



How sharing-platform SMEs innovate their business models in developing economies: A process and ecosystem perspective

Sara Odat^a, Omar Al-Tabbaa^{b,*}, Zaheer Khan^{c,d}, George Saridakis^e

^a Department of Business Administration, Business School, The Hashemite University, Zarqa, Jordan

^b Leeds University Business School, University of Leeds, UK

^c Business School, University of Aberdeen, UK

^d International Business, School of Marketing and Communication, University of Vaasa, Finland

^e Kent Business School, University of Kent, UK

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ABSTRACT

Sharing-platform small and medium-sized enterprises (SPSMEs) are a critical player in the sharing economy. However, how they innovate their business models in the developing economies setting is still unclear. This is because most research focuses on large sharing-platform firms in developed economies, often treating their business models as relatively static configurations, while explaining their innovation mainly from the firm's internal perspective. Accordingly, we ask: how SPSMEs, that operate in developing economies, adapt and reconfigure their business models over time while responding to challenging external conditions (including weak institutions, regulatory uncertainty, low digital awareness, fragmented provider networks, and limited ecosystem support). Drawing on multiple-case studies comprising seven SPSMEs in Jordan and the UAE, we develop a 3Ts process model (Triggering, Theming and Transforming) which explains how SPSMEs recognise opportunities, define value logics, and reconfigure their digital activity systems over time. We also show that the SPSMEs business ecosystem consists of two networks (the Digital Activity Network and the Digital Business Network), whose actors enable, constrain and redirect the business model innovation process. The study contributes to research on business model innovation (BMI) and the sharing economy literature by showing that BMI in SPSMEs is not a one-off design outcome. Rather, it is an evolving and context-sensitive process shaped by firm-level adaptation and business ecosystem conditions, particularly in developing economies.

1. Introduction

The sharing economy is revolutionizing the business landscape, introducing a paradigm shift encapsulated by the notion: “you are what you can access” (Belk, 2014, p.1595). Although sharing is not a novel concept, participation in sharing activities expanded after the 2008 recession (Muñoz and Cohen, 2018; Lo et al., 2020). Digital platforms played a key role in this growth by connecting users through extended networks (Olson and Kemp, 2015). Direct and indirect network effects enable sharing economy firms to capture value (cf. Gerwe and Silva, 2020; Zeng et al., 2021). This shift has given rise to a transformative era, creating an unprecedented opportunity for businesses whose models rely on tapping into under-utilized resources and assets (Mair and Reischauer, 2017; Zeng et al., 2021). Within this context, sharing platform small and medium-sized enterprises (SPSMEs) have become an

important part of the digital business sector (Ojala et al., 2018; Gyamerah et al., 2025). Contrary to the notion that success in the digital economy is contingent on a company's size, SPSMEs possess the agility to rapidly grow and assert themselves as industry leaders on both national and international stages (Gawer and Cusumano, 2008; Balboni et al., 2019; Evers et al., 2023; Surana et al., 2024). Their role is especially important in developing economies, where digital platform firms often operate under institutional, infrastructural and ecosystem conditions that differ substantially from those facing large platforms in developed economies.

While research has generated substantial insights about Unicorns (large sharing platforms SPs) in developed economies, our understanding of SPSMEs in developing economies and how they engage in the innovation process of their business models (BMs) within the business ecosystem remains comparatively limited. This gap matters because

* Corresponding author.

E-mail addresses: osara@hu.edu.jo (S. Odat), busofoa@leeds.ac.uk (O. Al-Tabbaa), zaheer.khan@abdn.ac.uk (Z. Khan), G.Saridakis@kent.ac.uk (G. Saridakis).

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institutional conditions in developing economies shape how SPSMEs adapt and reconfigure their business models (Mashingaidze, 2025). Addressing this gap is especially timely, as the sharing economy cannot be reduced to a one-size-fits-all business model sizes (large or SMEs) and contexts (developed or developing economies) (Muñoz and Cohen, 2018). SPSMEs in developing economies often develop BMs that differ from those of dominant large platforms in developed markets (Dabić et al., 2024). As Räisänen et al. (2021, p. 8) suggest, a strong focus on unicorns can “lead to a distorted picture of the sharing economy when considering smaller firms and start-ups.” Consequently, many SPSMEs have struggled to replicate the same benefits by simply copying the BMs or BMIs of unicorns (Täuscher and Kietzmann, 2017; Zhao et al., 2020), which in turn constrains their survival and growth prospects (Laczko et al., 2019). Scholars have repeatedly highlighted this concern (e.g., Dabić et al., 2024; Wang et al., 2018), which points to the need to examine SPSMEs in developing economies on their own terms within the institutional and ecosystem contexts that shape their trajectories.

Despite growing interest in SPSMEs, it remains unclear how such firms operating in developing economies evolve and innovate their BMs to survive in weak or underdeveloped business ecosystems (Sanasi et al., 2020; Belezas and Daniel, 2023; Evers et al., 2023). This ambiguity has prompted calls for a more comprehensive understanding of the dynamic process of BMI in SPSMEs, emphasizing the need to explore the evolutionary trajectories of their BMs (Teece, 2020). Furthermore, scholars have advocated for a multi-level perspective that incorporates both macro (boundary-spanning) and micro (firm-level) levels analysis, to scrutinize the intricate and dynamic systems of the sharing economy value creation and capture BMs (Andreini et al., 2022; Bhandari et al., 2023; Essen et al., 2023). In this respect, despite scholars have suggested that SPSMEs BMs are a system of interdependent activities that are “ecosystem-centric in their design” (Zhao et al., 2020, p. 15; Zeng et al., 2021), most studies have investigated BMI from the micro perspective [firm-view] without considering the ecosystem-embedded in BMI [macro perspective] (Frishammar and Parida, 2019; Yi et al., 2022).

Moreover, recent scholarship has drawn attention to the importance of underexplored contexts, calling for closer examination of SPSMEs operating in developing economies (Räisänen et al., 2021; Duan, 2024). These firms face distinctive operational challenges in digitally mediated ecosystems, yet research has provided little insight about the factors that shape their BMI and performance outcomes (Loon et al., 2026; Duan, 2024). Addressing this gap requires a more nuanced inquiry into SPSMEs, one that considers the interplay between firm-level innovation and ecosystem-level contingencies. Such an approach can advance our understanding of the sharing economy's evolving business model landscape.

Drawing on the previous discussion, a significant theoretical gap remains. While prior research has examined BMI in sharing economy firms, it has tended to do so through relatively static, firm-centred, and large-platform lenses. This leaves insufficient explanation of how BMI unfolds over time in SPSMEs as ecosystem-embedded firms, particularly in developing economies where firms operate in challenging institutional and ecosystem conditions (Al-Tabbaa et al., 2026). Therefore, the objective of this study is to develop an in-depth understanding of the dynamic process of SPSMEs' BMI in developing economies by examining both its micro-level process and its macro-level ecosystem conditions. At the micro-level, we draw on the activity system perspective to specify *what* changes in the interdependent activities of content, structure, and governance in the business model and how value-creation themes are configured (Amit and Zott, 2001; Amit and Han, 2017; Zhao et al., 2020). However, because BMI in SPSMEs is also an adaptive process shaped by how firms recognise opportunities, evaluate constraints, and reconfigure resources under uncertainty, we complements the activity system view with the dynamic capabilities perspective by explaining *how and through which capabilities* such change unfolds through sensing, seizing, and transforming (Teece, 2007, 2018; Leih et al., 2015). At the

macro-level, we draw on the business ecosystem perspective to understand how SPSMEs BMI process evolve over time in response to changing macro-level ecosystem conditions because SPSMEs' BMI is shaped primarily by interdependencies among firms, platforms, and institutions that present unique challenges and opportunities for SPSMEs in developing economies. Unlike innovation or knowledge ecosystems, which primarily emphasise technological collaboration, innovation production or knowledge flows, the business ecosystem lens is more appropriate for our study because it focuses on value creation and capture around a focal firm, and on how interdependent actors co-evolve under specific institutional conditions (Cobben et al., 2022). This makes it particularly relevant for SPSMEs in developing economies, where weak institutions and dynamic networks critically influence survival and growth.

Building on this logic, this study is guided by the following overarching research question: *How does business model innovation by SPSMEs, operating in developing economies, unfold through the interaction between firm-level adaptation and business ecosystem conditions?* To answer this question, we examine two analytically distinct, but empirically interrelated, dimensions. The first concerns how SPSMEs in developing economies innovate their business models to survive, and therefore centres on the firm-level process of BMI (i.e., micro-level). The second concerns how business ecosystem conditions enable, constrain, and redirect this innovation process, and therefore centres on the contextual conditions shaping BMI (i.e., macro-level). Together, these two sub-questions treat firm-level adaptation and business ecosystem conditions as interrelated dimensions of the same BMI process. Drawing on the activity system (Amit and Zott, 2001; Zott and Amit, 2010), dynamic capabilities (Teece, 2007), and business ecosystem (Phillips and Ritala, 2019) perspectives, we analyze rich multi-case data from seven SPSMEs in Jordan and the UAE at different stages of development.

Our analysis offers important contributions to theory. *First*, we introduce the 3Ts model (Triggering, Theming, and Transforming), which conceptualizes the dynamic trajectories through which SPSMEs innovate their BMs in developing economies. This model extends BMI and sharing economy scholarship by reframing BMI as an evolving, context-sensitive process rather than a static construct. Previous studies have tended to adopt firm-centric and static views of BMI (e.g., Ciulli and Kolk, 2019; Zhao et al., 2020), leading to a lack of theorizing around its evolutionary dimensions. Responding to recent calls for dynamic theorization (Snihur and Bocken, 2022; Essen et al., 2023), especially in the sharing economy (e.g., Zeng et al., 2021), we apply the activity system (Amit and Zott, 2001; Zott and Amit, 2010) and dynamic capabilities perspective (Teece, 2007) to demonstrate how SPSMEs configure and reconfigure interdependent activities over time in response to changing market conditions that present unique challenges and opportunities for SPSMEs. This process identifies the activities involved in innovating the BM over time, along with the underlying capabilities within each activity that enable this innovation.

Second, we advance the research on the sharing economy, BMI, and business ecosystems by identifying the contextual and ecosystem conditions (i.e., macro-level) that shape the BMI in SPSMEs. Drawing on Phillips and Ritala's (2019) extension of the business ecosystem perspective (Moore, 1993) and the network-centric lens of ecosystems (cf. Jacobides et al., 2018; Nambisan et al., 2019), we demonstrate how ecosystem actors influence SPSMEs' BMI. Importantly, we demonstrate how actors in developing economies enable, constrain, and redirect BMI and how their influence differs across the stages of the 3Ts model. In doing so, we respond to calls to examine the factors that shape BMI in different sharing economy contexts (cf. Grieco, 2021; Zeng et al., 2021; Yi et al., 2022). We also address calls for investigating the overall impacts of business ecosystem on the BMI process in the sharing economy context in developing countries, which remains largely underexplored in the literature (Loon et al., 2026; Geissinger et al., 2019). Specifically, we identify two interconnected networks within the SPSME business ecosystem and explain how actors within these networks influence different stages of the BMI process.

Our study also has important implications for managers. It provides SPSME managers with clearer insight into how their digital activity systems evolve over time. It further shows that successful BMI depends on recognising and managing the interdependencies within that system when redesigning business models. Finally, it highlights the influence of business ecosystem actors in driving the BMI of SPSMEs.

The rest of paper is organized as follows. First, we review the theoretical background of the sharing economy and sharing economy platform SMEs, business model innovation (micro perspective), and business model innovation ecosystem (macro perspective). Then, we present the multiple-case analysis used to develop the 3Ts process model and the ecosystem model of SPSME BMI. We conclude with a detailed discussion of our study's theoretical and practical implications.

2. Conceptual background

2.1. Sharing economy and sharing economy platform SMEs

Sharing economy companies are entities that leverage digital platforms to facilitate and mediate transactions encompassing both market logic (renting and selling) and non-market logic (sharing, temporary accessing, lending, gifting, and swapping) between asset owners (providers) and those in need (users), yielding both monetary and non-monetary benefits. These companies operate in an asset-light manner, relying on third-party providers to furnish goods and services on a global scale (cf. Grieco, 2021; Uzunca et al., 2018).

Overall, companies operating within the sharing economy (SE) fall into two categories. The first comprises born-digital sharing companies. This category includes 'National digital platforms,' 'Multinational digital platforms,' 'Large digital platforms' (Unicorns), and 'SPSMEs' (less than 300 employees). The other category is transformer companies (incumbents/established companies), which comprises non-sharing companies that transformed into sharing companies via the process of BMI (Monaghan et al., 2020). In this study, we focus on the SPSMEs at the national and multinational levels.

Reviewing the SE literature shows two main perspectives: the micro perspective and the macro perspective. In the micro-perspective, BM is the mainstream in the SE literature. In the macro-perspective, several streams have been found in the literature that affect and are affected by the SE. For example, prior studies have focused on the customer, technology, sustainability, regulation, employing and traditional industries. Within these streams, some researchers have focused on how these streams influence and affect the SE (e.g. Sun et al., 2019; Zhang et al., 2018). Others have investigated the SE's impact on these themes (e.g. Kong et al., 2020; Williams and Horodnic, 2017).

Regarding the context, developed and developing economies differ in shaping the evolution of SPSMEs BMs. While SPSMEs in developed economies benefit from strong legal frameworks, government support, and established digital infrastructures that foster trust and innovation, SPSMEs in developing economies face weak institutional environments characterized by regulatory voids, obsolete laws, low digital awareness, and fragmented provider landscapes (cf. Abdalla et al., 2025; Ko et al., 2022). These institutional weaknesses place disproportionate pressures on SPSMEs and expose limits in existing BMI theory, which has largely been developed in stable and advanced contexts. In such settings, SPSMEs must rely on network ties, collaborations with reputable institutions, and resource-based dynamic capabilities to compensate for institutional weaknesses (cf. Abdalla et al., 2025; Zeng et al., 2021).

Importantly, trust emerges as a central challenge in developing economies, where fragile legal systems and limited consumer protection hinder platform adoption (Abdalla et al., 2025; Chen and Wang, 2019). Consequently, SPSMEs not only adapt their BMs to local constraints but also actively reshape institutional environments through innovation and ecosystem engagement (Eckhardt et al., 2019; Tello-Gamarra and Netto, 2022). This underscores the insufficiency of existing BMI theorization and highlights the need for frameworks that explicitly account for the

contextual heterogeneity of the sharing economy across economies, as most current research remains skewed toward developed contexts (cf. Grieco, 2021; Dreyer et al., 2017).

