with digital transformation, major restructuring, or business-model renewal. Such interpretations may not fully capture the experience of microenterprises, where limited resource slack makes radical transformation costly and risky. In these firms, strategically meaningful adaptation may instead emerge through cumulative adjustments to products, inventory, suppliers, working capital, customer channels, packaging, and selling practices. This suggests the need for greater attention to how repeated small-scale adjustments can collectively generate strategic adaptation (Saeedikiya et al., 2024; Yao et al., 2026). Addressing these gaps, this study asks: How do handicraft MSMEs operating in a traditional market develop and enact dynamic capabilities to adapt to environmental change and sustain competitiveness? The study focuses on the micro-level processes through which adaptation occurs under conditions of resource constraint, relational embeddedness, and uneven digitalisation.

This study makes three interconnected contributions. First, it develops the concept of relational market sensing, in which socially embedded business relationships function as an informal source of market intelligence. Second, it introduces calculated experimentation as a micro-level mechanism through which resource-constrained firms validate opportunities before making larger commitments. Third, it conceptualises incremental resource reconfiguration as a form of transformation that emerges through cumulative rather than radical resource adjustments. Together, these mechanisms form a relational-incremental microfoundation of dynamic capabilities. This perspective also positions digitalisation as an enabling and complementary capability whose strategic value depends on its integration with relationships, experimentation, learning, and resource flexibility rather than as an independent pathway to competitiveness.

2. THEORETICAL BACKGROUND

Dynamic Capability Theory

Dynamic capability theory provides a useful lens for explaining how firms adapt to environmental change through the processes of sensing, seizing, and transforming. Sensing refers to the ability to recognise changes, emerging opportunities, and potential threats in the environment; seizing concerns the mobilisation of resources and decisions needed to act on those opportunities; and transforming involves the reconfiguration of organisational resources and practices to maintain strategic alignment with changing conditions. In smaller firms, however, these processes are often enacted without specialised planning units or formal strategic systems. Instead, they emerge through owner-manager decisions, customer interactions, supplier relationships, and recurrent responses to market change.

Engelmann (2024) shows that sensing, seizing, and transforming in SMEs can develop as performative practices embedded in everyday action. This perspective is particularly relevant to microenterprises, where strategic and operational activities are closely intertwined. Decisions that may initially appear operational—such as changing products, reducing slow-moving inventory, adjusting purchasing patterns, or switching suppliers—can produce strategic consequences when they are repeatedly used to realign the firm with changing market conditions. Dynamic capabilities in small firms should therefore not be understood solely through formal routines or large-scale strategic initiatives, but also through recurring practices that enable firms to recognise change, commit resources, learn from outcomes, and adjust their resource base over time.

Microfoundations of Dynamic Capabilities in Microenterprises

A microfoundational interpretation of dynamic capabilities is particularly relevant to microenterprises because the boundary between individual managerial action and organisational capability is comparatively thin. In owner-managed firms, strategic decisions are often concentrated in the owner or a small managerial team, making individual judgement, experience, relationships, and learning central to organisational adaptation. Sensing may occur through direct interactions with customers and other market actors, seizing through immediate resource-allocation decisions, and transforming through changes implemented directly by owners or managers.

Consequently, dynamic capabilities in microenterprises may be less visible as formal organisational routines and more visible as recurrent patterns of managerial decision-making and action. Their strategic relevance depends not primarily on the degree of formalisation, but on whether such practices systematically enable the firm to recognise environmental change, respond to emerging opportunities, learn from outcomes, and reconfigure resources. This distinction is important because conventional interpretations of dynamic capabilities often emphasise formal processes and structured organisational routines that may be less applicable to resource-constrained microenterprises.

A microfoundational perspective therefore directs analytical attention towards the concrete mechanisms through which dynamic capabilities are enacted. Rather than treating sensing, seizing, and transforming as abstract organisational properties, this perspective examines how they emerge from day-to-day decisions, interactions, experimentation, learning, and resource adjustments. Such an approach is especially appropriate for traditional-market MSMEs, where strategic adaptation often occurs incrementally and informally within routine business practices.

Relational Embeddedness and Dynamic Capabilities

Resource limitations can increase the dependence of SMEs on external relationships for knowledge, resources, market information, and adaptive support. Soluk et al. (2023) show that business networks help SMEs access knowledge and support that can compensate for internal limitations, while Li and Wang (2026) demonstrate that embeddedness in digital technology networks can influence SME growth through dynamic capabilities. Collaborative intensity can likewise shape the growth effects of dynamic capabilities (Fredrich et al., 2022). These findings suggest that networks are not merely supplementary resources but can form an important part of the adaptive architecture of small firms.

In traditional-market environments, relationships with customers, suppliers, artisans, resellers, and neighbouring traders can perform similar functions by providing information, flexibility, referrals, feedback, and learning opportunities. Such interactions may constitute an informal and decentralised form of market intelligence, particularly in firms that lack formal market-research systems or specialised analytical functions. These relationships can therefore partially substitute for formal information systems by enabling firms to detect shifts in customer preferences, product demand, price sensitivity, supplier conditions, and competitive behaviour.

More importantly, relational embeddedness may not operate merely as an external support mechanism but may become an endogenous component of the sensing process itself. In this sense, relationships do not simply provide resources after an opportunity has been identified; they can actively shape how market changes are recognised and interpreted. This perspective provides a theoretical basis for understanding relational market sensing, whereby socially embedded business relationships function as an informal market-intelligence infrastructure. Understanding this mechanism can extend dynamic capability theory beyond organisational settings characterised by structured information systems, formal market research, or specialised managerial functions.

