



Adaptive organizational responses to varied types of failures: Empirical insights from technology providers in Ghana

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ABSTRACT

Although failure has been described as a significant trigger for the organizational learning process, current literature studies have provided limited insight into the organizational conditions that foster learning from failure. Interpreting the organizational failure as a missed opportunity for a firm to anticipate, recognize, avoid, neutralize or adapt to external environment generating diverse misfits, our study investigates how firms respond to different misfits within and in their environment. Using interviews and document analysis, we identify four types of misfits-managerial, cultural, technical, and political-and examine how firms respond to these misfits over time. Our research reveals that firms exhibit distinct patterns of response and learning depending on the type of misfit encountered. We also identify specific strategies and resources that firms utilize to anticipate, prepare for, and respond to misfits, such as developing innovative solutions and cultivating external networks. Lastly, we discuss the managerial implications of our findings and propose avenues for future research.

1. Introduction

Failure is often understood as the culmination of decades of decline and deteriorating financial performance (Probst and Raisch, 2005). But already in the early stages of an organization's life, the organizational decline can threaten the organization's long-term survival if the firm does not learn how to make adjustments. Organizations enter a state of decline when they do not meet the environmental demands for products and services. Along this line of reasoning organizational decline is seen as a maladaptation to the environment (Greenhalgh, 1983). The organizational decline occurs when an organization fails to anticipate, recognize, avoid, neutralize or adapt to external and internal pressures that may threaten the organizational survival (Weitzel and Jonsson, 1989). Failure to recognize or anticipate misfits can also be a necessary step on the path to success, as success often comes through learning from failures (Dana et al., 2021; Zimmerman and Zeitz, 2002; Huang and Van de Vliert, 2003; Cannon and Edmondson, 2005; Seelos and Mair, 2012). In other words, the act of failing itself is not the most harmful consequence for a firm, but rather the missing act of learning from those failures. Thus, despite failure can represent a damaging experience for

firms (Whytey, 1998), scholars have emphasized the opportunity of learning from this experience (Cardon and McGrath, 1999; Shepherd, 2003). In some cases, scholars have even suggested that avoiding future failures depends on the ability to learn from previous failures (Cannon and Edmondson, 2001; Ahn et al., 2005; Shepherd and Cardon, 2009; Maslach, 2016; Rhaem, 2018).

Despite the acknowledgement of failure as a significant driver of organizational learning, scholars in the field of organizational learning highlight that the aftermath of a failure, particularly when misfits are not recognized or anticipated, serves as a catalyst for learning and innovation (e.g. Cyert & March 1963), the current body of literature falls short in delivering a comprehensive grasp of the specific organizational conditions conducive to learning from failure (Cannon and Edmondson, 2001). This gap in understanding contributes to the existence of contrasting findings.

Moreover, alternative perspectives, such as the threat-rigidity theories, posit that failure-induced decline can hinder cognitive processes, thereby narrowing the spectrum of managerial choices and subsequently impeding innovation (Staw et al., 1981; Cannon and Edmondson, 2001). To cope with these inconsistent positions, some studies have started

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connecting the organizational decline to innovation via a contingency framework including some moderating variables related to the context but missing to provide a holistic understanding of the phenomenon. To address this gap, our study aims to address the following research question: How do firms respond to different misfits within and in their environment?

We draw on in-depth interviews and archival data from fifteen small and medium technological firms (hereafter referred to as 'AgriTech firms') operating in Ghana to diffuse their technologies and services to farmers. By leveraging on the CEOs' and managers' narratives about their company's blindness in the first stage of decline and the learning and corrective actions taken, we could describe the dynamics of the period between the assimilation of the negative information about the failure and corporate action allowing us to develop an emergent theory of how organizational decline due to failure in recognize signals of the misfit in the environment become linked with the innovation through a set of different learning patterns and mechanisms.

By emphasizing the anticipation and recognition of internal and external problems, we focus the attention on the organizational failure to anticipate or recognize maladaptation ("misfit") of firms' products and services to their internal and external environment and on how they respond to different types of misfits embracing different learning patterns depending on the type of misfit.

Borrowing from the conceptualization of fit proposed by Ansari et al. (2010) between the characteristics of the item to diffuse on the field (e.g. a product or service) and the characteristics of the potential adopters, we identify four forms of fit that have been created their need of adaptations: (1) rational managerial view/managerial fit (2) technical fit, (3) cultural fit (4) political fit. We show that managerial, technical, cultural and political misfits trigger different learning patterns and imply the usage of different learning mechanisms affecting differently the ability of firms to adapt. Thus, despite the contingency of the scenario of decline, we argue that organizations may have a different response to the decline depending on the nature of failure that we classify into four categories and on the company's sensitivity to it. So doing we contribute to feeding the debate on inconsistent positions about the influence of organizational decline on innovation (See e.g. Mone et al., 1998). Our study also contributes to the theory on learning from innovation failure identifying different mechanisms enabling firms to learn from failure (see Desai, 2016) and recognizing different patterns of learning from which the same company can originate depending on the nature of misfit.

Our study also sheds light on the firm-level cognitive response to failure. Indeed, past studies have linked the variation of the cognitive response to failure to individual attributes such as professional experience (Patzelt and Shepherd, 2011; Shepherd et al., 2013), cognitive and perception skills McGrath (1999); Wennberg and DeTienne (2014); Lin et al. (2019), personality (Loh and Dahesihari, 2013) and/or demographic profile (Baù et al., 2017; Dias and Teixeira, 2017; Walsh and Cunningham, 2017; Lin et al., 2019) of a particular person in charge to decide but missing to connect the variation of the cognitive process to firm level and contextual level attributes such as the nature of misfit with the environment. Undoubtedly, when organizations focus on adhering to industry conventions and making incremental innovations to adapt and compete within existing competitive realities, they tend to confine their strategic thinking within the boundaries of traditional industry norms, customer behaviour, the nature of competitors, and traditional supplier relationships. However, new challenges may arise, either as continuous or punctuated disequilibrium, which cannot be adequately addressed solely through traditional organizational and managerial thinking and practices generating different types of misfits with the environments and triggering a new learning process.