2.2. Business model innovation: A micro perspective

The current literature conceptualizes BMI primarily through two lenses: activity system redesign and dynamic capabilities. BMI is the changes that occur over time (evolution) in designing BM regarding its elements (activities) and themes. The activity system perspective (Amit and Zott, 2001, 2010) effectively captures BMI's structural components—design elements (content, structure, governance) and themes (novelty, lock-in, complementarity, efficiency). Adapting activity system perspective in BMI “provides insights into the process that enable the evolution of a platform firm's business model over time” (Amit and Han, 2017; Velu, 2017; Zhao et al., 2020, p. 5) and the interdependencies between activities, which is still unknown in the digital platform literature (Frankenberger and Sauer, 2019). However, while this framework explains intra-firm evolution (Velu, 2017), it fails to adequately account for the ecosystem interdependencies that characterize digital platforms (Frankenberger and Sauer, 2019). Despite BMI being a “boundary-spanning activity system that centres on a focal firm, yet may encompass activities performed by its partners, suppliers and customers in the pursuit of value creation and capture” (Snihur et al., 2021, p. 4), this theoretical gap becomes particularly apparent when examining how external actors influence thematic changes in platform business models.

The dynamic capabilities view (Teece, 2007, 2018) complements this by framing BMI as a strategic process of sensing, seizing and transforming opportunities (Leih et al., 2015). In order to gain an in-depth understanding of SPSMEs' BMI over time, dynamic capabilities play a significant role in creating and implementing the BMI process. According to Amit and Zott (2016, p.9), BM design “, in and of itself, can be viewed” as dynamic capabilities. As BMI is “foundation to dynamic capabilities” (Teece, 2007, p. 1330), dynamic capabilities undergird the process of creating and capturing value (Leih et al., 2015; De Silva et al., 2021). In fact, the dynamic aspect of BMI results from the interaction between BM elements to exploit potential opportunities. To be competitive, there is a need to change BM design by sensing, seizing and transforming the resources (Teece, 2007, 2018). Yet the predominant focus on firm-level capabilities (Yi et al., 2022) overlooks how these capabilities must operate across ecosystem boundaries - a critical oversight given digital platforms' direct and indirect network-dependent nature (Foss and Saebi, 2018). This reveals a fundamental tension in BMI research: while scholars recognise the importance of ecosystem-embedded innovation (Zott and Amit, 2010; Jucevski et al., 2020), most frameworks remain anchored in firm-centric paradigms. The emerging concept of ecosystem BMI challenges the traditional view of BMI, which proves inadequate for capturing the complexities of a networked digital world where innovation is inherently reliant on multiple actors (Jucevski et al., 2020). In fact, “the business ecosystem literature identifies the value capture mechanisms as business model innovation” (Cobben et al., 2022, p. 144). Indeed, the ecosystem view in BMI is essential, so that the relevance of the external environment is recognised in dynamic ecosystems (Trabucchi et al., 2021).

This theoretical fragmentation creates three significant limitations. First, the artificial separation between micro-level firm analyses (Teece, 2007; Bucherer et al., 2012) and emerging platform research (Amit and Han, 2017) obscures the multi-level dynamics of BMI. Second, current models inadequately explain how macro-level ecosystem interactions enable or constrain micro-level innovations. Third, the lack of integration between activity system, dynamic capability and ecosystem theories (Frishammar and Parida, 2019) hinders our understanding of BMI as a boundary-spanning process. Addressing these gaps requires a more holistic framework that captures BMI's nested nature across firm and ecosystem levels.

2.3. BMI and ecosystem: A macro perspective

Recent studies highlight the importance of understanding of BMI in SPSMEs as an outcome of joint efforts by multiple stakeholders rather than a stand-alone phenomenon (Markman et al., 2021; Yi et al., 2022). Indeed, BMI is affected by various ecosystem-level factors, particularly stakeholders. In this regard, Yi et al. (2022), assert that “the literature exploring the antecedents of BMI has been guided mainly by the firm-centric view that focuses on the effects of firms’ internal factors [...] leaving the role of stakeholders largely underexplored” (Yi et al., 2022, p. 1). This omission underscores the need for a comprehensive exploration of the influence of stakeholders on BMI. Notably, SPSMEs operate within intricate ecosystems characterized by networked communities (Zeng et al., 2021) comprising diverse actors interacting dynamically within varying economic contexts (developed and developing). Business ecosystems are distinct from other ecosystem types in that they are uniquely organised around value creation and capture through a focal firm (cf. Cobben et al., 2022; Nambisan et al., 2019). SPSMEs function as commercially focal intermediaries orchestrating economically motivated actors, and their platform-mediated, revenue-generating logic maps directly onto this business ecosystem form. Thus, grasping the overarching impact of macro-level factors, as addressed in this study, on SPSMEs’ BMI becomes paramount (Grieco, 2021; Hossain, 2020).

Based on the above discussion, to gain a more nuanced understanding of the evolution of BMI in SPSMEs, it is essential to leverage both micro and macro perspectives. Integrating the activity system and dynamic capabilities frameworks with a broader ecosystem view allows for a holistic approach that considers the internal dynamics of firms as well as the external influences of stakeholders and macroeconomic factors. This comprehensive perspective enables a deeper analysis of how SPSMEs innovate over time, adapt to changes, and create value within complex and interconnected ecosystems. Such an integrated approach can reveal the multifaceted interactions and dependencies that drive the continuous evolution and competitiveness of SPSMEs in the SE.

Recent studies (e.g., Loon et al., 2026) indicate that SPSMEs in emerging economies are forced to innovate their BMs with more creative adaptations than those in developed economies due to weak institutions and infrastructure (cf. Abdalla et al., 2025). Interestingly, developed economies learn from their innovation, as Loon et al. (2026, p. 14) noted: “developed economies can learn from innovative digital solutions in emerging markets”. This highlights the importance of investigating SPSMEs in developing economies where BMI in this environment “is not an end to itself but a regular process involving changes to business models (Loon et al., 2026, p. 1). Despite this, literature provide little insights beyond developed economies on how SPSMEs innovate their BMs in developing economies, where they operate in a weak institutional environment such as poor infrastructure and high unemployment rate by creating jobs for providers and offering better economic value for users. Weak institutional environments have unique conditions that put pressures on SPSMEs and affect their behavior (cf. Abdalla et al., 2025; Amankwah-Amoah et al., 2022).

Overall, the literature suggests that BMI in SPSMEs cannot be adequately understood through firm-centred or static explanations alone. What remains underexplored is how BMI unfolds over time in SPSMEs as ecosystem-embedded firms, particularly in developing economies where institutional weakness, infrastructural limitations, and stakeholder pressures shape both the process and trajectory of innovation. A more complete understanding therefore requires connecting the micro-level dynamics of business model reconfiguration with the contextual and ecosystem conditions of the business ecosystem. On this basis, this study addresses a) How do SPSMEs in developing economies innovate their business models to survive? (which centres on the firm-level process of BMI), and b) How does the business ecosystem influence that innovation process?

3. Methodology

We adopt a qualitative multiple-case design to examine seven SPSMEs from Jordan and the UAE. This approach is well suited to investigating BMI as a dynamic, context-dependent, and ecosystem-embedded process. Importantly, the unit of analysis in our study is the BMI process of the focal SPSME (not the firm). We analyzed this process through two linked analytical dimensions. The first captured how SPSMEs reconfigured their digital activity systems over time. The second captured how ecosystem actors enabled, constrained, or redirected these reconfigurations. These analytical dimensions correspond to the first and second sub-questions, but they were analyzed relationally rather than as separate empirical phenomena, allowing us to trace the dynamic interplay between firm-level adaptation and ecosystem conditions.

We draw on 45 in-depth semi-structured interviews, complemented by secondary data from published documents, to strengthen triangulation and improve the robustness of our interpretations. For the analysis, we follow Eisenhardt’s (1989) approach to multiple-case theory building as the overarching methodological framework, while using the Gioia method (Gioia et al., 2013) as the analytical technique to move systematically from rich empirical evidence to theoretically grounded constructs.

3.1. Research context and case selection

We purposefully selected seven SPSMEs from Jordan and UAE that were operating their BMs locally and internationally (see Table 1). Consistent with theoretical sampling (Eisenhardt, 2021), we applied four criteria to ensure that the selected cases in the focal phenomenon were observable and theoretically rich. Cases that did not meet these criteria were excluded, as they were not of theoretical relevance to our study. *First*, cases had to originate in Jordan or the UAE and later expand abroad, spanning diverse sectors (i.e., delivery, dry-clean, and education), capturing the sharing economy’s long tail beyond Uber and Airbnb (Geissinger et al., 2021). Despite Jordan and the UAE being considered developing countries, they have different economic situations, unemployment rates, and growth patterns that allow comparative analysis. Thus, these countries enable us to understand the macro environment and how SPSMEs in different contexts have distinctive effects on SPSMEs, which remains unexplored in the literature (cf. Davidson et al., 2018; Grieco, 2021). *Second*, they had to be born-digital platforms (not transformed incumbents) mediating users and providers. *Third*, cases had to qualify as SPSMEs generating economic value. We verified this during the case-selection stage through preliminary online interviews with the founder in each case, which enabled us to confirm that the firms were active sharing-platform SMEs engaged in market-based transactions and generating revenue, rather than purely conceptual, non-commercial, or inactive ventures. This is a strategy that is commonly adopted to improve the validity of qualitative studies (Mezger, 2014). *Finally*, to ensure sufficient variation across cases, we selected firms whose business models demonstrated observable innovation in activity content, structure, and governance at both local and international levels. More specifically, we followed a case study protocol to provide clear guidelines and governing rules for the conduct of the cases (Yin, 2017). In line with this protocol, we conducted preliminary interviews with founders during the case-selection stage, asking how their activity systems had changed over time in terms of what services were offered (content), how activities and interactions between users and providers were organised (structure), and who controlled or performed those activities (governance). We then cross-checked these reported changes against secondary sources, including company websites, press coverage, and other publicly available documents. Cases were retained only where we found clear evidence of substantial transformations in one or more of these dimensions.

Table 1
Reporting cases (case profiles of the seven SPSMEs and interview informants).

Case	Case Overview	Respondents (n = 45)
Case 1	C1 launched in Amman in 2016, was a sharing-economy platform connecting homeowners with vetted plumbers, electricians, and other maintenance providers through an app. Marketed as Jordan's first local-skills platform, it offered certification and online booking. Persistent service inconsistencies spurred pivots—adding in-house staff and subscription tiers—over three years. Despite growing from two founders to seven employees, C1 eventually shut down.	C1-1 Co-founder and CEO C1-2 Co-founder and CTO C1-3 Creative leader; C1-4 Customer care C1-5 Order manager; C1-6 content manager
Case 2	C2 launched in Amman in 2016, trained home-maintenance providers to enforce quality standards. However, by 2020 its 10-employee base and low demand failed to motivate compliance, creating a chicken-and-egg trap. C2 abandoned its peer-to-peer model for in-house teams, revealing the vulnerability of digital platforms in Jordan's low-trust, unregulated market.	C2-1 Founder and CEO; C2-2 COO C2-3 Call centre and coordinator C2-4 Content team C2-5 Operation associate C2-6 CTO
Case 3	C3, a Dubai last-mile delivery platform, connects customers to drivers via real-time orders. Its asset-light gig-worker model scales but suffers from inconsistent service due to unpredictable driver availability. This agility-consistency trade-off underscores the difficulty of standardizing quality in the UAE gig market.	C3-1 CO founder and COO; C3-2 Operation Associate C3-3 Front end leader/ Technological department C3-4 Customer service association; C3-5 Content team; C3-6 Content team
Case 4	C4, a UAE laundry platform, initially adopted an asset-light, Uber-inspired model to bypass fragmented WhatsApp-based operators. By 2021, after scaling to 20 employees, C4 pivoted to full vertical integration—directly managing pick-up, cleaning, and tracking. This shift highlights the inherent trade-off between asset-light scalability and the quality-control demands of trust-sensitive services.	C4-1 CO founder and COO; C4-2 CEO C4-3 HRM; C4-4 Finance department C4-5 Relation management C4-6 Operation associate
Case 5	C5, founded in Jordan in 2015, aggregates scholarships, jobs, and training for over 2.5 million youth across nine MENA countries via a pure online platform with 20 employees and 100 000 daily visits. While this digital scale disrupts educational elitism, its B2C model and lack of physical presence risk shallow engagement and reliance on partners.	C5-1 Founder & CEO; C5-2 COO C5-3 CTO; C5-4 Call centre C5-5 Account manager; C5-6 Project manager C5-7 Team leader
Case 6	C6, founded in Jordan in 2016, digitizes LPG distribution across six countries with real-time order tracking and a hybrid online-offline model tailored to local contexts. Its unverified fuel-waste reduction claims and reliance on incumbent suppliers reveal how asset-light “green” branding can obscure true sustainability impact.	C6-1 CEO & co founder; C6-2 Customer service and order manager C6-3 Customer department in Jordan & Saudi Arabia C6-4 Country manager; C6-5 General auditor C6-6 Team leader; C6-7 Customer care
Case 7	C7, founded in Jordan in 2017, leverages big data to provide medical tourism, telemedicine, and a provider directory across six MENA countries. Yet, patients often mistake it for the clinician, blaming C7 for care outcomes—revealing that e-health intermediaries, despite tech sophistication and scale, cannot guarantee quality or mitigate clinical risks.	C7-1 Co-founder & CEO; C7-2 COO C7-3 Digital manager; C7-4 Call center C7-5 Account manager C7-6 Regional manager C7-7 COO

3.2. Data collection

Primary data was obtained through conducting in-depth semi-structured interviews with the key SPSMEs informants in different managerial levels who contribute to the process of planning, managing, and innovating their BMs and secondary data was collected from the

published documents related to this study, including web articles and press releases, online SPSMEs reports and websites, Digital Government reports, research proposals, and projects. Our interview guide includes open-ended questions related to the BMs of SPSMEs, the BMI process, and the impact of the factors on the BMI process. All 45 semi-structured interviews were recorded and transcribed (interview durations sum is 1800 min in total). We reach theoretical saturation “when the iteration between theory and data only provides incremental improvement to the theory” (Ravenswood, 2011, p. 681). While Cases 1, 2, 3, and 4 provided repetitive information in the sixth interview, Cases 5, 6, and 7 reached saturation in the seventh interview. We proceeded with the data analysis in parallel and overlap with the data collection: this iterative process employed by taking field notes to provide a starting point to analyze the data and benefits from the flexible nature of the data collection process (Eisenhardt, 1989).