Digitalisation and Dynamic Capabilities in SMEs

Digitalisation expands firms' capacity for communication, transactions, market reach, and information access, but its benefits do not arise automatically. Digitalisation dynamics differ according to organisational context and technological configuration (Arranz et al., 2023), while Radicic and Petković (2023) show that its innovation effects vary according to firm size and internal capabilities. Digital marketing can influence SME performance, but its strategic value depends on how digital activities are integrated into the wider business system (Wu et al., 2024). Managerial capabilities also shape the value generated from digital technologies. Zahoor et al. (2023) emphasise the importance of managerial digital literacy, while Saputra et al. (2024) show that dynamic capabilities support the relationship between digitalisation and competitive advantage in Indonesian SMEs. Bibliometric and empirical studies similarly place organisational capabilities and business-model innovation at the centre of successful digital transformation (Marino-Romero et al., 2024; Merín-Rodríguez et al., 2024; Jie et al., 2025). These findings indicate that technology alone does not constitute a dynamic capability; its strategic value depends on how effectively it is combined with managerial judgement, organisational resources, relationships, and adaptive processes.

Digital transformation is therefore neither linear nor uniform. Khurana et al. (2022) show that SME resilience during crises emerges through interactions among capabilities at individual, organisational, and ecosystem levels. Yao et al. (2026) further demonstrate that digital transformation in emerging-market SMEs can develop through cyclical phases requiring different configurations of resources and capabilities. These findings challenge the assumption that a higher degree of digital adoption should automatically be equated with stronger competitiveness. What matters is the strategic fit among technology, customers, internal capabilities, relationships, and the business model. For resource-constrained microenterprises, digitalisation may therefore function more effectively as an enabling and complementary capability rather than as an independent pathway to competitiveness. Digital tools can extend market reach, facilitate communication, improve information flows, and support transactions, but their strategic contribution depends on how they complement existing relationships, experimentation, learning, and resource flexibility. This perspective provides a theoretical basis for understanding selective digital adaptation, in which firms adopt digital technologies according to their perceived relevance, affordability, and compatibility with established business practices rather than pursuing comprehensive digital transformation.

Incremental Transformation in Resource-Constrained Microenterprises

The transforming dimension of dynamic capabilities is often associated with major organisational restructuring, comprehensive digital transformation, or business-model renewal. Such interpretations, however, may inadequately represent microenterprises whose limited resource slack makes radical transformation costly, risky, and difficult to sustain. In these firms, strategically meaningful transformation may instead emerge through smaller and cumulative adjustments that gradually realign resources with changing market conditions. These adjustments may include changes to product assortments, inventory levels, suppliers, working capital allocation, customer channels, packaging, pricing, and selling practices. Although each individual adjustment may appear minor, repeated micro-level changes can collectively produce meaningful strategic reconfiguration. Transformation in microenterprises should therefore not be evaluated solely by the magnitude of a single organisational change, but also by the cumulative strategic consequences of recurring resource adjustments.

Theoretical attention consequently needs to shift from the magnitude of individual changes towards the strategic consequences of repeated micro-reconfigurations (Saeedikiya et al., 2024; Yao et al., 2026). This perspective provides a conceptual foundation for incremental resource reconfiguration, whereby transformation occurs through cumulative rather than radical adjustments to resources and practices. Such reconfiguration is particularly relevant to

resource-constrained firms because it allows adaptation to occur while limiting financial exposure and preserving operational continuity. Taken together, these theoretical perspectives suggest that dynamic capabilities in traditional-market microenterprises may develop through a distinctive relational and incremental logic. Sensing can be grounded in socially embedded relationships, seizing can occur through selective and low-risk commitments, and transforming can emerge through cumulative resource reconfiguration. Digitalisation can complement these processes by extending communication, information flows, and market reach rather than replacing established relational mechanisms. This theoretical configuration provides the foundation for examining how relational market sensing, calculated experimentation, incremental resource reconfiguration, and selective digital adaptation collectively constitute a relational-incremental microfoundation of dynamic capabilities in handicraft MSMEs.

3. RESEARCH METHODS

Research Design and Case Context

This study adopted an exploratory qualitative case-study design to investigate how dynamic capabilities are enacted through everyday strategic practices among handicraft MSMEs in Beringharjo Market, Yogyakarta. A qualitative design was appropriate because the study sought to explain processes, interpretations, decision sequences, and mechanisms rather than estimate causal relationships between predetermined variables. The case-study approach further enabled these processes to be examined within their naturally occurring commercial and relational context, where face-to-face exchange, supplier relationships, craft production networks, and digital practices coexist (Mtisi, 2022).

Beringharjo Market was purposively selected as an information-rich setting in which traditional trading practices interact with changing consumer preferences, tourism markets, digital communication, social media, and marketplace platforms. The setting therefore provides a theoretically relevant context for examining how resource-constrained businesses combine established relational practices with emerging digital opportunities. The unit of analysis was the strategic adaptation process of handicraft MSMEs, rather than the individual informant. Owners and managers constituted the units of observation because they were directly involved in decisions concerning products, customers, suppliers, inventory, pricing, working capital, business networks, and marketing channels. This distinction enabled interview accounts to be interpreted as evidence of organisational adaptation processes rather than merely individual perceptions.

Informant Selection and Data Adequacy

Informants were purposively selected based on their ability to provide information-rich accounts of strategic adaptation. Participants were required to be owners or managers of handicraft MSMEs in Beringharjo Market, directly involved in strategic and operational decision-making, and knowledgeable about changes in products, customers, suppliers, competition, inventory, and marketing. Ten principal informants participated. Sample adequacy was assessed through the recurrence of information and thematic depth rather than statistical representativeness. As coding and cross-case comparison progressed, additional interviews produced limited new substantive insights, indicating sufficient thematic depth for a relatively homogeneous qualitative sample (Hennink & Kaiser, 2022). The study therefore supports analytical transferability rather than statistical generalisation.