The remainder of this paper is structured as follows. Our theoretical background at the intersection of organizational decline and innovation and learning from failure is provided in the next section, followed by the methodology adopted for the study. Then after, we provide the findings

followed by the discussion and conclusion.

2. Theoretical background

Our theoretical framework is situated at the intersection of two bodies of literature. The first pertains to organizational decline and innovation, while the second focuses on the concept of learning from failure.

2.1. Organizational decline and innovation

When an organization's capabilities, structure, or culture are out of step or misaligned with the demands of the external environment, a misfit emerges, which eventually results in a loss of competitive advantage or decline (Miller, 1992). The failure to anticipate or recognize the need to adapt an organization's products and services to its internal and external environment can result in organizational decline (Døjbak Haakonsson et al., 2008). The failure is, therefore, a result of a misfit that may involve employees or even a whole organizational structure or culture that is not in line with the objectives and core values of the organization, as well as a maladaptation of its products and services to its external environment (e.g modifications to the competitive environment or shifts in consumer preferences) (Habersang et al., 2019; McGrath, 2010; Nadler and Tushman, 1989).

Accordingly, organizational decline refers to a reduction in the resources and performance of an organization over time (Cameron et al., 1987a; Sheppard, 1994). The decline is gradual and owing to a mix of internal and external factors, including deteriorating market share, outdated goods, and poor management practices (Johnson et al., 2007). The decline may be worsened by the organization's inability to adapt to its changing environment (Voelpel et al., 2006). As a result, any organization, regardless of its size or sector, can experience organizational decline, and if it fails to adapt to its changing environment (Trahms et al., 2013; Heine and Rindfleisch, 2013). Studies suggest that organizational decline is a widely diffused experience across organizations (Trahms et al., 2013), with small and medium-sized firms being more vulnerable to a decrease in performance, competitiveness, and viability, leading to a possible failure or loss in market share (Sawang and Unsworth, 2011).

Organizational failure can manifest in several ways, including a loss of legitimacy (Benson, 1975; Sutcliffe and Huber, 1998), a reduction in market size (Harrigan, 1982), declining financial resources (Cameron, 1983), negative profitability (D'Aveni, 1989; Hambrick & D'Aveni, 1988), strategic misalignment (Bello and Zango, 2022) and withdrawal from international markets (Burt et al., 2002; Jackson et al., 2005). These are all signs of organizational failure making it challenging for organizations to create and put into action plans that are in line or fit with the requirements of the external environment (Mellahi et al., 2002; Starbuck et al., 1978). As such, it can lead to short-term effects such as negative cash flows and long-term effects such as bankruptcy (Mone et al., 1998).

According to research, organizational misfit may be resolved by strengthening an organization's capability for absorbing, assimilation, and application of new knowledge (Zahra and George, 2002). Organizations may more effectively adapt to changes in the external environment and create strategies that fit these changes by enhancing their absorptive capacity. So, in remaining competitive, organizations need to achieve a fit between their external business environment and internal operations (Miles and Snow, 1984; Porter, 1985; Lawrence and Lorsch, 1967).

In finding the fit, organizations need to innovate (Mckinley et al., 2014). Innovation is any action taken by an organization in response to its decline and intended to transform processes, products, or business models (Kahn, 2018; Amabile, 1996; Amabile and Conti, 1999). Innovation can occur in various organizational sectors, including goods, services, processes, and business models, and can take many different

forms, such as gradual advancements or drastic transformations (Kahn, 2018; Salerno et al., 2015).

Past studies have looked at the connection between organizational decline and innovation (Heine and Rindfleisch, 2013). On one hand, the main conclusion is that organizations in decline may have trouble innovating because they may be hindered by a lack of resources or a risk-averse culture (Van de Ven and Sun, 2011). In other words, the decline in organizations obstructs adaptation and innovation or the firm fails to react to the decline or changes in the environment (D'aveni, 1989). As a result, theories such as the Dynamic Capabilities Approach (DCA) (Kindström et al., 2013; Lawson and Samson, 2001) and Resource-Based View (RBV) (Kim et al., 2015) have emphasized the importance of organizational resources and capabilities in promoting innovation, suggesting that organizations must allocate resources and develop capabilities that enable them to continuously generate and implement new ideas. On the other hand, to counteract decline, organizations need to continuously invest in their resources leveraging on their key assets to adapt to changing circumstances (Lorange and Nelson, 1987). That is, innovation may also play a significant role in turning around a decline by assisting organizations in identifying new possibilities, developing new income streams, and regaining their competitive advantage (Kim and Mauborgne, 2004). In this sense, the organizational decline triggers adaptation and innovation (Mone et al., 1998; McKinley, 1993). For instance, when incumbent organizations are facing decline as a consequence of markets being revolutionized with radical technological innovations, may stimulate the adaptations in the incumbent organizations (Hill and Rothaermel, 2003).

These strands of literature on organizational decline and innovation are inconsistent (McKinley et al., 2014; Mone et al., 1998), and to further deepen the explanation of the connection between organizational decline and innovation, several theoretical frameworks have been established. Holling (2001) adaptive cycle model is offering a framework for comprehending how organizations adapt and change through time, which can assist in coping with the inconsistencies in the organizational decline and innovation literature. According to the framework, organizations go through stages of growth and innovation, followed by decline and crises, and finally restructuring and renewal. Organizations in the growth phase prioritize innovation, growth, and improved productivity. Organizations get increasingly complicated as they develop and evolve, though, and as a result, the risk of failure and decline rises (Folke et al., 2010). This results in the conservation phase, where organizations concentrate on preserving stability, cutting risk, and safeguarding their current assets (Walker et al., 2004). Disruption, crisis, and decline are features of the release phase. This might be brought on by internal causes like poor leadership or organizational stagnation as well as external factors like changes in the market (Gunderson and Holling, 2002). The organization could need to restructure, scale back, or possibly disintegrate during this phase. Innovation and renewal are the last characteristics of the restructuring phase. To adapt to shifting consumer needs, organizations may restructure, adopt new business strategies, or create brand-new goods or services (Andriopoulos and Lowe, 2000).