3.3. Data coding and analysis

We conducted the analysis following the recommendation for multiple case theory building of Eisenhardt (1989) as the *method* and integrated it with the Gioia method as a *technique* (Gioia et al., 2013). Enabling by an Abductive reasoning, we rely on prior research to guide the data analysis “for discovery without reinventing the well-ridden wheels” (Gioia et al., 2013, p.21). This was essential part of our data analysis to “systematically move from the raw data to the theoretical interpretation” (Stadler and Van Wassenhove, 2016, p. 663) as abductive enables us to switch continuously and the interplay between the adapted theories and data, leaving room for creativity to explore new knowledge emerged from data and considered the existing theories. This led to the construction of two theoretical models via four steps. *First*, we began to generate *initial codes* from literature using activity system, dynamic capabilities and business ecosystem perspective as a lens to guide the coding process but not to build relations. *Second*, *within-case analysis* was conducted by engaging in *open coding* (of interviews and support documents for each case) to identify any relevant patterns related to the identified dimensions and to allow any new patterns to emerge for theory building. The collected data was sorted into data incidents by using NVivo 12 to record, group and regroup data segments via nodes (codes). As the research progresses, the researcher could start seeking internal consistency by analyzing data incidents' similarities or differences (to avoid overlap between codes) by engaging in several iterations to move from mass descriptive codes (*data incidents*) into *first-order codes* (Gioia et al., 2013). *Third*, after finishing the within-case analysis, we then compared data incidents for cross-case analysis as suggested by Eisenhardt (1989). This comparative analysis helps us search for similarities and differences between cases under investigation (Bryman, 2016), see appendix A. Based on the question ‘What is going on here? theoretically, several iterations were conducted to organize and regroup the first-order codes into second-order themes cross-cases (Gioia et al., 2013). Once no new second-order themes (concepts) emerged from the data (Eisenhardt, 1989), the second-order themes were distilled into second-order aggregations to generate overarching theoretical dimensions that helped explain the investigated phenomena and make sense of SPSMEs. After the first-order codes, second-order themes, and aggregate dimensions were finalized and identified, the data structure for each research question was built.

Fig. 1 demonstrates how we moved from data incidents to first-order codes, second-order themes, and aggregate dimensions in two parts. Part 1 captures the dynamic process of SPSMEs' BMI, which corresponds to the first research question. Drawing on the dynamic capabilities perspective (Teece, 2007) and the view of BMI as an activity system (Zott and Amit, 2010), we regrouped first-order codes indicating sensing capabilities under ‘Recognising opportunities in digital network’ and ‘Evaluating capabilities gap in digital network’. Moreover, we identified one element related to the value logic linking digital activities in the BM, namely ‘Adapting Digital Theme’. Finally, we regrouped all codes

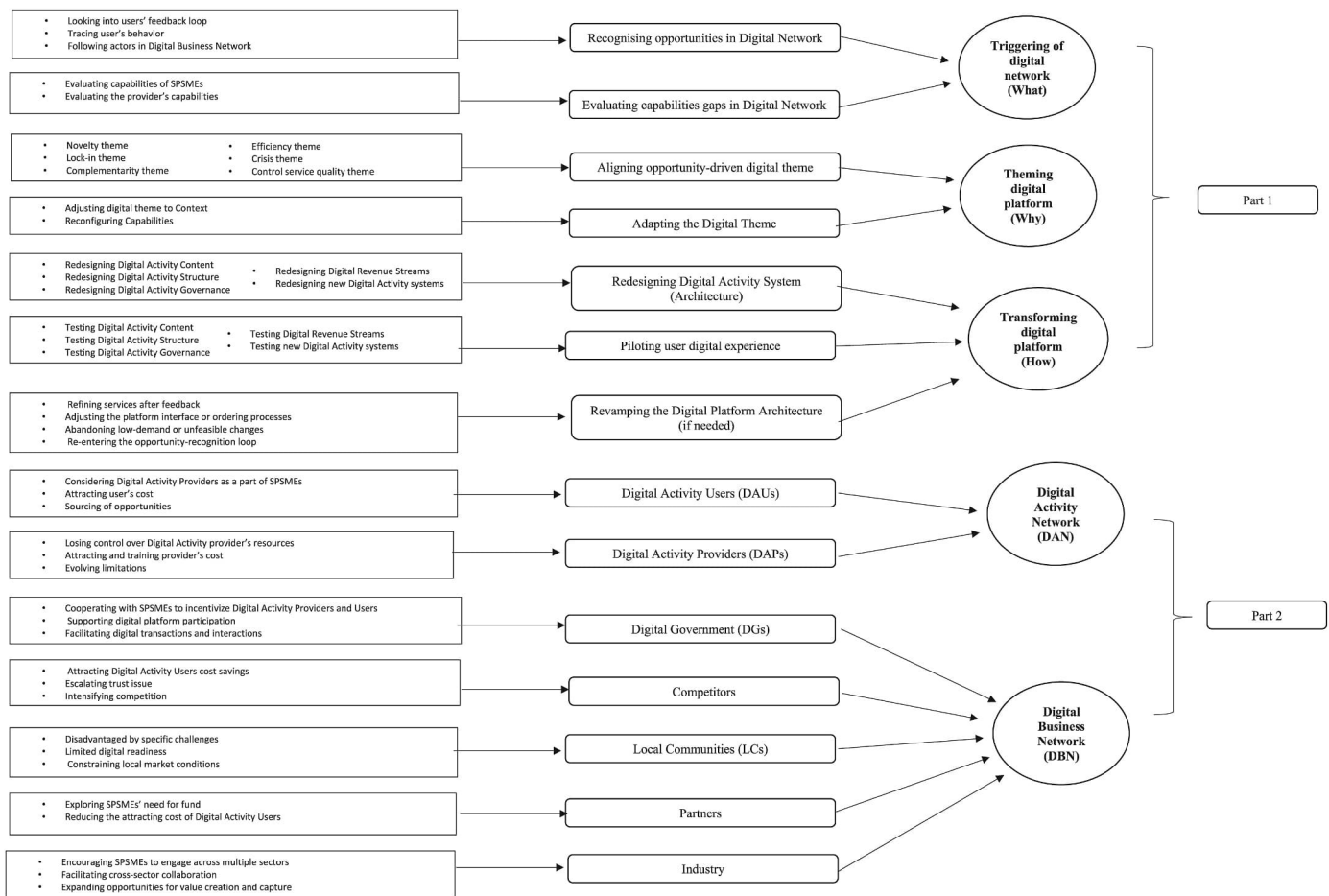


Fig. 1. Data structure for the dynamic process of BMI of SPSMEs and the factors in the Business ecosystem (BE) of SPSMEs and their effects in BMI.

indicating transforming and changing activities in the BM into three themes: 'Redesigning digital activity system', 'Piloting user digital experience', and 'Revamping the Digital Platform (DP) architecture'.

Part 2 captures the factors in the business ecosystem that affect the BMI process of SPSMEs, which corresponds to the second research question. Drawing on the business ecosystem perspective and insights from network theory, we regrouped the codes according to actors and networks. All first-order codes indicating an impact on the BMI process of SPSMEs were grouped under the relevant actors. For example, Digital Activity Users (DAUs) have three factors: 'considering Digital Activity Providers (DAPs) as a part of SPSMEs', 'Attracting user's cost', and 'Sourcing of opportunities'. Thus, each actor has different factors affecting the innovation process.

To make the aggregation logic more explicit, we treated first-order concepts as concrete empirical activities, while second-order themes capture broader processual functions. For example, for the Transforming dimension, first-order concepts such as testing digital activity content, testing digital activity structure, testing digital activity governance, testing digital revenue streams, and testing new digital activity systems were not treated as separate second-order themes. They were grouped under 'Piloting user digital experience' because they all captured temporary trials through which SPSMEs assessed user responses before full implementation. Similarly, first-order concepts referring to subsequent modification, refinement, scaling, or abandonment of tested changes were grouped under 'Revamping the Digital Platform architecture' because they captured post-pilot adjustments to the redesigned activity system. Thus, the aggregation from first-order to second-order concepts was based on the function each activity performed in the transformation process, rather than on surface similarity in labels.

Finally, we synthesized these themes into two theoretical models. By iterating between empirical evidence and theory, we moved beyond static categories to a dynamic representation of the BMI process. Also, [Appendix B](#) provides a consolidated set of illustrative quotations supporting the 3Ts process model and the ecosystem mechanisms, allowing the main findings section to focus on the analytical patterns rather than listing every quotation in sequence.

While [Fig. 1](#) shows how the analysis moved from raw data to aggregate dimensions, [Fig. 2](#) (presented next) presents the substantive process model of BMI that emerged from that analysis.

4. Findings

In this section, we first introduce three stages of the dynamic process of BMI SPSMEs and their underpinning steps and mechanisms. Then, we map the SPSMEs' Business Ecosystem networks. Following this, we further discuss how different actors in the Business Ecosystem affect the BMI of SPSMEs.

4.1. The dynamic BMI process of SPSMEs (stages, steps, and mechanisms)

In principle, the *BMI process of SPSMEs* refers to the changes and transformation in the digital activity system of SPSMEs that are triggered by opportunities in the digital network to create desired value. Our data revealed that SPSMEs engage in BMI through three linked stages, which we label the 3Ts model: Triggering, Theming, and Transforming.

[Fig. 2](#) presents the cross-case process model emerging from the seven

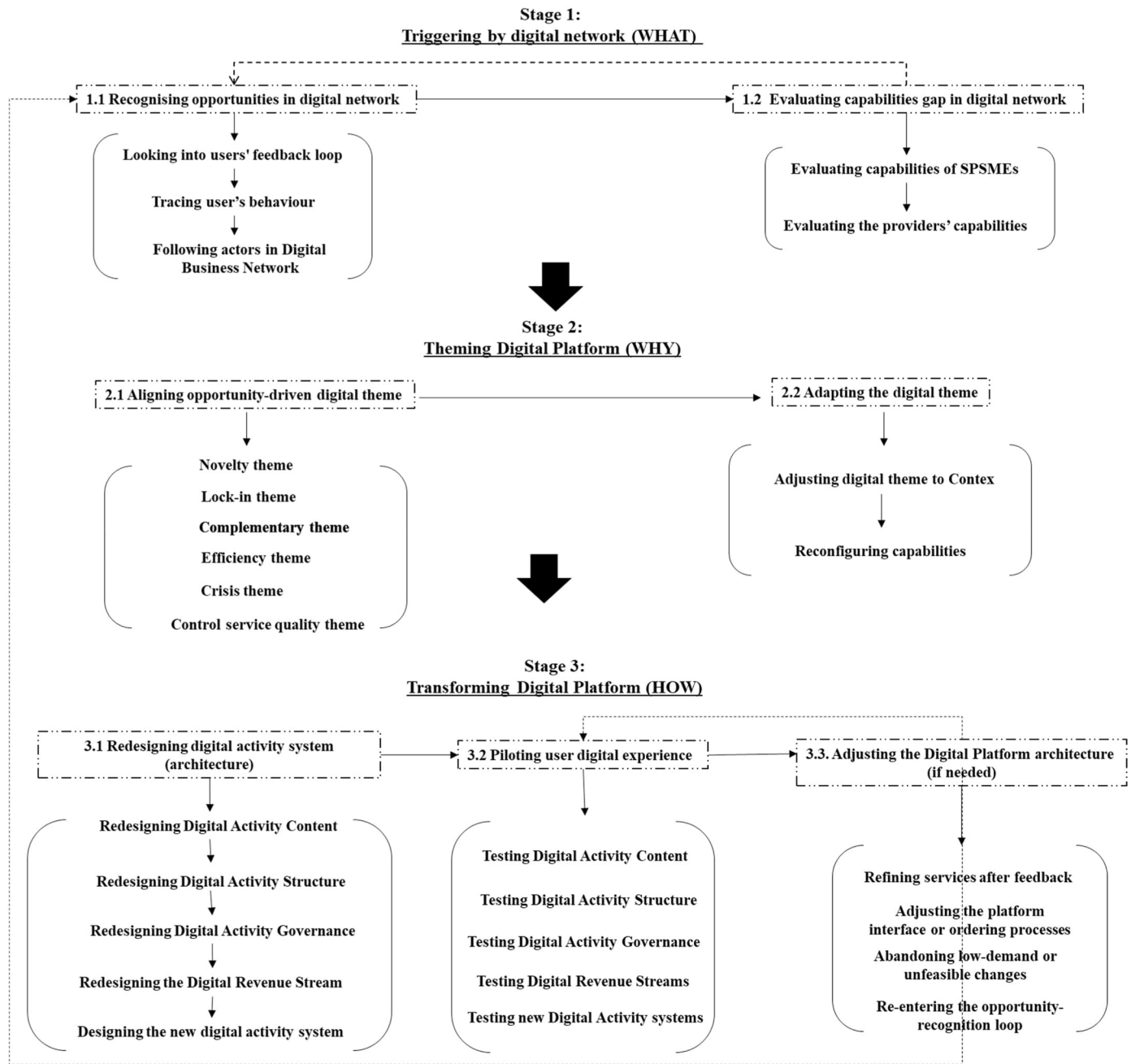


Fig. 2. The 3Ts process model of business model innovation in SPSMEs.

SPSME cases. Rather than depicting a linear checklist of stages, it visualises the recurrent process architecture through which BMI unfolded across the cases. More specifically, the figure shows how BMI begins when opportunities or tensions become visible in the digital network (Triggering), moves through the selection of a dominant value logic that frames the response (Theming), and proceeds through iterative redesign, piloting, and adjustment of the digital activity system (Transforming). The model is cross-case and processual: the cases do not exhibit identical events, but they do reveal the same underlying sequence.

Fig. 2 should therefore be read as a process model of BMI rather than as a summary of isolated findings. The arrows indicate analytical progression across the three stages, while the recursive movement reflects the fact that outcomes emerging during transformation can generate new opportunities, reveal further constraints, and reactivate Triggering. In this sense, the model links opportunity recognition, value-logic

selection, and activity-system reconfiguration into one connected explanatory sequence. Appendix A ¹ provides the cross-case evidence underpinning this process model, and Appendix B summarizes illustrative quotations that underpin the coding structure and provide further empirical support for the Triggering, Theming, and Transforming stages, as well as the ecosystem mechanisms influencing BMI.