Data Collection

Data were collected during fieldwork conducted in August 2026. The principal source of evidence was semi-structured, in-depth interviews with owners and managers. Interviews lasted approximately 60 minutes and followed an interview guide containing 25 core questions addressing environmental change, customer preferences, emerging product trends, competition, opportunity recognition, product selection, inventory and resource decisions, supplier relationships, digital technology use, successful and unsuccessful adaptations, perceived constraints, and future strategic plans. Rather than treating the interview guide as a rigid questionnaire, probing questions were used to reconstruct adaptation processes. Participants were asked to explain what changed, how they first recognised the change, what decision followed, which resources were committed, what outcome occurred, and what they subsequently learned. This process-oriented questioning was important because dynamic capabilities are reflected not simply in stated strategies but in sequences connecting signals, decisions, actions, outcomes, and subsequent resource adjustments.

Interview evidence was complemented with non-participant observation of product assortment, stall displays, seller-buyer interactions, bargaining practices, use of digital devices, promotional activities, payment mechanisms, and competitive conditions between stalls. Documentary materials, including photographs of stalls and products, catalogues, promotional content, and relevant digital business accounts, were used as additional contextual evidence. Combining these sources enabled interview narratives to be interpreted alongside observable business practices and material evidence.

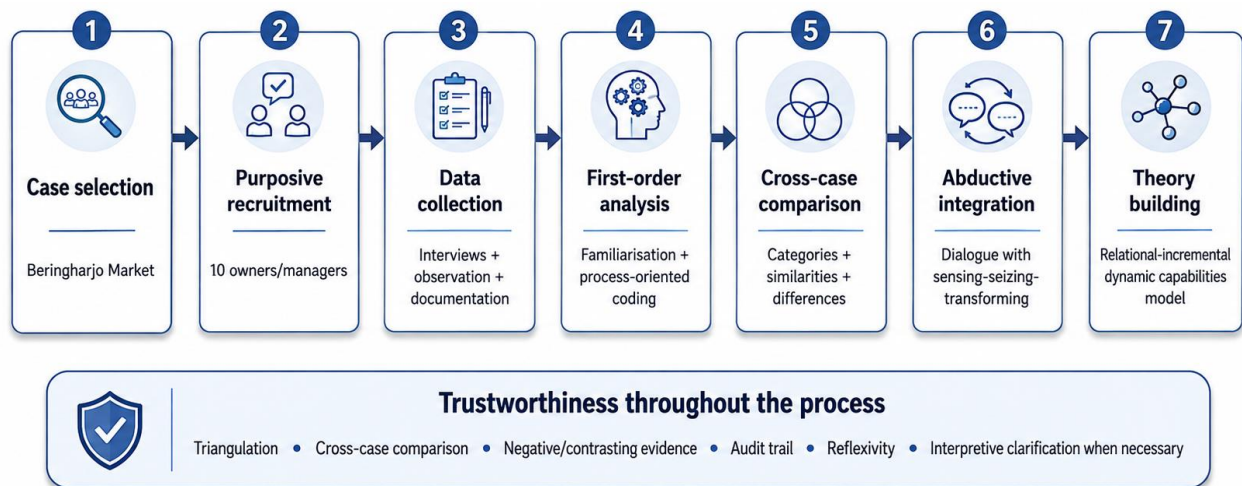


Figure 1. Research Design and Analytical Process

Data Analysis

Data analysis combined reflexive thematic analysis, cross-case comparison, and abductive reasoning. Analysis proceeded iteratively rather than as a strictly linear sequence. First, interview transcripts and field notes were read repeatedly to develop familiarity with each case and to identify statements concerning environmental signals, decisions, resource commitments, adaptations, outcomes, and learning. Second, initial coding remained close to participants' accounts and was deliberately descriptive and process-oriented. Examples included repeated customer requests, supplier signals about emerging trends, testing a small quantity, reducing slow-moving stock, changing suppliers, using WhatsApp for repeat customers, and recalculating custom-order costs. These codes were not initially forced into the sensing-seizing-transforming framework.

Third, related codes were compared and clustered into higher-order categories. Customer requests, supplier information, artisan knowledge, and peer-trader information, for example, converged around the broader pattern of market information acquired through relationships. Codes concerning small initial purchases, trial selling, customer-response evaluation, and staged commitment converged around low-risk opportunity testing. Fourth, categories were compared across cases to determine whether they represented isolated practices or recurrent adaptation mechanisms. Particular attention was paid to similarities, differences, and negative or contrasting cases. This procedure enabled the analysis to distinguish common mechanisms from firm-specific manifestations.

Fifth, abductive analysis moved iteratively between emerging empirical patterns and dynamic capability theory. Sensing, seizing, and transforming were used as sensitising concepts rather than predetermined containers. The empirical material was therefore allowed

to refine the theoretical framework, consistent with the principles of reflexive thematic analysis (Byrne, 2022). This process resulted in three central concepts: relational market sensing, calculated experimentation, and incremental resource reconfiguration. Finally, relationships among the themes were examined to construct an integrative explanatory model. Relational capability emerged as an enabling condition across the three stages, learning through failure as a reinforcing mechanism, and digitalisation as a complementary capability. The resulting relational-incremental model therefore reflects an empirically derived configuration subsequently interpreted through dynamic capability theory.

Table 1. Illustrative data structure

First-order evidence	Second-order category	Aggregate theme	Dynamic-capability function
Repeated customer requests; supplier trend information; artisan feedback	Relationship-based market signals	Relational market sensing	Sensing
Trial purchases; small initial quantities; observing customer response	Staged opportunity validation	Calculated experimentation	Seizing
Reducing slow stock; changing suppliers; adjusting product mix	Cumulative resource adjustment	Incremental resource reconfiguration	Transforming
Repeat customers; supplier flexibility; trader referrals	Network-enabled resource access	Relational capability as strategic capital	Enabling mechanism
WhatsApp for existing customers; selective marketplace use	Fit-based technology adoption	Selective digital adaptation	Complementary mechanism
Revising purchasing rules after overstock; recalculating custom-order costs.	Experience-based rule revision	Learning through failure	Reinforcing mechanism

Note: The table provides illustrative examples of the analytical progression from first-order empirical evidence to second-order categories and aggregate themes. It is not intended to represent frequency counts.