Another theoretical framework explaining the link between organizational decline and innovation is the ambidexterity model which stresses the significance of striking a balance between innovation and efficiency (Raisch and Birkinshaw, 2008). Organizations that place an excessive emphasis on efficiency run the risk of becoming complacent and resistant to change, while those that place an excessive emphasis on innovation may forget their core competencies and miss out on available possibilities (He and Wong, 2004). The ambidexterity model contends that organizations must strike a balance between the exploitation of current resources and competencies and the investigation or exploration of new opportunities (O'Reilly and Tushman, 2013; He and Wong, 2004). Finding such a balance can be especially crucial during decline when organizations may need to look in new directions to discover new sources of development (Schulze et al., 2008; Gibson and Birkinshaw,

2004).

The contingency framework also seeks to integrate the inconsistency in the organizational decline and innovation literature. The framework by Mone et al. (1998) highlights factors at the environmental, organizational, and individual levels of analysis that affect whether organizational decline prevents or fosters innovation. The contingency framework stresses how the environment plays a significant role in influencing organizational decline and innovation (Damanpour and Schneider, 2006). Accordingly, certain approaches and methods may be more effective in different organizational settings, and organizations must also adapt their strategies to fit their specific situation (Miles et al., 1978). By emphasizing the significance of taking into account contextual factors when building and executing organizational change initiatives (García-Morales et al., 2008), the framework helps to explain the discrepancies in the organizational decline and innovation literature. Organizations that rely on generic or one-size-fits-all strategies rather than taking into account their particular conditions may find it difficult to attain their goals (Siggelkow and Rivkin, 2005). Organizations must be adaptive and flexible, and they must be prepared to try out various strategies and techniques in order to determine which ones are most effective given their specific situation (Williams et al., 2017).

The organizational decline can both result from and lead to organizational adaptations and innovation. The factors that impact organizational responses are complex and interconnected, involving both internal and external variables within the organizational environment (Peretz, 2021). Organizational responses to declining resources may include seeking new or alternative sources of support, strategic partnerships, or downsizing operations (Salancik, 1978). On the other hand, declining institutional legitimacy may lead organizations to accept changing rules and practices, adopt new guidelines, or reorganize their operations (Kondra and Hinings, 1998). It is important to note that organizations have the potential to learn and turn around decline (McKinley et al., 2014). Organizations may allocate their attention and resources to different learning activities, including the exploitation of current resources and competencies, and the exploration of new opportunities (March, 1991). This requires a sound business strategy and a thorough understanding of "how to change" (Kücher and Feldbauer-Durstmüller, 2019). To gain a comprehensive understanding of organizational decline and innovation and adaptation, it is necessary to explore the learning dynamics of organizations given their varied failures that may lead to decline. By doing so, we can provide a complex and well-supported viewpoint on the topic.

2.2. Learning from failure

The concept of failure in organizations is typically defined as the inability to achieve the intended objectives of an initiative or hindrance to the core operations of an organization (Cope, 2011; Mueller and Shepherd, 2016). Although failure often has negative effects, it may also provide valuable lessons for organizations to learn from and improve upon (Miner et al., 1996). This is where organizational learning comes into play, which can help organizations turn around failures and use them as opportunities for growth (Madsen and Desai, 2010).

However, the literature on organizational learning highlights that some organizations are able to learn from failures, while others are not (Cannon and Edmondson, 2005). There are two main streams of thought when it comes to organizational learning. The first stream emphasizes the need for constant adaptations, which mandates organizational strategies and a thorough knowledge of 'how to change' (Kücher and Feldbauer-Durstmüller, 2019). In the short term, organizational survival can be improved through exploitation strategies, including refinement, continual development, and increased efficiency of fundamental characteristics and skills (Amburgey et al., 1990). However, for intermediate or long-term organizational survival, exploration is necessary in terms of innovation and adaptations required to respond to changing environmental conditions (Nelson and Winter 1982).

Unfortunately, organizations that are focused solely on short-term survival, such as declining organizations, may neglect intermediate or long-term survival and the necessary adaptation processes, innovation, or strategic change, due to threat rigidity processes (D'Aveni, 1989). Therefore, finding a balance between the exploitation of current resources and competencies, and the exploration of new opportunities, is a learning approach that can provide a competitive advantage for organizations (March, 1991). Innovation is a key aspect of this approach, as it allows organizations to make the necessary changes to remain competitive (Kim and Lee, 2020; Kahn, 2018; Salerno et al., 2015).

The second stream of research on organizational learning from failure focuses on whether organizations can effectively learn from failures, and if not, what barriers may be present (Kücher and Feldbauer-Durstmüller, 2019). Studies in this area draw on a wide range of theoretical frameworks and investigate numerous levels to understand how organizations can learn from failure.

Various mechanisms have been proposed to explain how organizations can learn from failure. One aspect of the literature suggests that under certain conditions, organizations can learn from the failures of others through observation and apply that knowledge to their own operations (Madsen and Desai, 2010; Argote and Miron-Spektor, 2011). This is known as vicarious learning (Denrell, 2003; Kim and Miner, 2007). Vicarious learning is the practice of learning from the failures made by other people, groups, or organizations and applying what is learned to one's own procedures and methods (Kim and Miner, 2007). According to studies, vicarious learning may help organizations learn from failure, particularly when the environments in which they operate are similar (Kücher and Feldbauer-Durstmüller, 2019). This is so because, the context in which organizations operate plays a critical role in this process, as organizational experience interacts with the context to create knowledge (Argote and Miron-Spektor, 2011; Muehlfeld et al., 2012). In particular, the study of Zeng et al. (2022), observed that context plays a crucial role in the learning process as they find out that the learning effect of firms weakens as the cultural distance between them increases. The fact that organizations do not have to personally experience the failure in order to learn from it makes vicarious learning a low-risk approach to failure learning. It is crucial to remember nevertheless that vicarious learning is not always efficient (Argote and Miron-Spektor, 2011). Organizations can struggle to apply the lessons learnt from the failures of others to the circumstances specific to their own (Baumeister, 2010). Organizations may also be reluctant to accept other people's techniques or encounter opposition from stakeholders who do not value learning from other people's failures (Sitkin, 1992).