4.1.1. Stage 1: triggering (spotting opportunities and assessing capabilities)

This stage refers to the opportunities and threats in digital networks that stimulate SPSMEs to initiate BMI. This stage involves two steps: 1) recognising opportunities in digital networks, where SPSMEs identify and

¹ Appendix A complements Fig. 2 by showing that, despite case-level variation in sector, maturity, and market conditions, similar process dynamics recur across the cases in relation to Triggering, Theming, and Transforming.

discover opportunities emerging in the Business Ecosystem by drawing directly on their platform's real-time data flows, user feedback systems, and ecosystem monitoring, rather than conducting discrete market-research exercises outside the platform, and 2) *assessing capabilities gaps in the digital network* (to respond to the recognised opportunities, SPSMEs evaluate the ability to exploit opportunities in the digital network and identify any capabilities gaps), (see Table 2). While the data revealed that SPSMEs recognise opportunities in *three mechanisms*:

- (1) **Looking into users' feedback loop** as the Operation Associate of Case 4 stated: "With our DP, we instantly capture and act on user feedback—using those insights to guide every improvement and new service by pinpointing and solving user pain points." C4-2.
- (2) **Tracing users' behavior** as one informant illustrated: "With detailed user profiles, we track behaviors in West Amman to spot innovation opportunities—identifying, for example, the need for a night-shift service" C6-2

Table 2

The mechanisms in Triggering by digital network (Stage 1).

Steps	Mechanisms	Representative data
1. Recognising opportunities	1) Looking into users' feedback loop: SPSMEs are closer to the customer than before through reviewing users' feedback and rating systems, and digital surveys	We have a rating system and feedback system. You can review the services; you can like or unlike that service, [...] We have a team to check the users' feedback and reviews [...] this team aims to spot new opportunities. C5-1
	2) Tracing user's behaviour: Instead of traditional market research, SPSMEs leverage their DP database to access timely, comprehensive user data	By looking at our data, we can know how many users we have, how many orders and new customers, and how we can get this information daily [...]. We do not need to do anything to study the users. In one click, we can find the types of items that users order or for example, we can trace their routines for a period [...] Understanding the users' behaviours are vital for our evolution process [...] This directs us to the right innovation that comes from our users. C3-3
	3) Following actors in the Business Ecosystem: SPSMEs continuously monitor business-ecosystem actors; shifts in competitors' business models and regulatory updates can present both opportunities and threats	Our competitors can be a source of opportunity. For example, we trace our competitors' BMs. We can see what they do well and what they do unwell so that we can do it better than them. We also follow their users' reviews to see their weaknesses. C1-1.
2. Assessing capabilities gaps	1) Evaluating capabilities of SPSMEs: Strong SPSMEs' capabilities increase their ability to exploit the recognised opportunity, and weak SPSMEs' capabilities limit their ability to exploit the recognised opportunity	Our platform is unlike anything the industry has seen because we put the needs of our users first [...] we provide quality and affordable healthcare in one single platform that enables us to adapt the changes and exploit new opportunities such as medical tourism. C7-5.
	2) Evaluating the providers' capabilities: the providers' capabilities are critical to enable SPSMEs to exploit the recognised opportunity.	We evaluate our riders' capabilities [providers' capabilities] as a part of our innovation process. We need their capabilities to create value. For example, as we connect between the riders and those who need a delivery, such as restaurants [users], if we want to add a new service such as on-demand delivery for individuals, we want to see if our riders can do it. C3-1.

- (3) **Following actors in Digital Business Network** as one informant stated: "Relying only on our DP to find and spot opportunities is excellent but not enough. We monitor government policies and competitor models to unlock exceptional opportunities and transform our business model" C2-3.

In the second step, the SPSMEs evaluate capabilities in two evaluation mechanisms:

- (1) **Evaluating capabilities of SPSMEs** as one informant explained: "Although identifying opportunities is crucial, our startup's limited financial and technological resources require that any BM expansion be predicated on core capabilities" C1-2.
- (2) **Evaluating the provider's capabilities.** For example, one informant from C4 which connects between dry cleaning shops and users illustrated: "Providers have capacity constraints: they can only accept a limited number of orders without adding laundries, since each runs its own business. As an ancillary revenue stream, these limits prevent us from launching new services" C4-2

Interestingly, the data reveals that provider capacity critically shapes SPSMEs' themes and digital-activity adjustments in the Theming and Transforming DP phases. Surprisingly, to survive, SPSMEs pursue opportunities regardless of provider adaptability [this is discussed further in the next stage].

Taken together, the Triggering stage shows that SPSMEs do not initiate BMI simply because an opportunity exists. Opportunities first become visible through digital signals, user feedback and ecosystem monitoring, but they only become actionable when SPSMEs assess them against their own financial and digital capabilities and the readiness of providers in the digital network. Triggering is therefore both an opportunity-recognition process and a constraint-assessment process, which is particularly important in developing economies where ecosystem and provider readiness are uneven.

4.1.2. Stage 2: theming (defining the value logic)

Theming refers to the process by which SPSMEs define the value logic they expect to capture from exploiting recognised opportunities in light of their existing capabilities. It includes two steps: 1) *aligning opportunity-driven digital theme*; and 2) *adapting the digital theme*. Across the cases, the data showed that firms did not typically develop multiple alternative themes before selecting one. Instead, they tended to align a specific value logic with the opportunity or constraint they sought to address. In this sense, the adapted theme acted as a roadmap for the subsequent transforming stage. Interestingly, the data revealed that SPSMEs first aligned opportunity-driven digital theme through one or more from the following six mechanisms (see Table 3) that matched the opportunity they sought to exploit. Across the cases, six themes were evident in the data: 1) novelty, 2) lock-in, 3) complementarity, 4) efficiency, 5) crisis, and 6) control service quality.

Novelty theme. In some cases, SPSMEs framed BMI around creating a business model that was visibly distinct from existing market offerings. As one informant explained: "The most important thing to our company is to make our BM novel and different in the market. [...] we make sure that we add more value for our users [...] this is why we added more services that superior our value for extra money" (C4-1). This evidence indicates that novelty, in this context, was expressed through service additions intended to differentiate the platform and increase user value.

Lock-in theme. The data also showed that some SPSMEs adapted a value logic aimed at retaining both users [on the demand-side] and providers [on the supply side] in their digital platforms. Interestingly, the most common view emerging from the data analysis was that SPSMEs need more registered providers and users, not only visitors. Indeed, all SPSMEs adapted the digital lock-in theme at some point in their BMI to make sure they did not lose users or providers. For example, one informant explained: "To lock-in our users to stay with us, we changed

Table 3
The mechanisms in Theming digital platform (Stage 2).

Steps	Mechanisms	Representative data
Aligning opportunity-driven digital theme	1) Novelty theme SPSMEs adapt this theme to differentiate their Digital BMs to be novel	<i>We are a pioneer medical network for e-health and medical tourism in the MENA region. C7-1.</i>
	2) Lock-in theme SPSMEs adapt this theme to keep their users and providers locked in their DPs	<i>The reasons behind all of these changes are developing the platform to increase the users and providers on both sides and satisfying them to gain profit. C6-1.</i>
	3) Complementary theme SPSMEs adapt this theme to support the main services.	<i>We added cash on delivery to facilitate our main services due to the trust issue of users in Jordan [...] they [users] do not trust the online payment C1-1.</i>
	4) Efficiency theme SPSMEs adapt this theme to reduce the cost of users and providers.	<i>We enforced innovating our BM for several factors, but the main factor is cost control. C2-5.</i>
	5) Survival theme OR Crisis theme SPSMEs adapt this theme to survive in highly dynamic situations requiring high flexibility to rapidly change their digital BMs.	<i>The pandemic cut our shirt volume from 50% to 10% of total garments, leaving mainly suits, blouses, skirts, and pants. To offset this, we launched low-priced bed linens—sheets, duvet covers, pillowcases, and towels—for home customers. As people washed more often while staying in, this new line helped recoup much of our lost workwear revenue. C4-5.</i>
	6) Control service quality theme SPSMEs adapt this theme to reduce the power of providers by acquiring the providers' resources or employing them.	<i>By relying on providers as independent from our company, our BM cannot provide high quality as we cannot control the service provided because we only connect these services with users. [...] To control our quality, there was only one option: acquiring the existing providers and paying for them to control their performance and, therefore, our service quality. C2-1.</i>
Adapting the digital theme	1) Adjusting digital theme to Context SPSMEs adapt this mechanism to refine their chosen theme in response to external conditions such as regulations, cultural barriers, or market shocks.	<i>One problem is the supply and demand. Once the number of providers rapidly increased with no increase in demand due to cultural barriers, there was no profit and costs increased. We adjusted our efficiency theme by introducing localized pricing models to reach the break-even point. (C1-4)</i>
	2) Reconfiguring Capabilities SPSMEs adapt this mechanism by reconfiguring internal resources and practices, such as retraining providers, reallocating staff, or embedding new technologies.	<i>Our model was initially 100% asset-light with no owned drivers or vehicles, but without direct oversight we couldn't maintain consistent service quality. We reconfigured our control service quality theme by embedding monitoring tools and rating systems to strengthen provider performance. (C3-1)</i>

our platform design and expanded our home services to be more comprehensive, driving our users to use the platform for all their needs in terms of painting, security system, and [...] The accepted providers engaged with training courses and workshops, we bought their uniforms and other equipment, all these are cost on us, so we classify providers based on areas to make sure they stay with us" C2-4.

Complementarity theme. Another recurring pattern involved adding supplementary features or support services around the core offering. In Case 2, this took the form of a call centre and provider training to facilitate transactions in a low-digital-maturity context. For instance, Case 5 added a complementary service in their Digital Activity Content to support the main services, as one informant explained: "We have added more services to support our users, as we found a gap in their skills that prevent them from benefiting from our main services such as scholarships [...] which drive us to add new services to improve their capabilities and therefore overcome this challenge [that users cannot use our services]" C5-2. Together, these cases show that complementarity was enacted through additions to content, structure, and governance rather than through a single type of change.

Efficiency theme. In other cases, the value logic was shaped by pressures to restore economic viability. As one informant explained: "One problem is the supply and demand [...] When we start, the provider's number is good, and the demand is good. Once the number of providers rapidly increased with no increase on-demand as culture barriers (i.e., the providers contact directly with our users) so there is no profit and the cost increase [...] we changed to reach the break-even point" C1-4. Here, BMI was oriented toward managing acquisition costs and correcting mismatches between provider growth and user demand.

Crisis theme. The data also revealed a crisis-oriented value logic in cases where firms faced sudden disruption, particularly during crisis (e. g., Covid-19). While crisis can threaten BMs, it can create new opportunities that require a quick response and flexibility to change BMs. Indeed, not all SPSMEs can quickly and flexibly change their BMs [or manage the existing capabilities]. For example, some SPSMEs exploited the recognised opportunity during the pandemic through the crisis theme by introducing new products or services to survive, as one informant expressed: "Obviously, there were many challenges [...] It was because we were in the middle of a pandemic, our biggest revenue generators, in terms of garments, our suits, our workwear and our shirts, and we were no longer doing those. So, we had to think of something different that would help us gain that market share back or build that place [...] We had to very reactive and very quick in our response" C4-3.

Control service quality theme. A further pattern in the data was the move toward greater control over offline service delivery. Here, firms sought to reduce their dependence on self-employed providers and regain influence over service quality. More specifically, they transfer from pure sharing economy model to less sharing economy model. While SPSMEs with pure sharing economy model relies on providers [self-employed] to provide their services without owning these resources or employing them [providers], SPSMEs with less sharing economy means that SPSMEs start employing their providers [self-employed providers in their digital platforms [forward integration] or owning the provider's resources [backward integration]. Accordingly, SPSMEs with less sharing economy model have both employed and self-employed providers. The findings revealed that SPSMEs move to less sharing economy model because they have no control over the service provider. Interestingly, this pattern was especially visible where recurring service failures or weak oversight of providers undermined platform performance.

Overall, the Theming stage shows that SPSMEs use value logics to give direction to BMI. The six themes identified in the data should not be read as a disconnected list of alternatives, but as different ways in which firms translate recognised opportunities or constraints into a guiding logic for redesigning their business models. In this sense, Theming links the opportunity-recognition work of Triggering with the activity-system changes that follow in Transforming.

After aligning a theme to an opportunity or constraint, SPSMEs adapt it further to ensure it remains viable and actionable. This adaptation process involves refining the theme in response to evolving conditions, feedback, and resource realities. The data revealed that this step includes two mechanisms: 1) *Adjusting digital theme to Context*. The data revealed that SPSMEs often refined their chosen theme to fit external conditions such as regulatory changes, cultural barriers, or sudden market shocks. For example, in Case 1, the efficiency theme was adjusted by introducing localized pricing models to overcome mismatches between provider growth and user demand (C1-4). This evidence indicates that adjusting to context was enacted through modifications that ensured the theme remained relevant and resilient in dynamic environments. 2) *Reconfiguring Capabilities*. Another recurring pattern involved adapting the theme by reconfiguring internal resources and capabilities. Firms reallocated staff, retrained providers, or embedded new technologies to strengthen their ability to deliver on the chosen theme. For instance, in Case 3, the control service quality theme was reconfigured by adding digital monitoring tools and provider rating systems to improve oversight (C3-1). Together, these cases show that reconfiguring capabilities was enacted *through changes in resources and practices that aligned internal capacity with external demands*.

4.1.3. Stage 3: transforming (reconfiguring and iterating)

Our analysis shows that this stage captures the iterative changes in the design of the digital activity system of SPSMEs. The data reveals that transforming digital business models in SPSMEs extends beyond redesigning core business model elements alone. Instead, this stage involves **three** interrelated steps (as illustrated in Table 4):

- (1) **Redesigning the digital activity system** refers to the actual changes in the digital BMs of SPSMEs: in terms of what they provide, how it is provided, who provides it, and the source of revenue. The data reveals that this redesign is not freestanding: it is always oriented toward exploiting the opportunity recognised in Stage 1, and its specific form is shaped by the value logic (theme) adopted in Stage 2. The mechanisms through which SPSMEs redesign their digital activity system are consistent across cases and fall into five categories:

1) redesigning Digital Activity Content (DAC). It is the bundle of digital service content that enables SPSMEs to create value. DAC appears as fully online services or online services to match offline services. Interestingly, the number of DAC that SPSMEs can add is endless as all 45 informants from seven cases show easily transform in DAC. For example, “we began with maintenance; now we provide transport furnishing, winch services, electrical and sanitary installations, satellite TV tech, water tankers, and home and office cleaning” C1-4; 2) **redesigning Digital Activity Structure (DAS)**. A DAS specifies the digital connections among SPSMEs' service offerings, orchestrating provider–user exchanges to create and capture value. SPSMEs redesign their DAS when the existing connection architecture between providers and users does not support the new value logic adopted in the Theming stage. For example, one manager recounted how they overhauled the driver interface: “We redesigned the driver app so that restaurant orders automatically route to drivers - once they receive and accept an order, they pick it up and deliver the food.” C3-4; 3) **redesigning Digital Activity Governance (DAG)**. Our findings show that redesigning DAG involves expanding or reconfiguring the provider network responsible for delivering Digital Activity Content. Adding DAG expands the pool of self-employed providers under a pure sharing-economy model. Transforming DAG, by contrast, involves vertical integration, either forward (employing providers) or backward (acquiring assets), to regain control over service quality. For example,

Table 4

The mechanisms in Transforming the digital platform (Stage 3).