Trustworthiness, Reflexivity, and Ethics

Several procedures were used to strengthen the credibility, dependability, confirmability, and contextual transferability of the findings. First, methodological triangulation was achieved by comparing interview accounts with field observations and available business documentation. Second, cross-case analysis was used to assess whether emerging themes were supported across different business profiles rather than being driven by a single case. Third, attention was given to negative or contrasting evidence that did not

immediately conform to the dominant interpretation; such cases were used to refine theme boundaries rather than being excluded from the analysis.

An audit trail was maintained across data collection and analysis to document the development of the interpretation. Researchers also used reflexive notes to identify initial assumptions and potential interpretive biases. When necessary, interpretations were clarified with informants, while cases that differed from the dominant pattern were examined to refine rather than simply confirm emerging themes (González-Salgado et al., 2024). Ethical principles were maintained through voluntary participation, explanation of the study purpose, consent before interviews and recordings, the right to decline questions, confidentiality, and anonymisation through the codes I1-I10.

Results

Cross-case analysis revealed that strategic adaptation among handicraft MSMEs was heterogeneous in its visible form but structured around a recurring set of underlying mechanisms. Differences in business experience, product characteristics, customer segments, financial capacity, network configuration, and digital engagement produced different adaptation practices across cases. Nevertheless, comparison of the decision processes reported by informants revealed seven interrelated themes: relational market sensing, calculated experimentation, incremental resource reconfiguration, relational capability as strategic capital, selective digital adaptation, heterogeneous pathways to competitiveness, and learning through failure.

The first three themes form the core dynamic-capability sequence identified in the study: relational sensing -> calculated seizing -> incremental transforming. The remaining themes explain the conditions under which this sequence operates. Relational capability provides information and resource access across stages; digitalisation selectively extends rather than substitutes relational processes; heterogeneous strategic configurations produce different routes to competitiveness; and learning from unsuccessful decisions modifies subsequent sensing, seizing, and transforming practices. The findings are presented below using representative evidence while retaining cross-case differences.

Table 2. Characteristics of research informants

Code	Role	Years in business	Main product category	Digital channels used	Dominant adaptation pattern
I1	Owner	20	Leather handicrafts	WhatsApp; Instagram; TikTok	Market-adaptive
I2	Manager	25	Bamboo handicrafts	WhatsApp; Instagram; marketplace	Conservative-adaptive
I3	Owner	10	Rattan craft	WhatsApp	Digital-adaptive
I4	Owner	11	Handicraft products	WhatsApp; Instagram; Facebook	Differentiation/artisan-network
I5	Manager	5	Dried-flower handicrafts	WhatsApp; Instagram	Price/tourism adaptive
I6	Manager	5	Woven handicrafts	WhatsApp; TikTok	Relational-adaptive
I7	Owner	7	Patchwork handicrafts	WhatsApp; Instagram; TikTok	Efficiency-adaptive
I8	Owner	8	Leather handicrafts	WhatsApp; marketplace; TikTok	Collaborative/network
I9	Owner	14	Wood craft	WhatsApp	Customer-driven customisation
I10	Owner	2	Natural-material handicrafts	WhatsApp; Instagram; TikTok; Facebook; marketplace	Branding/customer experience

Source: Authors' field data (2026)

Relational Market Sensing

Market sensing among the participating MSMEs was primarily embedded in relationships rather than formal research systems. Owners and managers monitored repeated customer requests, supplier information, artisan knowledge, reseller feedback, and conversations with neighbouring traders to identify changes in product preferences, materials, prices, and competitive conditions. These interactions created a continuous stream of low-cost market signals. Importantly, participants rarely relied on a single source. Market signals were typically interpreted through relational comparison. Information received from suppliers or artisans was compared with customer requests, while observations of competing stalls were assessed against actual purchasing behaviour. This process reduced the risk of reacting to isolated or temporary signals.

This mechanism is conceptualised as relational market sensing: the capacity to identify and interpret market change through recurrent interaction within a firm's social and commercial network. Rather than compensating imperfectly for the absence of formal market research, these relationships constituted an alternative market-intelligence infrastructure adapted to the resource and organisational conditions of microenterprise. This interpretation extends prior

work on adaptive practices, networks, and performative dynamic capabilities (Quansah et al., 2022; Soluk et al., 2023; Engelmann, 2024).

“I usually pay attention to items that customers often ask about. If several customers start looking for the same model or material, I take it as a sign that market tastes are changing.” (I1)

“Apart from customers, I often get information from suppliers and craftsmen about models or materials that are starting to be sought-after. I compare that information with buyers’ requests before deciding to add products.” (I4)

Together, these accounts demonstrate that sensing was embedded in the social architecture of the market. Relationships simultaneously provided information, interpretation, and rapid feedback, allowing entrepreneurs to detect commercially relevant change without maintaining specialised analytical functions.

Calculated Experimentation

Recognition of an opportunity did not automatically result in full-scale commitment. Instead, entrepreneurs typically reduced uncertainty through small and reversible experiments. New models were initially purchased in limited quantities, displayed to customers, and evaluated through actual sales or inquiries. Resource commitment was expanded only when market response provided sufficient confirmation.

We conceptualise this process as calculated experimentation. The term captures a form of seizing in which opportunity pursuit is disciplined by resource scarcity. Limited working capital encourages entrepreneurs to minimise irreversible commitments, obtain rapid market feedback, and preserve flexibility when uncertainty remains high.

“If there is a new model, I don’t take a lot right away. Usually I try a few first. If customers are interested and sell quickly, then I increase the quantity.” (I3)

“I prefer to try a little first rather than buy a lot right away. If it turns out that there is less demand, capital will not be held in goods for too long.” (I7)

These practices indicate that resource constraint does not merely restrict entrepreneurial action. Under certain conditions, it also structures a disciplined form of opportunity validation. Seizing therefore occurs through staged commitment: signal -> small-scale trial -> market feedback -> escalation, modification, or withdrawal.