Another way in which organizations can learn from failure is through "intelligent failures," which allow firms to adapt to new environmental needs at low risk (Sitkin, 1992). This type of failure is considered valuable because it enables organizations to experiment and learn from the results, which can lead to innovation and growth. Intelligent failures are planned, well-executed experiments that do not provide the desired result but also offer insightful information and learning opportunities (Sitkin, 1992). In fact, some studies suggest that organizations can learn more effectively from failure than from success, as the slower depreciation of failure provides more learning opportunities (Madsen and Desai, 2010; Sitkin, 1992). Organizations are more likely to effectively innovate and adapt to changing surroundings when they view intelligent failures as learning opportunities (Dahlin et al., 2018). Also, building a culture of psychological safety where people feel comfortable taking risks and discussing their failures is another important aspect of learning from intelligent failures (Edmondson, 2018). For organizations to encourage creativity and continual learning, this kind of culture is crucial. In particular, organizations may use a trial-and-error method where they analyze the results of their actions to derive insights and change their course of action (Baum and Dahlin, 2007). Also, by deviating from a pattern that has already produced positive results and facing a negative outcome, organizations may recognize the crucial role played by the formerly utilized patterns and learn from them (Bingham

and Davis, 2012).

Still, to come, another learning mechanism is the feedback and reflection approach which involves teams and individuals in a process of analysis and debriefing to determine what went wrong and how to improve going forward (Argote et al., 1989). Also, using analogies, where organizations use the knowledge gained from previous failures or achievements in comparable circumstances to guide their decision-making is another way organizations learn (Sitkin and Weingart, 1995). Moreover, organizations may also gain insights for their course of action when they engage in learning experimentally and also by improvisational learning in real-time (Miner et al., 2001).

However, other studies suggest that learning from failure is often ineffective or does not occur, leading to incorrect conclusions (Baumard and Starbuck, 2005). Several barriers exist at the individual, group, and organizational levels that prevent effective learning from failure (Argote and McGrath, 1993). At the individual and group levels, high self-esteem, stigma, and perceptions can be significant barriers (Cannon and Edmondson, 2001). Organizational-level barriers may be attributed to organizational culture (Schein, 1996, 2010; Edmondson, 2018), resource levels (Tushman and O'Reilly, 1996), leadership style (Gino and Staats, 2016; Roux-Dufort, 2000), and industry expectations and norms (Christensen and Bower, 1996; March, 1991).

While several studies have explored factors influencing learning from failure (Dahlin et al., 2018), limited research has focused on how organizations can learn from different types of failures as a result of misfits within organizations and with their external environment. Some studies have examined how organizations learn from small versus severe failures (Keith et al., 2020) or recurring versus one-time failures (Madsen and Desai, 2010). Also learning from traditional failures (i.e. traditional learning is a correct process with a good result, where the result drives actors to keep improving and/or making use of the process to get the result even better) versus spurious failures (i.e. when good procedures result in undesirable results) (Dahlin et al., 2018), but they neglect to link the learning from failure to the different misfits that occur. Recent research has investigated how completing crucial organizational activities, such as organizational change, creativity, and innovation depends on the ability to make sense of unfamiliar, unclear, or puzzling situations (Maitlis and Christianson, 2014).

Our interest in framing the learning process from failure stems from Ansari et al.'s (2010) theory on how practices vary as they diffuse and are implemented. We propose that the way organizations learn varies depending on the nature of failure as a result of the misfits they experience (not in terms of severity or occurrence nature). The mechanisms enacted to learn will depend on the failure type faced. Learning only occurs in particular situations, and it is crucial to learn from failures as with other positive outcomes of failure (Frese and Keith, 2015). With time, learning from failure can be enhanced, reducing negative feelings and removing barriers to learning from failure (Shepherd et al., 2011). Therefore, organizations must leverage available resources and make quick decisions between maintaining the course and departing from pre-planned routines when faced with failure (Williams et al., 2017; Eisenhardt, 1989).

3. Methodology

This paper uses a multiple case study approach to examine the link between the nature of failure experienced by firms and their organization response, shedding light on factors determining their embraced learning approaches after perceiving an organizational decline. We selected this approach as we intended to analyze the phenomenon in its complexity (McCutcheon and Meredith, 1993), examining firms' learning patterns and their dynamic nature depending on the nature of failure and other "not considered" events which play a relevant role in providing explanations (Pettigrew, 1992). Adopting multiple case studies also create conditions for holistic and contextualized research, as the approach entails the collection of a wide array of data (Hartley,

1994) and allows to have a cross-case comparison in order to identify emerging patterns of relationships among constructs that conduct to the generation of relevant insights (Eisenhardt and Graebner, 2007; Flynn et al., 1990). Additionally, case studies are particularly relevant for exploring contextual conditions like the one driving our study (Yin, 2003). Multiple case studies also allow for a replication logic approach in which each case is treated as an experiment that may confirm or confute the emerging theoretical insights (Eisenhardt and Graebner, 2007). Thus, the theory emerging from the multiple case research approach is more generalizable and has a better ground than single case studies, making it more amenable to extension and validation with other methods (Davis et al., 2007). As suggested by Eisenhardt (1989b) and Voss et al. (2002), theory building aims to identify and describe the key variables, the links among them, and why these relationships exist.