Steps	Mechanisms	Representative data
1 Redesigning digital activity system (architecture)	1) Redesigning Digital Activity Content Changing of digital services.	We have added more new delivery services. For example, recently, we added personalized home delivery [...]. This enables an individual to book a delivery to deliver personal staff to another individual. C3-1.
	2) Redesigning Digital Activity System Adding more DP connections.	We built separate portals for each provider type (e.g., doctors, hospitals). After registering and creating a profile, providers can list services, receive referrals and treatment requests, and use all tailored features. C7-4
	3) Redesigning Digital Activity Governance Changing who does the services.	When we expanded to Saudi Arabia, we added new providers, such as the gas driver because the gas shops in the Saudi market did not have drivers to deliver gas cylinders to people and businesses. C6-6.
	4) Redesigning the Digital Revenue Stream Changing the source of revenue.	We used to provide our DP for free for both users and providers. Now, our providers pay a fee - monthly or by order C7-5
	5) Designing the new digital activity system Changing in all digital activity system elements.	We have radically changed our BM from connecting individuals of users and providers to a new BM in a new industry. [...] We were in the services sector in Jordan, and now we provide DPs solutions to new DPs and start-ups [...]. C1-1.
2 Piloting user digital experience	1) Testing Digital Activity Content; 2) Testing Digital Activity Structure; 3) Testing Digital Activity Governance; 4) Testing Digital Revenue Streams; and 5) Testing new Digital Activity systems. SPSMEs test the changes in digital activity system design by utilizing DPs' database to trace users' reactions/behaviour.	We test new services in the market and, if they're not attractive or feasible, we remove them and try something else. For instance, we added a night shift in Amman, but some areas had no demand, making it costly. So, we cancelled the night shift there and focused on high-demand areas C6-1.
	3 Revamping the Digital Platform architecture	Keep updated with our providers and users drive us to continuously improve our services and offer new services to meet their needs and demands [...] we have to keep moving we cannot settle or stop innovating and satisfy with what we have [...] being very good is not good enough we should strive for excellence C7-2

one informant explained: “Our model was initially 100% asset-light with no owned drivers or vehicles, but without direct oversight we couldn't maintain consistent service quality.” C3-1; 4) **redesigning Digital Revenue Stream (DRS)**. The data reveals a fourth element of the digital activity system that SPSMEs consistently redesign as part of their BMI: the

revenue stream architecture. Across all seven cases, informants described changes to how and from whom the platform extracted revenue as discrete, deliberate acts of BM redesign (separable from changes to content, structure, or governance). Critically, two primary DRS configurations emerged from the data: provider-based streams (fees, commissions, or subscriptions charged to the service providers) and user-based streams (fees or subscriptions charged to end users). The provider-based DRS is illustrated by C1, whose platform initially charged providers a 10% fee per transaction but later moved to a fixed monthly subscription of 30 JOD (C1-3). The user-based DRS is illustrated by C6, whose platform was free at launch and introduced a 1 JOD monthly subscription per user after two years of operation (C6-2). In several cases, firms operated both streams simultaneously and redesigned the balance between them as market conditions changed; and 5) *Designing New digital activity system*. The data shows that in the most extensive form of transformation, SPSMEs do not modify their existing activity system incrementally but architect an entirely new one (i.e., entering a different market, targeting a different user base, or operating under a fundamentally different value logic). This is the most resource-intensive and strategically consequential form of redesign, as it requires the SPSME to build new provider networks, navigate new regulatory environments, and establish new user relationships from scratch. For example, one co-founder reflected: *“The myth that a fully digital platform can expand effortlessly proved false. Even without hiring local staff, we still had to navigate different regulators, source and vet suppliers, and establish a minimal physical presence. That’s why we chose to enter a market (new BM) with few competitors to ease our expansion”* (C1-1).

- (2) **Piloting digital user experience** means that SPSMEs test the new configuration of the digital activity system by tracing the digital experience of their users. It includes five mechanisms: 1) testing Digital Activity Content; 2) testing Digital Activity Structure; 3) testing Digital Activity Governance; 4) testing Digital Revenue Streams; and 5) testing new Digital Activity systems. We found that SPSMEs benefit from their digital platforms database to trial the new transformation or configuration of BMs in order to explore the user's digital experience reactions on these innovations. Interestingly, SPSMEs introduce the change temporarily to collect data before introducing the whole transformation. They utilize their digital platforms [digital advantage] to test their digital activity system and track users' reactions for endless trials by relying on the timely data from their digital platforms database, as one informant indicated: *We tested a new service temporarily before we launched it [...]. We looked at our users' base to see the reaction of our users, if they like the new service or not. For example, before we added the cheaper bedsheets and towels services [clean and delivered bedsheets and towels], we introduced it to our high-spending users to see their reaction. [...] Over that period, which was a month and a half, we got six weeks of data in our DP that reflect the behavior of our users [...] based on our DP, this service increased user's bills on average by 30%.* C4-2.
- (3) **Revamping the Digital Platform architecture** means that SPSMEs adjust their digital activity system based on the user's digital experience to improve it. The data reveals that SPSMEs adjust their digital platforms in four mechanisms: 1) Refining services after feedback; 2) Adjusting the platform interface or ordering processes; 3) Abandoning low-demand or unfeasible changes; and 4) Re-entering the opportunity-recognition loop which refers to the iterative changes in the digital activity system of SPSMEs. The analysis revealed that SPSMEs could easily stop the new innovation and ignore it [due to low demand or unfeasibility of this redesign]. Importantly, in this step, SPSMEs consider any new opportunity that can emerge during the innovation process [recognising opportunity in digital network]. More interestingly, they are flexible to back and forth during this dynamic process between adjusting and recognising steps. For example, one informant

stated: *We still have to modify our model. So the model modification is an ongoing process. We have to always keep up with things as there will always be new demands or new opportunities [...] even during our innovation, such as new services. [...] Your model should constantly be changing, especially in our technology sector. New services will come up, you know, young people will be interested in different things.* C5-1.

These three steps show that Transforming is not a single act of implementation. SPSMEs first redesign elements of the digital activity system, then test the revised configuration through user experience, and finally adjust, scale, abandon or rework the platform architecture in response to what they learn. Transforming is therefore iterative and recursive: outcomes from piloting and revamping can generate new opportunities or expose further constraints, thereby reconnecting the process back to Triggering.

Overall, the cross-case evidence underpinning these three stages is summarised in [Appendix A](#).

4.2. The business ecosystem of SPSMEs (networks and actors)

In principle, the Business Ecosystem of SPSMEs comprises an economic network of actors around SPSMEs that interact with each other through collaboration and competition relationships which affect the evolution of SPSMEs, where the analysis revealed two types of networks that constitute the ecosystem: Digital Activity Network (DAN); and Digital Business Network (DBN). While the *Digital Activity Network* is a network of actors that SPSMEs rely on them to create and deliver value [SPSMEs cannot create value without these actors], the *Digital Business Network* is a network of actors who indirectly affect the creation and deliver value in SPSMEs' BMs [these actors are not part of SPSMEs' BMs], see [Fig. 3](#).

4.2.1. The Digital Activity Network

It comprises two ecosystem actors directly involved in SPSMEs' digital value-creation activities: 1) *Digital Activity Users* are individuals

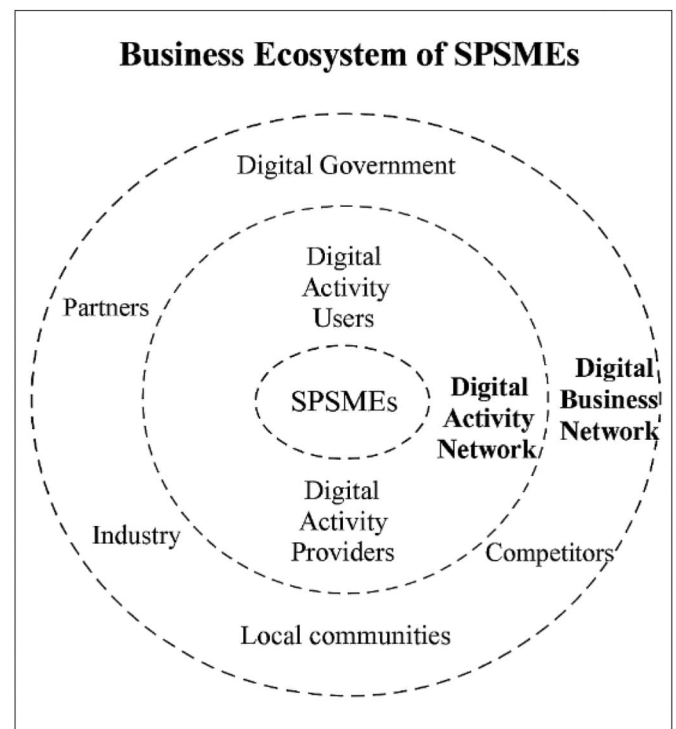


Fig. 3. Actors in Business Ecosystem's networks.

or organizations that join SPSMEs to tap into shared resources and services supplied by DAP, fulfilling their needs and solving their problems. We found that DAUs are the most important actor in the business ecosystem of SPSMEs to create value and drive BMI: “While every actor in the ecosystem matters, customers are paramount, serving as our platform’s key assets. Most of our innovations and transformations focus on enhancing the digital customer experience by allowing users to choose service type, time, location, quantity, and additional features to drive acquisition, satisfaction, and profitability. Ultimately, as a digital platform, our providers solve customer issues such as fuel shortages and delivery delays” C6-1.

2) **Digital Activity Providers** who share resources, services, and profits with SPSMEs to engage Digital Activity Users.

4.2.2. The Digital Business Network

It comprises five ecosystem actors outside direct value creation in SPSMEs’ digital activities:

1) **Digital Governments** [are government ministries spearheading national digital transformation and overseeing SPSME operations]. 2) **competitors** [are firms, sharing-economy or otherwise, offering services similar or substitute to those of SPSMEs]. 3) **Local communities** [are individuals in the same city or village sharing beliefs, economic status, and needs]. 4) **partners** [are businesses, including investors, in profit or non-profit agreements with SPSMEs, providing mutual benefits]. 5) **industry** [refers to companies within a sector offering similar activities].

We found that each actor has specific factors that drive the change process of SPSMEs’ BMs.

This distinction between the Digital Activity Network and the Digital Business Network is important because ecosystem influence is not uniform. Actors in the Digital Activity Network shape BMI directly because they participate in value creation and service delivery, while actors in the Digital Business Network shape BMI more indirectly by influencing legitimacy, expansion, regulation, partnerships and market conditions. The following section therefore explains not only which actors matter, but how their influence enters and redirects the BMI process.

4.3. The effect of different actors in business Ecosystem’s networks on BMI of SPSMEs (factors and mechanisms)

The empirical data revealed that each actor in both networks; Digital Activity Network and Digital Business Network has unique factors that drive BMI process of SPSMEs in several mechanisms. Put differently, the factor is the drivers for innovating BMs and the mechanism is the way that this factor changes the BMs which is explained across the three

stages of BMI. As certain factors drive SPSMEs to adapt same mechanisms, we first introduce the mechanisms then outline the factors for each actor; see Table 5.

4.3.1. Factors of Digital Activity Network’s actors: users and providers

Table 6 (part 1) 2 illustrates two key points; the main factors that drive BMI and how the innovation occurs through identifying the mechanisms for both Digital Activity Users and Digital Activity Providers.

Factors of Digital Activity Users: Digital Activity Users could drive the innovative process of SPSMEs’ BMs in three factors: 1) considering Digital Activity Providers (i.e., the service provider) as a part of SPSMEs. “Users perceive our service providers as our own employees, so we bear full responsibility for any subpar work—harming our reputation and finances. For example, a \$50 fridge repair (just \$5 profit) failed, triggering a \$200 refund and, with training and customer-acquisition costs, about \$500 in total losses” C1-1. 2) attracting user’s cost. While the attracting cost of DAUs is very low in UAE, it is very high in Jordan: “Users attracting cost [in Jordan] is extremely high, for example, attracting one customer costs 25\$ and to maintain the customer 25\$, so the customer cost is \$50” C1-1. 3) sourcing of opportunities. “Looking for opportunities, (i.e., launching new services) is done by identifying pain points within our users’ experience. So, we keep an eye on the users’ comments and reviews as most of our innovation opportunities can be found there.” C4-2. These factors affect SPSMEs BMI through five mechanisms (ways); adapting less sharing economy model, internationalizing, enforcing Digital Activity Providers to follow SPSMEs’ quality standard, expanding to C2B model, or/and increasing Digital Activity Users engagement.

Factors of Digital Activity Providers: As SPSMEs connect Digital Activity Providers with Digital Activity Users, SPSMEs cannot create value without accessing to the resources and services of Digital Activity Providers. Three factors of Digital Activity Providers drive the innovation process of SPSMEs’ BMs: 1) losing control over Digital Activity Providers’ resources. “If we wanted to change something and if we believe we could do something better to increase the quality, we did not have that power to change and improve the quality of the actual laundry for our users when the providers control the services” C4-3. 2) attracting and training providers’ cost. “Gas drivers wonder why they can share their profit with us. They deliver [the gas] through personal connections [without the platform]. Indeed, we spent more money to explain the advantage of our platform for providers” C6-1. 3) evolving limitations. “Dependence on providers introduces evolving capacity bottlenecks that ultimately throttle our growth and scalability”. C4-2. These factors put pressure on SPSMEs to innovate their

Table 5

Demonstrate the changes in BMI stages [3Ts model] based on the impact of actors across business ecosystem.

Mechanisms	Illustration	Stage 1 (Triggering)	Stage 2 (Theming)	Stage 3 (Transforming)
1. Adapting less Sharing Economy model	Less SE model means that SPSMEs start employing DAPs [forward integration] or owning the DAPs resources [backward integration]	X	X	X
2. Internationalizing	SPSMEs engage in scaling process to reach international networks	X		X
3. Expanding BMs nationally	SPSMEs expand their BMs into different cities within the country.	X	X	X
4. Enforcing Digital Activity Providers to follow SPSMEs’ quality standard	SPSMEs put strict conditions (i.e., attending training workshops and success in the quality test) to restrict DAPs’ access to DAUs. By doing so, SPSMEs can enforce DAPs to improve their services to access DAUs as DAUs only trust DAPs because they are part of SPSMEs.			X
5. Expanding to the C2B model	SPSMEs expand their model from not only C2C but also C2B		X	X
6. Increasing Digital Activity User engagement	SPSMEs motivate DAUs to review their services by sending follow-up reminders via email, social media accounts (i.e. Facebook and Instagram), and messages. Importantly, SPSMEs are carefully stored and keep the data safe as this data enables them to trace the digital experience of DAUs and the behaviours of DAUs. Indeed, SPSMEs trace the digital experience of DAUs by analysing the DAUs’ reviews and feedback to detect the opportunity.	X		
7. Adding new Digital Activity Content [services]	SPSMEs add new digital services [contents that are not provided before]	X	X	X
8. Adding complementary services	Complementary services refer to services added by SPSMEs as a part of DAS (linkages between contents/services that identify the sequence of creating and delivering values) to support the main SPSMEs’ content.	X	X	X

Table 6

Actors of Business Ecosystem and their factors impact the BMI process.