Incremental Resource Reconfiguration

Transformation was rarely experienced by participants as a single radical organisational change. Instead, firms repeatedly adjusted product assortment, stock levels, supplier combinations, working-capital allocation, custom-order practices, displays, packaging,

customer communication, and the balance between offline and digital selling. Each change was modest in isolation, but their cumulative effect altered how the business deployed its resources and responded to customers.

We define this mechanism as incremental resource reconfiguration. Its strategic relevance lies not in the magnitude of any individual adjustment but in the cumulative capacity of recurrent micro-changes to maintain alignment between resources and a changing market environment. The pattern is consistent with process-oriented interpretations of SME dynamic capabilities (Engelmann, 2024; Saeedikiya et al., 2024).

“I used to provide more items that were used for selling. Now I reduce the ones that sell slowly and add models that customers are looking for more often. If there is a special request, I also start accepting orders according to the buyer’s wishes.” (I9)

“At first, sales only relied on buyers coming to the market. Now I use WhatsApp and Instagram, improve the appearance of the product and packaging, and then see which one is most effective in attracting customers.” (I10)

The evidence therefore suggests that transforming in microenterprise settings may be better understood as cumulative strategic adjustment than as episodic restructuring. Ordinary operational changes acquire strategic significance when they repeatedly alter resource deployment in response to environmental feedback.

Relational Capability as an Enabling Strategic Resource

Relationships did more than provide information during sensing. They also enabled opportunity capture and resource reconfiguration. Customer relationships supported repeat purchases and product feedback; supplier and artisan relationships increased flexibility in sourcing; reseller relationships extended market access; and relationships with fellow traders provided referrals, product information, and temporary access to items that an individual firm did not hold in stock. This finding reinforces prior evidence on the role of networks in SME capability development (Soluk et al., 2023; Li & Wang, 2026).

“Existing customers are very helpful. Sometimes they tell me what products they are looking for, then if it suits them, they order again via WhatsApp. So the relationship with customers is not only to sell, but also to help me know the needs of the market.” (I6)

“If the goods the buyer is looking for are not in my place, sometimes I ask other traders or suppliers. We give each other information. That kind of relationship helps because I don’t have to provide all the goods myself.” (I8)

Relational capability therefore operated as a cross-cutting enabling capability rather than a separate stage of adaptation. It connected sensing, seizing, and transforming by reducing information gaps, expanding accessible resources, and increasing strategic flexibility. For microenterprises with limited internal resource slack, competitive capacity consequently depended not only on what the firm owned but also on what it could access, learn, and mobilise through relationships.

Selective Digital Adaptation

Digital adoption varied substantially across cases. Some firms actively combined Instagram, TikTok, marketplaces, and WhatsApp, whereas others relied predominantly on WhatsApp or maintained mainly offline selling practices. The differences did not simply reflect a linear progression from 'less digital' to 'more digital'. Entrepreneurs selected digital tools according to customer characteristics, perceived usability, expected commercial value, managerial capacity, and the effort required to maintain multiple channels.

WhatsApp was particularly important because it extended relationships initially established through face-to-face transactions. Digital technology therefore frequently reinforced an existing relational architecture rather than creating an entirely separate commercial system. These findings are consistent with research showing that digitalisation in SMEs depends on dynamic capabilities, innovation, agility, authenticity, and context (Saputra et al., 2024; Shafi et al., 2025; Harsanto et al., 2026; Hussein et al., 2026).

“I use Instagram and marketplaces to introduce products, but WhatsApp is still most often used to communicate with customers who have already purchased. If they want to message again, they usually contact them directly via WhatsApp.” (I10)

“I don’t use all social media. The most important thing for me is WhatsApp because it’s easier to send photos of goods and serve customers. If there are too many apps, I also find it difficult to manage them.” (I3)

These findings create an important distinction between digital adoption and digital strategic value. Adoption indicates whether a technology is used; strategic value depends on whether that technology improves information flows, customer relationships, opportunity capture, or resource flexibility. Digitalisation should therefore be understood as a complementary capability embedded in the broader adaptation process rather than as an autonomous determinant of competitiveness.

Heterogeneous Pathways to Competitiveness

Cross-case comparison showed that firms did not translate dynamic capabilities into a uniform competitive strategy. Some businesses prioritised differentiation and product quality; others emphasised rapid inventory turnover, flexible pricing, customisation, relationship-based selling, branding, or selective digital engagement. These differences reflected variation in resources, customer profiles, product characteristics, network positions, and managerial preferences.

“If the price competition continues, it is difficult because there are always people who sell cheaper. I prefer to maintain quality and make different products so that customers have a reason to buy at my place.” (I4)

“For me, the important thing is that the goods move quickly. I do not have to stock wide varieties if they remain unsold for a long time. I prefer products with clear demand so that the capital can keep circulating.” (I7)

The findings therefore indicate heterogeneous pathways to competitiveness. Dynamic capabilities do not prescribe a single optimal strategy; instead, they enable firms to maintain or restore strategic fit as environmental demands change. Competitiveness consequently emerges from contextually appropriate configurations of resources, relationships, learning, and market response rather than from the universal adoption of any individual practice.

Learning through Failure

Adaptation was shaped not only by successful decisions but also by negative outcomes. Participants described overstocking fashionable products, dependence on single suppliers, declining demand for trend-driven items, and inaccurate estimation of custom-order costs. Importantly, these experiences resulted in changes to subsequent decision rules, consistent with the role of continuous learning in strategic adaptation (Quansah et al., 2022).