3.1. Research setting and data collection

In conducting a multiple case study, we aimed to analyze organizational responses to organizational decline and identify conditions for different organizational learning patterns and mechanisms to emerge. To achieve this, we selected firms that had experienced recent declines and were in the process of rectifying related problems. We chose firms that had encountered relevant exogenous shocks in order to observe the variability of their effects on each selected firm. We argued that within the context of a broader shock, firms will encounter different types of misfits with the environment, resulting in major revenue decline and losses in resources.

As such, we selected firms that were new to the market and attempting to introduce new products or technologies to face competitors, firms new to the sector attempting to enact an increased control over unknown industry forces through updated organizational strategies, firms new to the geographical area where they operated to study the political distance between firms and the adopters of their products, and firms new to the target of potential adopters of their products to create a condition of cultural distance. We also preferred companies with a low level of mission institutionalization, presenting relaxed expectational constraints on the nature of their organization's activities, and facilitating innovation when faced with decline.

Furthermore, we preferred small and medium-sized companies to better follow the dynamics of learning within each firm and their interrelation with the change in the environment. For this reason, we focused on AgriTech firms operating in Ghana's agriculture sector, aiming to diffuse their digital innovations and services to local farmers for less than a decade. The entry of AgriTech firms into Ghana was attracted by the local interest and focus of governments directing investments on the development of digital solutions in agriculture. Many development agencies also participated in supporting the growth of the Ghanaian agriculture sector, recognizing the transformative potential of digital innovations. The agricultural sector in Ghana was indeed crossing a rapid transformation with the rise of new technologies, leading Agritech companies to invest their resources in Ghana. Since their introduction in Ghana, these companies had attempted to address several issues in the agricultural chain ranging from production to distribution. At the time of data collection, Ghanaian agriculture was dominated by traditional smallholder farms, which typically covered fewer than 2 ha, and farmers, were often among the rural poor and food-insecure. Agritech companies were looking to work with small farmers to find innovative ways to boost the agricultural economy by leveraging on digital tools. With the support of government policies and funding, these companies were leading the modernization and growth of agriculture in Ghana and had the potential to affect economic development in the country. Ghana's small scale farmers needed help to switch to modern commercial agriculture. In particular, they needed better infrastructure, equipment, inputs and technology, as well as facilities for storing, processing and marketing produce.

They also needed help to overcome climate-related hazards,

including dry spells and droughts, degradation and erosion of arable land, and intermittent floods and resulting infrastructure damage.

Most of our sample firms had faced a stage of organizational decline, triggering them to invest more resources and, in the long run, adapt to the needs of their environments. Most of them had recognized relevant misfits with the environment, considering their status as outsiders to the local politics and their work with unfamiliar communities of smallholder farmers typically resistant to novelty. Being aware that they had to struggle to make the technology affordable with the help of governments, these firms also experienced economic misfits. This situation created an interesting dynamic where the AgriTech firms had to learn and adapt quickly to succeed in different and unfamiliar contexts. Therefore, analyzing this target population provides a unique opportunity to study how differential learning is influenced by the various types of misfit they have to encounter, proving to be the perfect target population to consider for a research on differential learning processes depending on different types of misfit.

Consistent with contingency determinism, we posit that a change in contingency variables generated by observed exogenous shocks evokes adaptation of the focal organizations (e.g., Burns and Stalker, 1961; Lawrence and Lorsch, 1967; Blau, 1972). We selected these firms for our study to learn about their learning behaviours per type of misfit.

The set of cases considered is presented in Table 1. For each case, we employed various data sources, including both qualitative and quantitative data gathered from primary sources via semi-structured interviews, as well as secondary sources such as publicly available and private data from press reviews, websites, and official company documents such as website and archival documents, and materials provided by our informants. To achieve a comprehensive understanding of the dynamics at play, we employed various data collection methods. Our objectives were two-fold: to expand our information pool and to minimize potential biases by diversifying our data sources, as recommended by Patton (2002, 1990) and Yin (2003).

We conducted 22 semi-structured interviews of 38–120 min over 4 months, interviewing informants multiple times and from multiple levels of both firms.

Informants included the strategic managers and the managers of the different areas of the AgriTech firms with a relevant and holistic view of the strategic reactions firms made as a reaction to their decline (i.e. R&D directors for the product, marketing directors for the relationship with customers and financial officers for revenues/costs). Interviewing multiple informants at multiple levels and at different times leads to richer and more reliable emergent theory (Eisenhardt, 1989b; Miller and Glassner, 1997). To maintain coherence and consistency, we developed a standardized interview protocol to ensure that interviews were conducted in a systematic manner. The protocol included the following topics.

- Overview of the company's strategy and general business model
- Explanation of the key components of the business model
- Discussion of any major changes or disruptions that have occurred
- Discussion of how they realized the major changes or disruptions
- Discussion of how the major changes or disruptions impacted their business operations
- Discussion of how they handle the major changes or disruptions internally
- Explanation of the lessons learnt
- Discussion of how their interaction with the business environment helped them in realized what needs to be changed
- Discussion of the actors helping them to realize the needed changes they had to make
- Discussion of the entire Ghana agriculture sector and the intended value offerings they are bringing into the sector
- Discussions of their motivations for leveraging digital innovations and for engaging in the agriculture sector

Table 1
Studied cases and characteristics of the participants.