Actors of Business Ecosystem	Factors (drivers) embedded in this system that affect the BMI process	How SPSMEs innovate (Mechanism)	Representative data
Part 1: Actors in Digital Activity Network (DAN)			
Digital Activity Users	Considering Digital Activity Providers as a part of SPSMEs	Adapting less Sharing Economy model	Our platform—which connects engineers, plumbers, and artisans (e.g., blacksmiths, carpenters) with end-users—relied on registered, self-employed service providers due to limited brand recognition compared to established entities such as Uber. Although Uber's transportation services achieved high demand in Jordan, our analogous maintenance model underperformed. Despite substantial investment to differentiate our business model, customer perceptions remained unchanged, necessitating a shift to directly employed providers. C2-4
		Internationalizing	In Jordan, consumers prefer a single responsible party and view pure peer-to-peer models as too risky. Lacking the resources to shift this mindset, we chose to expand into markets where the sharing economy is already accepted to ensure survival. C6-5
		Enforcing Digital Activity Providers to follow SPSMEs' quality standard	Providers in Jordan's unregulated service sector initially disregarded SPSMEs' quality requirements, as limited traffic—with only two weekly orders at JOD 20—offered insufficient remuneration to meet subsistence needs. Once the platform reached critical mass, rising user demand made compliance profitable, compelling providers to adhere to our quality standards. C2-1.
	Attracting user's cost	Expanding to the C2B model	Originally, our C2C business model imposed high customer-acquisition costs and hindered growth without external funding. We therefore shifted to a C2B model, contracting providers to serve businesses as well as individuals. This change halved acquisition costs through long-term business contracts, yielding more consistent orders and sustainable profits. C1-5.
	Sourcing of opportunities	Increasing Digital Activity User engagement	Our platform evolution is driven by user feedback—whether on laundry operations or app usability. By continuously monitoring comments and reviews, we identify pain points that inform new service launches, as most innovation opportunities emerge directly from users. C4-2.
Digital Activity Providers	Losing control over Digital Activity Providers' resources	Adapting less Sharing Economy model	Riders take breaks during our peak hours (12–3 pm), creating an uncontrollable service gap. To secure sufficient supply, we began directly employing and compensating riders, enabling us to manage their availability and meet user demand. C3-1
	Attracting and training provider's cost	Adapting less Sharing Economy model	Providers often resist adopting SPSMEs' professional standards due to entrenched routines. While a minority adapt and continue, most depart. Training up to 500 independent providers across Amman and other Jordanian cities is costly, since SPSMEs must rent dedicated facilities and hire university professors to teach construction and interior/exterior skills—reflecting their own lack of domain expertise. C1-2.
		Internationalizing	Despite significant investment, local gas providers—shops and delivery vehicles—distrusted us and monopolized the market, prohibiting private-car deliveries. Constrained by legal and cultural barriers, we expanded to Saudi Arabia, partnering with cooperative providers; this pivot yielded greater success than in Jordan. C6-6.
	Evolving limitations	Adapting less Sharing Economy model	As we scaled, providers' fixed capacities became a bottleneck; each laundry prioritized larger clients like Emirates Airline, treating us as a minor revenue source. Without continuously adding more facilities, our order volume was capped, making sustainable growth unattainable. C4-2
		Internationalizing	We failed to grow in Jordan—backward (shops) and forward (vehicles) integration attempts were thwarted by a traditional gas monopoly—so we had to internationalize into less concentrated markets where providers shared gas. C6-5.
Part 2: Actors in Digital Business Network (DBN)			
Digital Governments	Cooperating Digital Government and SPSMEs by motivating DAPs to join SPSMEs	Expanding BMs nationally	Partnering with DG to onboard providers and share resources boosted trust and expanded our provider base across Jordan. We received applications nationwide, extending operations beyond Amman and increasing our user numbers and geographic reach C2-5.
	Cooperating Digital Government and SPSMEs by motivating DAUs to join SPSMEs	Adding new Digital Activity Content [services]	As part of our collaboration with the Digital Ministry, we gained access to novel digital content for Jordanian youth. This enhanced their skills—qualifying them for services like global scholarships—and, backed by a trusted institution, attracted a broader, motivated user base via new platform content. C5-6
	Supporting digital platform participation Facilitating digital transactions and interactions		
Competitors	Attracting DAUs cost savings.	Expanding BMs nationally	We only gain from competitors within the SE model when they boost the sector's image—raising public trust and cutting our cost to attract DAUs. But if their model underperforms (e.g. buggy systems causing order delays), it taints users' perceptions, forcing us to spend extra effort and funds to rebuild DAUs' trust. C2-1.
	Escalating trust issue.	Adapting less Sharing Economy model	DP-sharing companies—though unintentionally—join forces to build sector-wide trust. Yet when competitors with weak business models underdeliver, they erode that trust and hurt our own model. To set ourselves apart, we hired top providers and invested heavily in their training and skill development. C2-2
	Intensifying competition.	Adapting less Sharing Economy model	To mitigate competition in Dubai and Al-Khaimah, we adopted forward vertical integration by recruiting drivers with their own vehicles to serve partner restaurants and pharmacies. This approach tightens service-quality control, differentiates our business model, and erects barriers to imitation. C3-3

(continued on next page)

Table 6 (continued)

Actors of Business Ecosystem	Factors (drivers) embedded in this system that affect the BMI process	How SPSMEs innovate (Mechanism)	Representative data
Local Communities	Disadvantaged by specific challenges Limited digital readiness Constraining local market conditions	Adding complementary services	To address low credit-card adoption (2%) and related trust issues, we introduced cash-on-delivery—payment upon service completion—to allay fraud concerns. We also launched a call-centre to mitigate low digital literacy. These measures doubled usage and enabled our expansion into additional cities. C2-5.
	Exploiting SPSMEs' need for funding	Internationalizing	Despite engaging Jordanian investors, proposals systematically undervalued our digital platform—for instance, one demanded 60% equity for JOD 200 000, despite market valuations supporting a 10% stake. Consequently, we shifted to stronger markets (e.g., Saudi Arabia), where investors provide triple the funding for below 10% equity. C6-6.
Partners	Reducing the attracting cost of Digital Activity Users.	Expanding BMs nationally	We leveraged cost-free partnerships with Zain and Orange, who promoted our platform to their customers. Zain subscribers earn 10 points per JOD recharge, redeemable for gas via our service. This initiative broadened our DAU base across Jordan. C6-5
	Encouraging SPSMEs to engage across multiple sectors Facilitating cross-sector collaboration Expanding opportunities for value creation and capture	Adapting less Sharing Economy model	Despite the benefits of offering multiple services, monitoring varied industries, trends, and regulations proved burdensome. To address this, we narrowed our focus to a single core activity by employing maintenance and cleaning providers into the utility sector. C1-1.
Industry			

BM in two mechanisms; adapting less sharing economy model or/and internationalizing.

4.3.2. Factors of Digital Business Network's actors: others

The Digital Business Network (DBN) influences SPSMEs' BMI through various actors, each contributing distinct factors, see Table 6 part 2.

Factor of Digital Governments: Three factors drive BMI of SPSMEs which are cooperating with SPSMEs to incentivize Digital Activity Providers and Users, supporting digital platform participation, and facilitating digital transactions and interactions leading to national expansion or new digital content creation. *"Digital Government contacted us in order to collaborate with us. They want to regulate the maintenance sector through our platform to support the low-income service providers in the different cities in Jordan, such as Zarqa and Irbid"* C2-1.

Factors of Competitors: Competitors push innovation through three factors: 1) attracting users with cost savings *"Our competitors introduce the idea of SE to more people [users] by spending more money on marketing and attempting to change the culture of non-sharing to more SE"* C6-1. 2) escalating trust issues. Despite competitors can help to reduce the cost of awareness, we found that if competitors have low-quality BMs, they negatively affect other SPSMEs by escalating the trust issue, which increases the cost of rebuilding the trust, as one informant explained: *"If our competitors' BMs are not good enough to satisfy the users and the providers, they reflect the negative attitude and bad experience for users, who put extra effort and money on us to change this attitude and to increase their [DAUs]' trust"* C2-1. 3) intensifying competition. We found that competitors can easily imitate SPSMEs' BMs as they build a simple BM to connect between DAPs and DAUs. *"For example, the order process [book a service] is very simple and straightforward: by three clicks, users can order a driver to deliver a parcel, for example, and the driver [DAPs] will receive the request and accept the order in one click. Therefore, our competitors can imitate our DP and provide exactly the same services"* C3-3. These factors prompting SPSMEs to expand nationally or shift to a less sharing economy model.

Factor of Local Communities. Three factors drive BMI of SPSMEs which are disadvantaged by specific challenges (i.e. weak digital infrastructure and low digital awareness), limited digital readiness, and constraining local market conditions which compel SPSMEs to innovate by adding complementary services tailored to local needs. *"We added a call centre service to overcome the low digital awareness issue. People can order our services by calling us [call centre], we have a call centre team who receive orders and enter it on our system, then select the appropriate provider and book an appointment according to user preferences. [...] we have doubled our number by adding these supportive services, which facilitate our expansion in more cities."* C2-5.

Factors of Partners Two factors drive BMI of SPSMEs: 1) exploiting SPSMEs' funding requirements *"In Jordan the investors exploit the start-up needs for the fund and ask for unreasonable ownership percentage for a small amount of funding. They underestimate our efforts as we do not own the resources [only connect between DAPs and DAUs], so investors in Jordan offer a small amount of funds."* C6-2. 2) reducing attracting cost of DAUs. *"The telecommunications companies such as Zain are one of the best partners who enable us to access their users without a significant cost. They replace their users' points in 'Zain Cash' with a discount on our services"* C2-5. These factors put pressure to internationalize or expand nationally.

Factor of Industry. Three factors drive BMI of SPSMEs which are encouraging SPSMEs to engage across multiple sectors, facilitating cross-sector collaboration, and expanding opportunities for value creation and capture which fostering innovation through a less sharing economy model to diversify their activities. We found SPSMEs can provide an unlimited number of services. Indeed, they can be involved in different industries, which make it hard to classify them under one umbrella or follow specific regulations within a specific industry, as one informant explained: *"We do not know if our model is classified under which industry. [...] For example, the regulations are not clear for us in terms of which industry we should follow. Our activities spread across different industries, therefore different regulations can apply to our model."* C2-2.

Taken together, these findings show that ecosystem influence on SPSMEs' BMI is differentiated rather than uniform. Actors in the Digital Activity Network shape BMI directly by affecting value creation, provider control, and user experience, whereas actors in the Digital Business Network shape BMI more indirectly by influencing legitimacy, expansion paths, complementary reconfiguration, and strategic redesign.

5. Discussion and conclusion

The dynamic process of SPSMEs' BMI is a dynamic complex system that relies on actors in the business ecosystem to create value. This process is context-sensitive where SPSMEs in developing economies (i.e., Jordan) innovate their BMs depending heavily on the conditions of their environment that differ from developed economies. In this sense, both micro-level conditions of SPSMEs in developing economies (such as SPSMEs' abilities to recognise the opportunities and their capabilities) and macro-level conditions in developing economies (such as weak institutional trust, low digital awareness, provider fragmentation and capacity constraints, exploitative funding conditions, and regulatory ambiguity) play a decisive role in shaping how BMI unfolds, and therefore the observed dynamics in this process (cf. Abdalla et al., 2025; Yi et al., 2022). The interaction between these levels is critical, as micro-level SPSMEs' actions are often constrained or enabled by macro-level institutional and infrastructural realities, creating a

feedback loop that shapes the trajectory of BMI (Tello-Gamarra and Netto, 2022).

Although existing studies have highlighted the need to adopt different angles to study it, the interaction between micro- and macro-levels is still unclear in the literature (Nambisan et al., 2020; Essen et al., 2023). Surprisingly, most of the research has focused on the SE unicorns operating in developed economies, and as illustrated in this study, SPSMEs, especially in developing economies, have received little attention (Muñoz and Cohen, 2018; Sanasi et al., 2020). In an endeavor to fill this gap, micro- and macro-levels have been adapted to provide a comprehensive understanding of the dynamic process of BMI of SPSMEs in developing countries.

The aim of this study, therefore, was to investigate the dynamic process of SPSMEs' BMI in developing countries from an ecosystem-centric view. Using Abductive, multiple-case studies, our study contributes to the literature by developing the 3Ts model, which explains how SPSMEs innovate through Triggering, Theming, and Transforming. As visualised in Fig. 2, the 3Ts model does not depict three isolated categories, but a connected BMI process in which opportunity recognition, value-logic selection, and activity-system reconfiguration unfold recursively over time. Moreover, it identifies a differentiated business ecosystem composed of the Digital Activity Network and the Digital Business Network, and shows how these two networks shape BMI through distinct mechanisms. We further discuss these contributions next.

Our study advances the literature by providing critical insights about the sensitivity of BMI process of SPSMEs to local context. Prior research has established that SPSMEs BMI involves multiple network actors which coexist and interact in a dynamic environment (Parente et al., 2018) and that these environments vary significantly across developed and developing economies (Yi et al., 2022). Yet, the literature on sharing platforms has remained disproportionately centred on firm-centric view and overlooking the critical role of business ecosystem actors in driving this process. Our findings shift the focus on BMI from one generalized process to a perspective that recognise BMI as dynamic and highly sensitive to local actors within the business ecosystem. This explains how SPSMEs are linked to actors in Business Ecosystem, and therefore shape their BMI choices differently through the process (Ko et al., 2022) as we mentioned in Table A1.