“I used to take quite a lot of things because they were trending, but it turned out that it wasn’t long before the demand dropped. Since then I’ve been more careful and usually take a little bit first to see the buyer’s response.” (I7)

“There was once a special order that seemed to be profitable, but after recalculating, the cost of materials and time was too great. After that, I always calculate the cost and processing time in more detail before accepting a custom order.” (I9)

These accounts reveal a recurring sequence: decision -> outcome -> reflection -> revised decision rule -> behavioural change. Learning therefore did not remain at the level of retrospective interpretation; it became embedded in subsequent sensing, seizing, and transforming practices. Failure strengthened dynamic capability when experience was

converted into modified decision heuristics, such as purchasing smaller initial quantities, diversifying suppliers, or calculating custom-order costs more carefully.

Learning through failure thus functions as a reinforcing mechanism within the relational-incremental model. Over time, accumulated experience improves the quality of opportunity interpretation and resource commitment, helping entrepreneurs adapt without requiring highly formalised organisational learning systems.

An Integrative Relational-Incremental Dynamic Capabilities Model

Taken together, the findings suggest that strategic adaptation among traditional-market microenterprises follows a recurrent but non-linear mechanism: relational market signals -> relational sensing -> calculated experimentation -> market feedback -> incremental resource reconfiguration -> learning -> revised sensing and decision rules.

Relationships provide the information and resource access that enable this sequence, while digital technologies selectively expand its reach and speed. The process is iterative rather than sequential in a strict temporal sense. Feedback generated during experimentation can reshape sensing, while resource reconfiguration can create new customer interactions and information sources.

The resulting relational-incremental dynamic capabilities model therefore comprises three core mechanisms and three supporting mechanisms. Relational market sensing, calculated experimentation, and incremental resource reconfiguration represent the core sensing-seizing-transforming process. Relational capability operates as an enabling infrastructure, learning through failure as a reinforcing feedback mechanism, and selective digital adaptation as a complementary accelerator.

The model explains how strategically consequential adaptation can emerge in organisations with limited formal structures, limited resource slack, and uneven digital maturity. Rather than treating these characteristics solely as capability deficits, the model demonstrates how microenterprises develop alternative adaptive mechanisms suited to their organisational and market conditions.

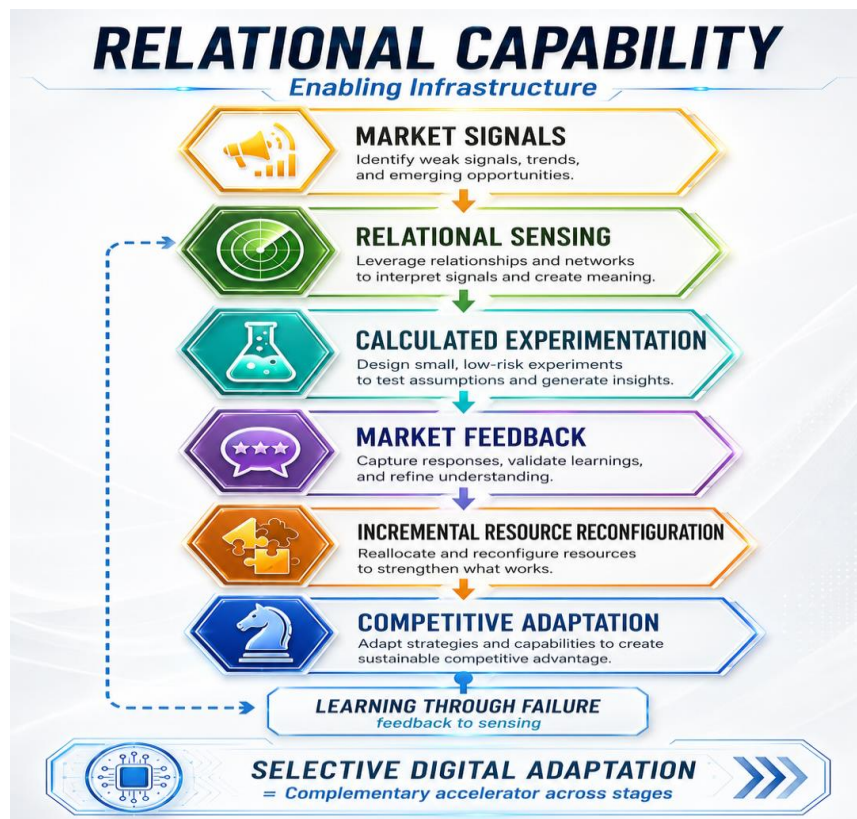


Figure 2. Relational-Incremental Microfoundation of Dynamic Capabilities

Discussion

This study set out to explain how handicraft MSMEs operating within a traditional market develop and enact dynamic capabilities under conditions of limited resources, strong relational embeddedness, and uneven digitalisation. The findings reveal that adaptation is structured around three interrelated mechanisms: relational market sensing, calculated experimentation, and incremental resource reconfiguration. These mechanisms extend the conventional sensing-seizing-transforming framework by identifying how its underlying processes are enacted in microenterprises where formal managerial systems are limited, and owner-managers remain closely involved in everyday transactions.

The principal theoretical implication is that low organisational formality should not be interpreted as the absence of dynamic capability. In the firms studied, capabilities were embedded in repeated interactions and decision patterns rather than specialised structures. The proximity of owner-managers to customers compressed the distance between environmental sensing and managerial interpretation. Similarly, direct control over inventory, purchasing, supplier selection, and customer communication reduced the organisational distance between opportunity recognition and resource reconfiguration. These structural characteristics help

explain why dynamic capabilities in microenterprises become visible through recurrent everyday practices.

Relational Market Sensing as Informal Market Intelligence

The first contribution concerns the nature of sensing. Existing research has established that SME networks facilitate access to knowledge and external resources (Soluk et al., 2023; Li & Wang, 2026). The present study advances this perspective by showing that relationships can constitute part of the sensing capability itself. Customer requests, supplier information, artisan knowledge, reseller feedback, and interactions among traders collectively created an informal market-intelligence infrastructure.