Case #	Type of AgriTech Firm	Year of establishment	Digital Technologies & Innovations	Interviews	Job role
1	Market access to farm produce and finance	2015	Mobile applications & interactive voice response (IVR) services	2	Project coordinator Monitoring & evaluation officer
2	Market access to farm produce and finance	2017	Web & mobile applications, Unstructured Supplementary Service Data (USSD)	1	Founder & CEO
3	Agricultural service (Crop protection)	2019	Drones	2	Founder & CEO Founder & Market operations
4	Agricultural services (disease detection and chemical spraying)	2018	Drones and mobile applications	1	Data analyst and drone operator
5	Agricultural services (cattle monitoring)	2017	RFID, GPS location monitoring, rumen bolus	1	Co-founder & CEO
6	Market access to on demand farm technologies and farm produce	2020	Web & mobile applications, USSD	2	Co-founder & CEO Co-founder & market operations
7	Farmers management systems	2016–2019 (before closure)	Mobile tablets and feature phones	1	Co-founder & business analyst
8	Precision agriculture solutions	2018 (as a project) 2020 (as a business)	Artificial intelligence (AI) solutions, drones	1	Founder & CEO
9	Market match maker for both farm produce & finance	2019	Web & mobile applications	1	HR & M&E
10	Agricultural services (post-harvest and warehouse management)	2018	Green moisture meter, hermetic storage technologies & warehouse climate condition monitoring systems	1	Founder & CEO
11	Agricultural services (digital solutions for green houses and training) and market access	2018	Mobile applications	1	Technical officer
12	Agricultural services (mechanization services backed with technology)	2016	Web & mobile applications	3	CEO Administrator Technical officer
13	Market access to farm produce	2017	Web-based system and mobile application with USSD	3	Founder & CEO Market coordinator (twice interviewed)
14	Agricultural services (mechanization services) and market access (credit extension)	2017	Web & mobile applications	1	Co-founder & CEO
15	Agricultura services (post-harvest storage systems)	2013	Solar systems, sensors and digital cameras	1	Founder & CEO

- Discussion of the way forward for digitalization for agricultural development

To reduce the effects of informant bias, we utilized interview guides that directed informants to describe the objective events, behaviours, and factual details of the business model reconfiguration in a chronological manner. Additionally, we collected secondary data from both on-site sources and the media regarding these changes to cross-check and verify the information obtained through our interviews, following the triangulation method (Golden, 1992; Miller and Glassner, 1997).

In addition to conducting interviews, we utilized observation as a qualitative data collection tool (Bansal et al., 2018; Bansal and Corley, 2011; Kawulich, 2005) to gather information about the firms. The first author of the study also witnessed the presentation of solutions for Case Number 6 to a development agency and observed feedback given to improve their solutions. The team emerged as winners and secured seed capital to introduce their digital innovations to the market. To complement the information gathered from interviews and observation, we also reviewed secondary data sources (Ruggiano and Perry, 2019), including annual reports, industry reports, and academic journals.

3.2. Data analysis

We initiated our research by conducting a thorough analysis of each case, focusing on our research question (Eisenhardt, 1989b): How do firms respond to different misfits within and in their environment? We did not have any preconceived theoretical preferences or hypotheses. Each case was reviewed independently to form individual perspectives. Our objective was to independently identify theoretical constructs,

relationships, and longitudinal patterns within each case and their relevance to our research question. We utilized tables and graphs to facilitate analysis (Miles and Huberman, 1994). For each case, we developed an understanding of the key learning pattern and mechanisms used for each misfit and their link with the organizational response, which were then cross-checked by referring back to the data and, occasionally, by consulting with the informants. In addition, we observed interactions among the organizational factors, the invoked learning patterns and mechanisms and established links among emerging categories, leading to specific patterns of decisions from the data. The next step was cross-case analysis, in which we compared the insights from each case with those of other cases to identify consistent patterns and themes (Eisenhardt and Graebner, 2007). The focal firms and decisions were grouped randomly and by variables of potential interest to facilitate comparisons and develop propositions. Comparisons were initially made between diverse pairs of cases, and as patterns emerged, additional cases were incorporated to develop more robust theoretical concepts and causal relationships. Discrepancies and agreements in the emergent theory were recorded and further examined by revisiting the data. We followed an iterative process of cycling among theory, data, and literature to refine our findings, relate them to existing theories, and clarify our contributions. The data analysis took another six months and resulted in a theoretical model of how entrepreneurs shape boundaries in emerging markets.

4. Findings

We argue that failure due to technical, cultural, political and managerial misfit triggers different mechanisms and patterns of

learning. As it is difficult to operationalize an organizational failure to detect different warning signals in the firm's external and internal environment, we present below the managerial perceptions that four categories of misfits have occurred. Then we illustrate the different patterns of learning that emerged per type of misfit and go on to present the different learning mechanisms enacted to adapt.

4.1. The technical, cultural and political and managerial misfits emerged from the field

4.1.1. The emerged technical misfits

At beginning of their life, some AgriTech firms experienced relevant clashes between the characteristics of their products and services and their organizational capabilities. This was the case for an agricultural service AgriTech firm that developed its products and services leveraging very complex technological systems which demanded unexpected organizational resources. The CEO told us about the usage of artificial intelligence and about their unexpected difficulty to work in the cloud or to employ multiple PCs.

You see, building an AI system requires a lot of computational power, which was a challenge in the beginning. We need a lot of data now, and if you have a lot of data, you can't just use single computers anymore. You need either like HPCs or Cloud Computers and everything like that. That was a challenge [CEO of an agricultural services firm leveraging drones and AI technology].

In other cases, AgriTech firms attempted to develop their in-house solutions underestimating the competencies required. Soliciting external expertise would have implied additional and unexpected costs in the production stage inducing firms to fix their technological gap with some self-training activities.

Yeah initially I have videos of myself trying to build most of our product with the help of some people which was not an easy task woefully things went wrong a couple of times...we didn't have a lot of trained experts to enable us to do it even though we had the guidance [Quotation from the CEO and co-founder of an agricultural service AgriTech firm].

In some other cases, AgriTech firms overlooked relevant inter-organizational dependencies for the deployment of their service and solutions which could imply the acquisition of additional technological tools.

...and then in the middle, we have to deal with logistics because if you don't get a very trusted driver or logistic firm..., because I mean the goods are in transit so you have to deal with drivers sleeping on the road for days. And for exporting even, we have to look for a generator to power the refrigerator container because the items are perishable and all that. So these are the challenges [Quotation from the assistant manager of a market linkage AgriTech firm].

Other times technological misfits were due to firms' lack of awareness of the status of local infrastructures such as the telco and electricity networks inhibiting respectively the good functioning of the payment system AgriTech firms adopted for farmers and affecting their productivity.