Literature has recently suggested that sensing opportunity has changed in the digital world, and SPSMEs have new dynamic capabilities (Teece, 2017). Yet, how sense as dynamic capabilities changed in the SPSMEs context is still unanswered (Simsek et al., 2024). In this study, we emphasize that in the Triggering stage of BMI, SPSMEs are most likely to initiate innovation when they detect opportunities emerging from digital networks (such as new platforms, digital marketplaces, or online collaborations) and then evaluate these against their own financial and digital capabilities. This means that even in contexts where provider readiness is limited (for example, fragmented service providers or weak institutional support), SPSMEs can still move forward with BMI if they perceive that their internal resources and digital competencies allow them to exploit these opportunities (Loon et al., 2026). In keeping with De Silva et al. (2021), there is a need to involve stakeholders in the BMI process because dynamic capabilities are not limited to the firm. In other words, the presence of digital networks acts as a catalyst, but the decision to trigger BMI depends on the SPSMEs' ability to realistically assess whether it has the financial resilience and technological know-how to act. This highlights the adaptive nature of SPSMEs in developing economies as they do not wait for perfect ecosystem conditions but instead leverage whatever digital signals and opportunities are available, balancing them against their internal constraints to initiate the BMI process. These insights challenge

the traditional view that BMI is a proactive and opportunity-led process. In SPSMEs, BMI is often activated by constraints that force firms to adjust their BMs to survive (cf. Abdalla et al., 2025). This leads us to the following theoretical proposition:

Proposition 1. *In the Triggering stage, SPSMEs operating in developing economies are more likely to initiate BMI when they identify opportunities emerging from digital networks and assess these against their constrained financial and digital capabilities, even in contexts of limited ecosystem or provider readiness, their adaptive use of internal resources enables them to leverage available digital signals to move forward with BMI.*

In contrast to the existing studies that suggest that seizing opportunity starts after sensing opportunity by developing several themes before selecting the best theme that restricts the design elements in innovating later (i.e., Amit and Zott, 2016; Teece, 2007), this study indicates that SPSMEs tend to innovate their BMs by deliberately choosing a digital platform theme that directly reflects the value they aim to capture from the opportunity they have recognized. Rather than experimenting with multiple alternative themes or scattering their efforts across different logics, they focus on aligning their chosen theme with the specific opportunity at hand. This approach reflects both resource pragmatism and contextual adaptation where SPSMEs in developing economies often operate under financial and institutional constraints, so committing to a single, well-aligned digital platform theme allows them to maximize efficiency, reduce risk, and strengthen their value proposition. In this way, Theming becomes a process of strategic alignment that ensures the BMI is coherent with both the opportunity and the firm's capabilities, rather than a trial-and-error exploration of multiple possible directions. Moreover, Amit and Zott (2001) argue that themes can be within NICE themes [Novelty, Lock-in, Complimentary, and Efficiency themes] (Amit and Zott, 2012; Zott and Amit, 2010; Balboni et al., 2019). This study takes this suggestion further by extending the existing themes in literature [the NICE themes] to include an additional two unique themes adapted in the SPSMEs context; Crisis theme and Control service quality theme; NICE-CC themes. Furthermore, the prior research suggests that the theming decision limits the later decision regarding the design elements of BMs. This study contradicts with this view by showing that theming decision does not restrict the transformation of SPSMEs' digital activity system [in Stage 3] because SPSMEs are able to pilot and adjust the digital activity system after redesigning it. This then leads us to the following theoretical proposition:

Proposition 2. *Within the Theming stage, SPSMEs, in developing economies, are more likely to move from opportunity recognition to innovating their BM when they commit to a dominant digital platform theme that fits the value they seek to capture, rather than experimenting with multiple alternative themes. This thematic commitment acts as a pragmatic focusing device under financial and institutional constraints.*

Scholars have highlighted that transforming and reconfiguring in BMI is an ongoing renewal process of BM redesign (Teece, 2018), but they fail to provide guidance on how firms engage in this ongoing process [dynamic of BMI] which is still unclear in the literature (Snihur and Bocken, 2022; Foss and Saebi (2018). This study supports this view and takes it further by explaining that in developing economies, SPSMEs are more likely to complete BMI through iterative cycles of redesign, piloting, and adjustment because their environments are highly uncertain, and infrastructure is often underdeveloped. While literature generally describes this dynamic aspect [ongoing] as the change in BMs, this study shows that the Transforming stage starts from redesigning the digital activity system and testing the new configuration of BMs before engaging in changing loops. In this study, redesigning elements of the digital activity system allows them to adapt to limited technological readiness and fragmented provider support. Piloting and evaluating new user experiences becomes essential since consumer digital awareness may be low, requiring SPSMEs to experiment carefully to build trust and engagement. Adjusting the digital platform architecture in response to user feedback and

emerging opportunities is particularly critical in these contexts, as it enables firms to remain flexible and responsive to shifting institutional conditions, exploitative funding environments, and evolving market gaps. Thus, transformation in developing economies is less about scaling rapidly and more about continuous adaptation to fragile and volatile ecosystems. This leads us to the following proposition:

Proposition 3. *In the Transforming stage, SPSMEs in developing economies are likely to complete BMI when they iteratively (a) redesign elements of their digital activity system to adapt to limited technological readiness and fragmented provider support, (b) pilot and evaluate new user experiences to build trust among consumers with low digital awareness, and (c) adjust the digital platform architecture in response to user feedback and emerging opportunities within fragile and volatile ecosystems.*

In developing economies, the BMI of SPSMEs is shaped by a business ecosystem that is both fragmented and evolving. In contradiction to most of the research (e.g., Geissinger et al., 2019) that focused on actors by studying how they are affected by SE BM, this study used these actors to investigate the external drivers [factors] to BMI of SPSMEs. Actors in the Digital Activity Network directly affect value creation and control conditions, but their limited capacity and uneven readiness often constrain SPSMEs' ability to innovate. Meanwhile, actors in the Digital Business Network indirectly steer expansion and reconfiguration, but their influence is often marked by regulatory ambiguity, exploitative funding conditions, and weak institutional trust. This duality means SPSMEs must navigate a differentiated ecosystem where direct operational influences are constrained, and indirect institutional influences are unpredictable. The interplay between these two networks in developing economies therefore shapes BMI trajectories in unique ways, forcing SPSMEs to innovate cautiously, adapt incrementally, and rely heavily on ecosystem-centric strategies to sustain their business models. This study shows the overall impact of business ecosystem actors on BMI of SPSMEs, which is still missing in the literature (Davidson et al., 2018). This leads us to the following theoretical proposition:

Proposition 4. *In developing economies, fragmented business ecosystems shape SPSMEs' BMI through two mechanisms: direct constraints from the Digital Activity Network on value creation and service control, and indirect pressures from the Digital Business Network on expansion, complementary reconfiguration, and business model redesign. Under conditions of limited provider readiness, regulatory ambiguity, exploitative funding, and weak institutional trust, SPSMEs are more likely to innovate cautiously, adapt incrementally, and rely on ecosystem-centred strategies.*

5.1. Implications for theory

This study advances BMI theory by showing that the evolution of sharing-platform SMEs cannot be reduced to a firm-centric redesign problem. Prior work has repeatedly called for BMI to be examined beyond the focal firm, yet the literature on sharing platforms has remained disproportionately centred on internal design choices, large platforms, or relatively static business model configurations (Amit and Zott, 2015; Frishammar and Parida, 2019; Zhao et al., 2020; Yi et al., 2022). The present findings shift the analytical centre of gravity from the focal firm alone to the ecosystem-embedded process through which SPSMEs recognise opportunities, define value logics, and reconfigure their activity systems. In that sense, the study does not simply add context to existing BMI theory. It shows that, in this setting, BMI is shaped by the interaction between digital intermediation, institutional constraints, and ecosystem actors whose influence is constitutive rather than peripheral. This sharpens recent calls to theorise BMI as a genuinely dynamic and multi-level process rather than as a bounded design event (Zeng et al., 2021; Snihur and Bocken, 2022; Essen et al., 2023).

A second contribution lies in the 3Ts model itself. The model refines existing process accounts of BMI by showing that Triggering, Theming, and Transforming are analytically distinct but empirically connected stages. Triggering extends conventional sensing accounts by showing that, in SPSMEs, opportunity recognition is often embedded in the platform's own operational data rather than arising primarily from separate scanning routines (Teece, 2007, 2018). This is a significant shift because it suggests that, for platform SMEs, recognising opportunities is not always a discrete strategic exercise but can be a structural by-product of digitally mediated intermediation. Theming, in turn, is more disciplined and less exploratory than seizing is often portrayed in prior work. The evidence does not show firms generating multiple competing themes and then gradually narrowing them down. It shows them moving relatively directly toward a dominant value logic that matches the opportunity or constraint they confront. This repositions theming as a selective interpretive mechanism linking recognition to subsequent redesign, rather than as a broad search process. Transforming then captures BMI not as a one-off reconfiguration, but as an iterative cycle of redesign, piloting, and architectural adjustment. The contribution here is not merely that BMI unfolds over time, but that in SPSMEs this temporality is structured, recursive, and enabled by digital platform infrastructures that continuously generate data for reconfiguration (Amit and Han, 2017; Amit and Zott, 2016; Zott and Amit, 2010; Teece, 2007, 2018). Fig. 2 should therefore be understood as the paper's visual abstraction of BMI as a process model, while Appendix A shows the cross-case evidence from which that abstraction was derived.

Our third contribution lies in how the findings refine activity system and dynamic capabilities perspectives in the SPSME context. The NICE themes remain useful, but they do not fully capture the thematic dynamics observed across the cases. Alongside novelty, lock-in, complementarity, and efficiency, the evidence points to two additional value logics: crisis and control service quality. This extends the thematic repertoire through which BMI in platform SMEs can be understood and shows that these themes operate differently in this context than existing theory assumes (Zott and Amit, 2010; Amit and Zott, 2020; Foss and Saebi, 2018; Schaffer et al., 2019; Zhao et al., 2020). Novelty is not a stable design characteristic fixed at inception, but a recurrent and fragile performance of differentiation in highly imitable markets. Lock-in is not single-sided, but must operate simultaneously on users and providers through different mechanisms. Complementarity is not a generic design orientation, but a layer-specific response enacted through content, structure, or governance depending on where the value gap lies. Efficiency, similarly, is not only about lowering internal coordination costs, but about sustaining the coherence of a two-sided mediated market.

The findings also refine transformation logic within BMI. SPSMEs do not only redesign content, structure, and governance; they also reconfigure revenue architecture. Digital revenue streams therefore emerge as a distinct object of redesign rather than as a downstream consequence of activity-system change. In parallel, the pilot-and-revise pattern observed across the cases suggests that digital platforms function not only as value-creation infrastructures but also as experimental infrastructures through which BMI hypotheses can be tested and refined. This makes transformation more iterative, data-intensive, and experimentally grounded than most prior BMI accounts acknowledge (Zott and Amit, 2010; Amit and Zott, 2020). Finally, the study qualifies firm-centred readings of dynamic capabilities. Triggering, Theming, and Transforming are enabled by firm-level capabilities, but they are also conditioned by the capabilities and limitations of external providers. Provider capacity, adaptability, and service quality repeatedly shape whether recognised opportunities can be pursued, how themes are selected, and whether transformation remains asset-light or shifts toward tighter

control. The implication is not that dynamic capabilities cease to matter, but that in platform-mediated SMEs they are relationally distributed and partially dependent on actors beyond the focal firm (Teece, 2007, 2018; Yi et al., 2022).

5.2. Implications for policy and practice

This study has implications for both policymakers and practitioners because it shows that the BMI of SPSMEs is shaped not only by firm-level choices, but also by the wider business ecosystem in which these firms operate. For policymakers, the findings suggest that SPSMEs in developing economies should be understood as digital intermediaries embedded in weak institutional environments marked by provider fragmentation, low digital awareness, and regulatory ambiguity. In contexts such as Jordan, where some SPSMEs emerged in unregulated markets to solve local problems through digital platforms, policy should focus on how fragmented providers can be incorporated into more formalized digital arrangements without overlooking their vulnerability within these systems. The findings therefore point to provider protection and market regulation as central policy concerns rather than secondary ones.

For managers and entrepreneurs, the findings show that BMI requires more than adding new services or redesigning a platform interface. Managers need to treat the digital network as a continuous source of opportunities but also assess those opportunities against both their own capabilities and the capabilities of providers. They also need to recognise that business model redesign is inherently interdependent: changes in content, structure, governance, and revenue streams cannot be managed in isolation. Finally, because BMI unfolds within a differentiated ecosystem shaped by users, providers, governments, competitors, partners, local communities, and industry conditions, managers need to approach transformation as an iterative and ecosystem-facing process of redesign, piloting, and adjustment.

5.3. Limitations and future directions

This study has three limitations. First, despite stratified interviewing and anonymity protocols, residual elite bias (Eisenhardt and Graebner, 2007) may distort BMI narratives, as power dynamics inevitably shape organizational accounts. Second, the confidentiality-verifiability trade-off inherent in sensitive BMI research, while necessary, limits empirical transparency. Third, though maximum variation sampling (Eisenhardt, 1989; Yin, 2017) and cross-case analysis bolster robustness, the SPSME focus inherently bounds generalizability - a necessary sacrifice for depth that invites complementary approaches.

These limitations precisely demarcate where subsequent research

can add value. As such, future research can test the 3Ts model across larger samples and different platform sectors to assess how far Triggering, Theming, and Transforming travel beyond this study. Further work should also examine the DAP paradox: digital activity providers help SPSMEs scale, but they can also weaken control over quality, users, and service delivery (Markman et al., 2021). This calls for more work on governance frameworks for DAP transitions, including evaluation metrics and control-retention mechanisms when firms move away from purely asset-light sharing models. Future studies should also examine how SPSMEs shift along the sharing-integration continuum over time, especially when weak institutions, ecosystem frictions, and recurring trust failures push firms to reclaim control.

In conclusion, this study shows that BMI in SPSMEs is not simply platform redesign, but a survival process shaped by the constant tension between access, control, and ecosystem dependence. The 3Ts model explains how firms recognise pressures and opportunities, define a viable value logic, and reconfigure their digital activity systems. At the same time, the ecosystem analysis shows that users, providers, governments, competitors, partners, communities, and industries shape what can change, how quickly, and with what level of control. Sharing platforms create access, but access also creates dependency; the central challenge is turning that dependency into a capability rather than a constraint.

Ethical statement

The study followed standard ethical research protocols. Participants were informed about the purpose of the study and took part voluntarily. They were assured of confidentiality and could withdraw at any time. No sensitive data were collected, and all responses were anonymised. Ethical approval was obtained where required as per the institutional guidelines.

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CRediT authorship contribution statement

Sara Odat: Conceptualization, Formal analysis, Methodology, Resources, Visualization, Writing – original draft. **Omar Al-Tabbaa:** Conceptualization, Supervision, Writing – review & editing. **Zaheer Khan:** Conceptualization, Supervision, Writing – review & editing. **George Saridakis:** Conceptualization, Supervision, Writing – review & editing.