This finding matters theoretically because it shifts relational resources from the context of sensing to the mechanism through which sensing occurs. In firms without specialised market-research functions, social and commercial embeddedness can provide a distributed information system. Repeated interaction allows entrepreneurs not only to receive information but also to validate weak market signals across multiple relational sources. This explains why apparently informal practices can produce strategically relevant information: their effectiveness derives from relational proximity, frequency of interaction, and the entrepreneur's capacity to interpret recurring signals.

Calculated Experimentation as Resource-Conscious Seizing

The second contribution concerns seizing. Conventional descriptions of opportunity capture can imply relatively visible investment or resource commitment. The firms in this study instead pursued opportunities through small, reversible experiments. Entrepreneurs purchased limited quantities, observed customer responses, and expanded commitment only after receiving confirmatory market signals.

This pattern demonstrates that resource scarcity can have a dual effect. It clearly constrains strategic choice, but it can also encourage disciplined commitment. Where resource slack is limited, entrepreneurs cannot afford prolonged experimentation or large irreversible investments. They therefore favour rapid, low-cost tests that generate information while preserving working capital. Calculated experimentation can consequently be conceptualised as a resource-conscious microfoundation of seizing. Importantly, this does not imply that scarcity is inherently beneficial; rather, some entrepreneurs develop adaptive decision rules that convert constraint into cautious opportunity-validation practices.

Incremental Reconfiguration and the Temporality of Transforming

The third contribution concerns transforming. Participants rarely described transformation as radical organisational restructuring. More commonly, change occurred through repeated adjustments to inventory, product combinations, suppliers, working capital, packaging, communication channels, and selling practices. These findings suggest that the theoretical significance of transformation should not be evaluated solely according to the magnitude of individual changes. In microenterprise settings, temporality and accumulation may be more important.

A single inventory adjustment may appear operational, but a sequence of recurring adjustments can substantially change a firm's resource configuration over time. Incremental resource reconfiguration therefore connects ordinary operations with strategic adaptation. Operational activity becomes dynamically capable when it is repeatedly modified in response to environmental information and learning. This distinction is important because not every routine adjustment constitutes a dynamic capability. Its strategic status depends on whether the adjustment contributes to repeated realignment between the firm's resources and changing market conditions (Saeedikiya et al., 2024; Yao et al., 2026).

Distinguishing Ordinary from Dynamic Capabilities

A potential theoretical concern is whether the practices identified in this study constitute dynamic capabilities or merely ordinary operational routines. The findings suggest that the distinction lies in their adaptive function and recursive modification. Purchasing inventory, communicating with customers, or using WhatsApp are ordinary activities in themselves. They become components of dynamic capability when market information causes entrepreneurs to modify how these activities are performed, when those modifications alter resource allocation, and when the outcomes feed into subsequent decision rules. Dynamic capability therefore resides not in the isolated activity but in the recurrent mechanism connecting environmental signal, interpretation, action, resource adjustment, and learning.

Beyond Digitalisation: Technology as a Complementary Capability

The findings also qualify increasingly technology-centred explanations of SME adaptation. Digital tools were clearly valuable, but greater use of digital channels did not automatically indicate a stronger adaptive capability. Their strategic contribution depended on how they were integrated with customer relationships, market information, experimentation, and operational flexibility. WhatsApp often extended customer relationships established through physical-market transactions; social media increased product visibility; and

marketplaces provided additional selling opportunities. Yet firms differed in the extent to which these technologies fitted their customers, managerial capacity, products, and business models.

The implication is not that digitalisation is unimportant, but that digital adoption and dynamic capability are analytically distinct. Digital technology provides potential connectivity, reach, and information. Dynamic capabilities determine how entrepreneurs interpret these possibilities, selectively mobilise them, and integrate them with existing resources and relationships. The strategic value of digitalisation in microenterprises is therefore contingent on its integration with relational sensing, calculated experimentation, learning, and resource reconfiguration. Competitiveness does not arise from digital presence alone but from the capacity to combine technological and non-technological resources into contextually appropriate adaptation mechanisms.

Why Relational and Incremental Capabilities Emerge in Microenterprises

Three structural characteristics help explain why the identified mechanisms emerged in the present context. First, owner-manager proximity reduces the distance between market interaction and strategic interpretation. Entrepreneurs directly observe customer behaviour and can rapidly translate those observations into decisions. Second, limited resource slack makes large irreversible commitments particularly risky, encouraging staged experimentation and reversible decisions. Third, relational embeddedness enables businesses to access information and resources beyond their formal organisational boundaries.

These characteristics create a distinctive adaptive architecture. High relational proximity strengthens sensing; resource constraint encourages calculated seizing; and limited organisational complexity facilitates incremental reconfiguration. Digital technologies can accelerate this architecture but do not replace its underlying relational and experiential foundations. The argument therefore moves beyond describing what microenterprises do by identifying the organisational conditions that make relational and incremental forms of dynamic capability both feasible and strategically relevant.

Learning as a Recursive Reinforcement Mechanism

Learning through failure reveals that the identified dynamic capabilities are recursive rather than merely sequential. Failed product purchases, supplier dependence, and inaccurate custom-order calculations generated revised decision rules that shaped subsequent sensing and seizing. Experience therefore altered not only what entrepreneurs knew but how they acted. This creates a feedback loop in which outcomes from previous resource commitments influence future opportunity interpretation. In microenterprises without formal knowledge-

management systems, experiential learning may therefore serve as an important mechanism through which adaptive routines are progressively refined.

Theoretical Contributions

This study makes four theoretical contributions. First, it extends the microfoundations of dynamic capability by identifying relationships as an operational mechanism of sensing rather than merely an external resource. Relational market sensing demonstrates how socially embedded interactions can substitute partly for formal market-intelligence structures.