Another thing is that network issues we trying to communicate with farmers and you can't really get through to them and when it has to do with the payment of their farm produce you need network services that is also a challenge that we can't change in our power [Quotation from a project coordinator of market linkage AgriTech firm].

A lot of problems with infrastructure like road networks, internet, and the likes (other problems) which affect general business activities on the continent are systemic issues like general light off as I am talking to you now, there's a general light off and all these things affect productivity in the likes [Quotation from the CEO of a market linkage AgriTech firm].

The absence of fit was also derived from the lack of firms' understanding of local regulatory regimes. This happened to a post-harvest management AgriTech firm with some interviewees reporting about the faced challenge of land acquisition. They need pieces of land to mount their cold rooms but that is a major problem for them.

Our issue number one is getting a space to mount these cold rooms. With Ghana's land turner system is very difficult to get land and if you are able to get one, the rent per mount or the money you have to pay even cripples your business before you start [CEO of a post-harvest management AgriTech firm].

4.1.2. The emerged cultural misfits

Due to local values and beliefs regarding foreigners, which AgriTech completely ignored, AgriTech firms faced some challenges in establishing partnerships and collaborations with farmers and other actors in the local food value chain. More specifically farmers' earlier experiences with individual and organizational actors buying their products made them close and not receptive to other actors' practices and products. Indeed farmers had observed mere misbehaviours with external actors in the recent past and resulting in being not willing to expose themselves to others outside their communities. The CEO and co-founder of a market linkage AgriTech firm mentioned:

I think the main thing has been the trust. Because you go to a farmer something you have not done is affecting him because one guy went to say give me this, I will bring the money next week and doesn't come back... Having allegiance with this kind of [farmer] is like you've signed a contract with them which doesn't really work as you go, that's how they do their business.

At the inter-organizational level, AgriTech firms experienced similar feeling also with their local business partners asking them to buy extra equipment as they were not willing to share what they had with AgriTech firms. AgriTech firms, on the other hand, being new players in the agriculture industry and of Ghana were not prepared to face these additional costs.

"As I said most of them don't really trust these startups so they wouldn't want to give you their equipment, they would want you to buy it but we as a startup we have not been in the system for long, so say we getting money to go and buy a tractor or tiller would be a bit difficult" [Quotation from the CEO and co-founder of a technology aggregation AgriTech firm].

AgriTech firms also soon realized that farmers' adoption of services of AgriTech firms was not so straightforward. The co-founder of one AgriTech firm confirmed this view as he stated:

You know working with farmers is difficult, it's not like trade where you go and buy and sell to another person and take your profit out of it [Co-founder and market lead officer of a farm technologies aggregation AgriTech firm].

One of the interviewees also mentioned that farmers were very conservative and prudent in their investments. They were used to have economic incentives to adopt new technologies. Indeed, AgriTech firms discovered that farmers received support from the local government making them dependent on the regulators to advance with the implementation of new technologies as the CEO of an agricultural service AgriTech firm stated:

Rather, farmers have learned to be over-dependent on the government for support and after any government intervention, farmers still want free farm inputs or related subsidies.

AgriTech firms were not prepared to tackle the closeness of farmers and their inertia in investing in machinery independently with the support of their government as one CEO stated during our interview.

Well, the biggest challenges come with working with smallholder farmers because they are not the most cooperative of people and they always want things to be done for them for free and so you always have to figure out how to manage those relationships” [CEO of a post-harvest management AgriTech firm].

Additionally from the later understanding of AgriTech firms, farmers were perceived as reluctant to automatize part of their production process due to the easiness to access the cheap and available workforce on the field. In line with that, the administrator of a mechanization AgriTech firm said:

Another thing is, farmers always feel like they don't have money.

They always feel like they don't have money for mechanization but you know what, they actually have but sometimes they feel like, getting people to work for them instead, it's cheaper than using the mechanization.

On the other hand, Agritech firms did not realize that the concept of automation was also difficult to grasp for farmers as a way to induce AgriTech firms to improvise demonstrations for farmers hoping to overcome their resistance as one CEO referred to us.

One of the funny things we faced was belief. You see when we even talk about automation some of the farmers did not understand what automation was so we had to stimulate it and invited them to come and see, so seeing is believing for many farmers it didn't sound true not that it didn't sound true but they had not experienced how it felt like [CEO of a post-harvest management AgriTech firm].

Other farmers had issues in identifying the potential value behind the implementation of new technology on the field, as they did not have the proper background to sense its value. AgriTech firms were not prepared for such a scenario and had to invest more effort in convincing farmers to try the new applications as reported by one CEO.

The illiteracy rate in Ghana is very high so when you are bringing out a product that barrier you face, the illiterates - they already tell you that what you have brought out won't work and is very difficult for you to convince them that you have a working product or a tested product [Founder & CEO of a post-harvest AgriTech firm].

In some cases, farmers did not find any trigger to break with their old way of working and with their traditions in farming which was the consequent implication of adopting new technology for their work on the field, especially considering that their habits were inherited by their family since decades as the CEO of technologies aggregation AgriTech firm told us.

[...]they are used to their old way of farming and so we coming in as the youth trying to implement or introduce technology into the system so sometimes it makes it difficult for them even though they know its something that will help them but their more incline with their old ways of doing things” [CEO of farm technologies aggregation AgriTech firm].

4.1.3. The emerged political misfits

AgriTech firms did not pay attention to the political factors as well during their expansion in Ghana, neglecting to consider issues of local competition and missing to strategize to cope with the interests of local groups for power.

They missed relying on a local mediator such as a local partner to help them to understand the local dynamics. This was particularly relevant considering that AgriTech firms were the first in the market to propose some technologies and they could not count on the observations of others. In line with what is said, the CEO of a mechanization access AgriTech firm commented on their market expansion in Ghana in the following way:

We failed in our first attempt to expand beyond Ghana, we tried scaling. We didn't work out the reason being that we didn't have a strong local

partner which is what we actually work within most of the places where we are currently doing well. Locals on the grounds do most of the grounds work ... for us to now back it with the technology and so we didn't have that in Kenya so we failed [Quotation from the CEO of a mechanization access AgriTech enterprise].