Appendix A. Cross-case comparison of the 3Ts model

This appendix provides additional transparency on how the 3Ts model was derived from the seven SPSME cases. It complements the within-case and cross-case analysis reported in the main paper by showing, in a consolidated format, how similar dynamics recur across cases while taking different empirical forms.

Analytical narrative

Table A1 shows that the seven cases do not exhibit identical events, but they do reveal a common process architecture. More specifically, the 3Ts model does not claim that all SPSMEs encounter the same trigger, adopt the same theme, or transform through the same activity redesign. Rather, it shows that BMI unfolds through a recurring sequence in which an opportunity or tension becomes visible in the digital network, a value logic is then selected in response to that opportunity, and the digital activity system is subsequently reconfigured and refined.

The cross-case comparison reinforces this argument:

First, the **Triggering** stage is empirically broader than a conventional sensing account would suggest. In some cases, opportunities emerged from digital user data and feedback loops, as seen most clearly in Cases 4 and 6. In other cases, the trigger arose through external scanning of government action and competitor behaviour, as in Case 2. Case 1 exposes a different mechanism again: recognising an opportunity was inseparable from evaluating whether the firm had the capabilities to exploit it. The stage is therefore not reducible to market sensing. It is better understood as a digitally mediated recognition-assessment process in which opportunity identification and capability evaluation are tightly intertwined.

Second, the **Theming** stage is more disciplined and less exploratory than prior work on seizing often implies. The evidence does not show these SPSMEs generating multiple alternative themes and then selecting among them. It shows them moving relatively directly toward a dominant value logic that matched the nature of the opportunity or constraint they confronted. Case 1 illustrates efficiency. Case 2 illustrates lock-in. Case 5 illustrates complementarity. Cases 3, 4, and 7 point to service-quality control. Case 4 also reveals that themes can overlap, particularly when crisis conditions compress decision windows. This matters theoretically because it suggests that theming is not a generic design exercise. It is a selective and context-bound interpretive move that links opportunity to value logic.

Third, across the cases, **transformation** repeatedly involves some combination of redesigning digital activity content, altering structure, changing governance, revising revenue streams, piloting new offerings, and iterating through user response. Yet the depth and speed of transformation vary. Some firms extend services. Others redesign routing systems, impose tighter provider controls, or move toward less asset-light models. Case 4 is especially instructive because it demonstrates that transformation is not a one-off act but an experimental sequence of temporary launch, data collection, and refinement. Case 5 reinforces this by showing that modification remains ongoing rather than episodic.

Table A1

Cross-case evidence for the Triggering, Theming, and Transforming stages.

Case	Triggering	Theming	Transforming
Case 1	“Although identifying opportunities is crucial, our startup’s limited financial and technological resources require that any BM expansion be predicated on core capabilities” (C1-2). <i>Observed dynamic: BMI is triggered not simply by recognising an opportunity, but by evaluating whether the firm possesses the financial and digital capacity to act on it.</i>	“One problem is the supply and demand [...] When we start, the provider’s number is good, and the demand is good. Once the number of providers rapidly increased with no increase on-demand ... so there is no profit and the cost increase [...] we changed to reach the break-even point” (C1-4). <i>Observed dynamic: The case adapted an efficiency logic, with BMI oriented toward restoring economic viability.</i>	“we began with maintenance; now we provide transport furnishing, winch services, electrical and sanitary installations, satellite TV tech, water tankers, and home and office cleaning” (C1-4). <i>Observed dynamic: The firm transformed its digital activity content by broadening service scope. It also redesigned revenue and market-entry logic, as indicated elsewhere in the findings.</i>
Case 2	“Relying only on our DP to find and spot opportunities is excellent but not enough. We monitor government policies and competitor models to unlock exceptional opportunities and transform our business model” (C2-3). <i>Observed dynamic: Triggering arises not only from platform data, but from scanning the broader digital business network.</i>	“To lock-in our users to stay with us, we changed our platform design and expanded our home services to be more comprehensive ...” (C2-4). <i>Observed dynamic: The case adapted a lock-in logic aimed at retaining both users and providers.</i>	“In Jordan, people are not mature digitally. We launched a user care centre, operation, and call centre ...” (C2-2). <i>Observed dynamic: The firm transformed both structure and governance by adding complementary support mechanisms and provider training.</i>
Case 3	“While rider capabilities are central to creating value and enabling new services, such as on-demand delivery for individuals, the model suffers from unpredictable driver availability. This agility-consistency trade-off underscores the difficulty of standardizing quality in the UAE gig market” (C3-1). <i>Observed dynamic: Triggering emerged through the limits of scaling an asset-light model dependent on external providers.</i>	“Our model was initially 100% asset-light with no owned drivers or vehicles, but without direct oversight we couldn’t maintain consistent service quality” (C3-1). <i>Observed dynamic: The firm adapted a control service quality logic in response to its inability to govern provider performance.</i>	“We redesigned the driver app so that restaurant orders automatically route to drivers—once they receive and accept an order, they pick it up and deliver the food” (C3-4). <i>Observed dynamic: The firm transformed its digital activity structure to improve coordination and service execution.</i>
Case 4	“With our DP, we instantly capture and act on user feedback—using those insights to guide every improvement and new service by pinpointing and solving user pain points” (C4-2); “Providers have capacity constraints ...” (C4-2). <i>Observed dynamic: Triggering in this case combines user-driven opportunity recognition with immediate awareness of provider-side capacity bottlenecks.</i>	“The most important thing to our company is to make our BM novel and different in the market ...” (C4-1); “We had to very reactive and very quick in our response” (C4-3). <i>Observed dynamic: The case illustrates both novelty and crisis themes, revealing that theming can be layered rather than singular.</i>	“We tested a new service temporarily before we launched it ...” (C4-2). <i>Observed dynamic: The case shows explicit piloting, user-based experimentation, and later adjustment of the activity system before broader rollout.</i>
Case 5	“We have added more services to support our users, as we found a gap in their skills that prevent them from benefiting from our main services ...” (C5-2). <i>Observed dynamic: Triggering emerged from recognising that users lacked the capabilities needed to benefit from the core platform offering.</i>	“We introduced complementary services such as helping users create their C.V.s to enable them to use our core service more effectively” (C5-1). <i>Observed dynamic: The theme followed the value logic of capability-building for users rather than pure market expansion.</i>	“We still have to modify our model. So the model modification is an ongoing process ...” (C5-1). <i>Observed dynamic: The case most clearly demonstrates the iterative and recursive nature of transforming, where business model modification remains open-ended.</i>
Case 6	“With detailed user profiles, we track behaviors in West Amman to spot innovation opportunities—identifying, for example, the need for a night-shift service” (C6-2). <i>Observed dynamic: Triggering is strongly data-led, with opportunities identified through user-behaviour analytics.</i>	“When we expanded to Saudi Arabia, we added a gas driver to our BMs because the gas shops in the Saudi market did not have drivers to deliver gas cylinders to people and businesses as in Jordan” (C6-6). <i>Observed dynamic: The underlying theme is a context-sensitive configuration of value capture rather than abstract experimentation with multiple themes.</i>	“Access was free at launch in Jordan; after two years, we implemented a 1 JOD monthly subscription fee per user” (C6-2). <i>Observed dynamic: The case transformed not only service design but also its revenue architecture.</i>
Case 7	“Our platform is unlike anything the industry has seen because we put the needs of our users first [...] we provide quality and affordable healthcare in one single platform that enables us to adapt the changes and exploit new opportunities such as medical tourism” (C7-5). <i>Observed dynamic: Triggering arose from C7’s assessment of whether its digital platform capabilities were sufficient to respond</i>	“We work closely with our doctors through account managers and customer care to quickly address issues. In fact, our legitimacy as a healthcare platform depends on more than the digital interface. It requires active control of service quality and risk. That’s why we built support structures to keep patients safe and providers accountable” (C7-2).	“We contacted many actors in the new business ecosystem (new international network) for building relations that facilitate our scaling. We do not run all our services in all scaled countries. We have several services running in Jordan [home network]. We operate different business model for each country. For example, our medical tourism service was only provided in Jordan before we expanded

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Table A1 (continued)

Case	Triggering	Theming	Transforming
	<i>to changing user needs and exploit new healthcare-related opportunities, especially medical tourism.</i>	<i>Observed dynamic: The value logic was shaped by the limits of platform intermediation in healthcare-related services.</i>	into Turkey and Saudi markets. However, this service is not available in Lebanon and UAE" (C7-1). <i>Observed dynamic: Transformation involved broadening the content and reach of the platform.</i>

Appendix B. Illustrative quotations supporting the 3Ts process model and ecosystem mechanisms

Analytical focus	Mechanism/theme	Illustrative quotation	Interpretation
Triggering	Looking into users' feedback loop	"With our DP, we instantly capture and act on user feedback, using those insights to guide every improvement and new service by pinpointing and solving user pain points." C4-2	SPSMEs use platform-based feedback to identify opportunities for BMI.
	Tracing users' behaviour	"With detailed user profiles, we track behaviors in West Amman to spot innovation opportunities, identifying, for example, the need for a night-shift service." C6-2	User data enables opportunity recognition within the digital network.
	Following actors in the Digital Business Network	"Relying only on our DP to find and spot opportunities is excellent but not enough. We monitor government policies and competitor models to unlock exceptional opportunities and transform our business model." C2-3	Opportunity recognition also depends on monitoring wider ecosystem actors.
	Evaluating SPSME capabilities	"Although identifying opportunities is crucial, our startup's limited financial and technological resources require that any BM expansion be predicated on core capabilities." C1-2	SPSMEs assess whether recognised opportunities can be acted upon with their available resources.
	Evaluating provider capabilities	"Providers have capacity constraints: they can only accept a limited number of orders without adding laundries, since each runs its own business. As an ancillary revenue stream, these limits prevent us from launching new services." C4-2	Provider readiness shapes whether SPSMEs can exploit recognised opportunities.
Theming	Novelty theme	"The most important thing to our company is to make our BM novel and different in the market. We make sure that we add more value for our users. This is why we added more services that superior our value for extra money." C4-1	SPSMEs use novelty to differentiate the platform and increase perceived user value.
	Lock-in theme	"To lock-in our users to stay with us, we changed our platform design and expanded our home services to be more comprehensive, driving our users to use the platform for all their needs." C2-4	The value logic is used to retain users and providers within the platform.
	Complementarity theme	"We have added more services to support our users, as we found a gap in their skills that prevent them from benefiting from our main services such as scholarships." C5-2	Complementary services help users access and benefit from the core platform offering.
	Efficiency theme	"Once the number of providers rapidly increased with no increase on-demand as culture barriers, so there is no profit and the cost increase. We changed to reach the break-even point." C1-4	Efficiency-oriented theming responds to cost pressures and demand-supply imbalance.
	Crisis theme	"It was because we were in the middle of a pandemic, our biggest revenue generators ... were no longer doing those. So, we had to think of something different that would help us gain that market share back." C4-3	Crisis conditions trigger a value logic focused on survival and rapid adaptation.
	Control service quality theme	"We realized that inconsistent service quality was reducing trust in our platform. To address this, we introduced stricter provider vetting and continuous monitoring to ensure users receive reliable and high-quality services." C3-5	The value logic focuses on maintaining trust and satisfaction by enforcing quality standards across the platform.
	Adjusting digital theme to Context	"One problem is the supply and demand. Once the number of providers rapidly increased with no increase in demand due to cultural barriers, there was no profit and costs increased. We adjusted our efficiency theme by introducing localized pricing models to reach the break-even point." C1-4	The value logic focuses on refining the chosen theme to remain relevant and resilient under shifting external conditions.
	Reconfiguring Capabilities	"We reconfigured our control service quality theme by adding monitoring tools and rating systems to strengthen provider performance." C3-1	The value logic focuses on strengthening the platform's ability to deliver on the chosen theme by aligning internal resources and practices with external demands.
Transforming	Redesigning Digital Activity Governance	"Our model was initially 100% asset-light with no owned drivers or vehicles, but without direct oversight we couldn't maintain consistent service quality." C3-1	SPSMEs redesign governance when provider dependence undermines service quality.
	Redesigning Digital Revenue Stream	"Our platform initially charged providers a 10% fee per transaction but later moved to a fixed monthly subscription of 30 JOD." C1-3	Revenue models are redesigned as part of the transformation of the digital activity system.
	Piloting user digital experience	"We tested a new service temporarily before we launched it. We looked at our users' base to see the reaction of our users, if they like the new service or not." C4-2	SPSMEs use temporary trials to evaluate user response before full implementation.
Digital Activity Network	Revamping the Digital Platform architecture	"We still have to modify our model. So the model modification is an ongoing process. We have to always keep up with things as there will always be new demands or new opportunities." C5-1	Transformation is iterative, with new feedback and opportunities reactivating further adjustments.
	Users shaping BMI	"Users perceive our service providers as our own employees, so we bear full responsibility for any subpar work, harming our reputation and finances." C1-1	Users directly affect BMI by shaping accountability, quality expectations and control pressures.
Digital Activity Network	Providers shaping BMI	"Dependence on providers introduces evolving capacity bottlenecks that ultimately throttle our growth and scalability." C4-2	Provider limitations directly constrain platform scalability and business model change.

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Analytical focus	Mechanism/theme	Illustrative quotation	Interpretation
Digital Business Network	Digital government	"Digital Government contacted us in order to collaborate with us. They want to regulate the maintenance sector through our platform to support the low-income service providers." C2-1	Government actors can redirect BMI by creating legitimacy and expansion opportunities.
Digital Business Network	Local communities	"We added a call centre service to overcome the low digital awareness issue. People can order our services by calling us." C2-5	Low digital awareness in local communities pushes SPSMEs to add complementary offline support.
Digital Business Network	Partners	"The telecommunications companies such as Zain are one of the best partners who enable us to access their users without a significant cost." C2-5	Partners help reduce user acquisition costs and support expansion.
Digital Business Network	Industry	"We do not know if our model is classified under which industry. The regulations are not clear for us in terms of which industry we should follow." C2-2	Industry ambiguity and regulatory uncertainty shape business model redesign.

Data availability

The data that has been used is confidential.

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Sara Odat, PhD. Sara is an Assistant Professor of Strategy and International Business at the Business School at the Hashemite University, Zarqa, Jordan. She earned her Ph.D. in Management from the University of Kent, UK. Her research focuses on business model innovation, digital platform, sharing economy, bypass intention, scalability, scalable business model, business ecosystem, network position, activity system, international process and SMEs.

Professor Al-Tabbaa's research explores digitalization strategy, smart technologies, strategic partnerships, business ecosystems, and international business models.

Professor Khan's work focuses on global technology management, nonmarket strategy, emerging market firms, alliances, and platform firms.

Professor Saridakis investigates entrepreneurial behavior, SME performance, and policy implications for small businesses.