Second, it conceptualises calculated experimentation as a resource-conscious form of seizing. This mechanism explains how microenterprises pursue opportunities through staged and reversible commitments under conditions of uncertainty and limited working capital.

Third, it introduces incremental resource reconfiguration as a microenterprise form of transforming. This perspective shifts attention from radical episodes of organisational change towards cumulative micro-adjustments whose strategic impact emerges over time.

Fourth, the study repositions digitalisation within the dynamic-capability framework. Rather than functioning as an autonomous source of competitiveness, digital technology acts as a complementary capability whose strategic value depends on its integration with relational, experiential, and resource-reconfiguration processes. Together, these contributions form a relational-incremental microfoundation of dynamic capabilities that explains how firms with limited formal structures can nonetheless develop strategically meaningful adaptive capacity.

Theory-Building Propositions

Proposition 1. In resource-constrained microenterprises, relational embeddedness strengthens dynamic sensing by converting recurrent customer and network interactions into an informal market-intelligence infrastructure.

Proposition 2. Under conditions of limited resource slack, opportunity seizing is more likely to occur through calculated experimentation characterised by small, reversible, and progressively escalated commitments.

Proposition 3. In microenterprises, transforming can emerge through cumulative micro-reconfigurations whose strategic effect becomes visible over time rather than through episodic radical restructuring.

Proposition 4. The strategic value of digitalisation increases when digital technologies are integrated with relational sensing, experimentation, learning, and resource-reconfiguration mechanisms.

5. CONCLUSION AND IMPLICATIONS

Conclusion

This study demonstrates that dynamic capabilities in traditional-market microenterprises can emerge through mechanisms that are informal in structure yet strategic in consequence. Among handicraft MSMEs in Beringharjo Market, market change was primarily sensed through relationships, opportunities were seized through calculated small-scale experimentation, and transformation occurred through cumulative resource reconfiguration. These mechanisms were reinforced by experiential learning and selectively supported by digital technologies.

The central theoretical contribution is the relational-incremental microfoundation of dynamic capabilities. The model shows that sensing, seizing, and transforming need not depend on specialised managerial systems, extensive resource slack, or radical organisational transformation. In microenterprises, strategically meaningful capability can instead develop through recurring interactions that connect environmental signals, entrepreneurial interpretation, staged commitment, resource adjustment, and learning.

The study also challenges technology-deterministic interpretations of SME adaptation. Digitalisation expands informational and relational possibilities, but technology creates strategic value only when integrated with the firm's wider adaptive mechanisms. The relevant distinction is therefore not between digital and non-digital firms but between firms that can and cannot translate available information and technologies into contextually appropriate resource decisions.

By shifting attention from the presence of digital tools towards the mechanisms through which microenterprises recognise, test, learn from, and respond to change, this study offers a more context-sensitive understanding of strategic adaptation in resource-constrained and socially embedded businesses.

Managerial Implications

For MSME owners, stronger adaptation does not require maximum digital adoption. The priority is to improve the quality of market signals available for decision-making. Customer questions, supplier information, reseller feedback, and artisan knowledge can be recorded more systematically and compared over time to identify recurring patterns rather than relying solely on intuition.

Second, entrepreneurs should institutionalise low-cost experimentation. New products, selling channels, packaging, or promotional approaches can initially be tested through limited commitments with explicit criteria for continuation, modification, or termination. This approach protects scarce working capital while generating market evidence.

Third, owners should periodically review the allocation of stock, suppliers, products, customer channels, and working capital so that incremental adjustments become part of a continuous learning cycle rather than isolated reactions.

Fourth, digitalisation strategies should emphasise strategic fit rather than platform quantity. Digital tools should be selected according to customer behaviour, product characteristics, owner capabilities, transaction needs, and expected informational or relational value.

Policy Implications

For market managers and local governments, MSME development programmes should move beyond platform-based digital training. Capacity-building initiatives should also strengthen market sensing, customer relationship management, supplier and artisan networks, small-scale experimentation, inventory management, costing, branding, and experiential learning. Digital assistance is likely to create greater value when integrated with these underlying capabilities.

At the policy level, the findings caution against using digital-platform adoption as a proxy for MSME modernisation or competitiveness. A firm may use multiple digital platforms without developing the ability to interpret market information or reconfigure resources, while another firm with limited platform use may display substantial adaptive capacity through strong relationships and disciplined experimentation. MSME policy should therefore assess capability development more broadly, incorporating relational, learning, experimentation, and resource-management dimensions alongside digital indicators.

Limitations and Future Research

The study has several limitations that also define opportunities for future research. First, the research examines a single traditional market and a specific craft-business context. The findings therefore support analytical rather than statistical generalisation. Comparative studies involving modern retail environments, tourism markets, digital-native microenterprises, rural enterprises, and other traditional markets could assess the boundary conditions of the relational-incremental model.

Second, the analysis primarily reflects the perspective of owners and managers. Future multi-actor studies could incorporate customers, suppliers, artisans, resellers, market managers, and policy actors to investigate whether the same adaptation processes are interpreted similarly across the wider business ecosystem.

Third, the study captures participants' experiences within a bounded fieldwork period, whereas dynamic capabilities are inherently temporal. Longitudinal research could directly observe how sensing signals, experiments, outcomes, learning, and resource reconfiguration evolve.

Fourth, the three proposed mechanisms - relational market sensing, calculated experimentation, and incremental resource reconfiguration - require further validation across sectors and institutional contexts. Subsequent qualitative research can refine their conceptual boundaries, while quantitative studies may develop and validate measurement scales after construct domains have been sufficiently stabilised.

Finally, future research could examine the conditions under which incremental adaptation becomes insufficient. Relational and incremental mechanisms may be effective under gradual market change but potentially less adequate during major technological, regulatory, or structural disruptions. Investigating this boundary would clarify when microenterprises need to move from incremental reconfiguration towards more radical strategic renewal.

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