With a local partner, they would have avoided the initial issue related to the registration of their businesses in Ghana. Many CEO expressed their struggles about the long processes that they had to go through to finalize the registration of their businesses in Ghana and about their experienced difficulty to collect the required documentation. Agritech firms were also surprised to find a local barrier to foreign businesses that the Ghana government put in place asking for high costs of registration. Accordingly, the CEO and co-founder of farm technology aggregation AgriTech firm stated:

[...]the real one we had was the company registration by then and regulations as been foreigners. Am trying to avoid calling them challenges because for me they were learning points, they really were learning points. [...] I don't know if now they have evolved but then the cost was really higher, the penetration cost was real higher for foreigners than locals, the registration thing. it wasn't easy you know in Ghana registering your business it takes a whole lot of process [CEO and co-founder of a farm technology aggregation AgriTech firm].

AgriTech firms also discovered that some powerful interest groups could limit the diffusion of their technologies in the country despite the technical feasibility of their implementation in the field. Their observations were made especially in relation to government agencies which were not efficient and which could strongly affect their operations as in the case of cocoa fields as government agencies had the monopoly of cocoa production in Ghana.

If you do with them, they mess you up because if you are working on projects with other international partners they will damage your reputation before others and you'll be seen just as them”...[...]. “And for certain aspects of agriculture, you cannot avoid government agencies, especially when you want to work on cocoa. Cocoa is a heavily government-monopolised area because it's big money. So there are certain organisations, I will not mention their names, that have a lot of control in that space [CEO and founder of an AI agricultural service AgriTech firm].

AgriTech firms also developed a general dissatisfaction with the level of support they could receive from the government which also resulted in not taking into consideration the needs of businesses in their policy development activities.

Well for the government sometimes they can promise you but you must still keep following up if you just take their word for it you might just end up ... and even if any political person makes a promise to you, you would have to push to make it go through [Quotation from the CEO and co-founder of an agricultural service AgriTech firm].

The provision of policies to support the operations of certain firms was also lacking. Existing policies were enacted in isolation of the businesses making the business environment not enabling. As remarked by the CEO and co-founder of one of the agricultural services AgriTech firms:

So the major failure I would say is usually with the policy because any other partner we had they are also running their business but then the government policies are supposed to enable businesses run so not necessarily to run their business in distinction from us so the enablement wasn't there.

4.1.4. The emerged managerial misfit

AgriTech firms also neglected to develop proper managerial processes to tackle risks and to deal with the environmental uncertainties deriving for instance from their strong dependencies on others which

resulted in several losses for the firms. As the operations lead of one financial access AgriTech firm underlined, they missed practices of partner selection and risk management allowing them to develop an alternative plan to recover control from unexpected scenarios.

We have failed in a lot of things, you fund a business and the goods get stuck at the port and losses their quality and the price that you are expecting to sell don't sell that much and so you are short of funds. You know, that's failure" [Operations lead of a financial access AgriTech firm].

CEOs of AgriTech firms, in many cases, admitted to not having proper evaluation processes as they underestimated the impact that the entrance into a new industry and space would have brought to them. Indeed they claimed to be in the need to have more capital to continue their businesses. Indeed all interviewed firms expressed their challenges in raising capital in one way or the other. As remarked by the CEO and co-founder of a market and input access AgriTech firm:

Yes our main issue has been rising capital so we don't have adequate capital we would have loved to have certain equipment and machinery but we don't have so the way we solve it is to do a lot of partnerships.

In other cases, AgriTech firms seemed not to enact a clear form of leadership in the ecosystem of actors where they operated serving farmers. It resulted that AgriTech firms were not able to strategize on how to avoid the risk of internal competition. In fact, a CEO of a technology aggregation AgriTech firm told us that being in partnership with other firms (that provided farm technologies) they lost their customers because their partners went behind them and directly offered farmers their service.

With the tech guys you kind of help them one two they start going to the farmer directly so then you are losing your [customers] ... they must be a better plan on how you want to kind of build a relationship or how you want to kind of get them to pass through your platform to reach the farmers. In that case, you must build a robust model that the tech people will come and depend on, they would have to depend on it so they wouldn't have to go straight to the farmers [CEO and co-founder of a technology aggregation AgriTech firm].

4.2. Emerging patterns of learning depending on different types of misfits occurred

For technical incompatibilities related to AgriTech firms' introduction of new technologies into the farmers' field, AgriTech firms invested much cognitive effort, recognizing the usage of technology is not ontologically separate from the institutional context of farmers. For this reason, they relied on a local person, favouring AgriTech firms' understanding of the role of the social structure in the farmers' decision to adopt and use new technologies. So their learning originated from the social interactions they could reproduce building up a community of relevant people including the locally allocated person.

[...] ... for me being Kenyan can think we are way ahead but we had Nigerians in the team, we had that free understanding of the technologies that are needed and that gave us a help [...] and then we have locals in our team who knew the grounds and so that mixture of different cultures really helped improve the understanding so it helped us create a system that is locally sensitive but help us grow internationally cause we had an international mindset [...] [CEO and co-founder of a farm management AgriTech firm].

Given the relevance of the technical misfit for the diffusion of their technologies, AgriTech firms invested additional cognitive resources by allocating their agents to the field of farmers in order to get more insights about their social context and to better understand the emotional reactions of the farmers towards the proposed changes. Being immersed

and exposed to the farmers' interactions these agents could connect the emotions and cognitive positions of farmers to a more solid cognitive conceptualization of farmers' issues that the firms could use also for similar and future projects.

[...] we do have interactions with them [their agents] for them to share their experiences, we do go to the communities for the farmers to enlighten the agents about experiences as well. So when we are moving on to a different project we make sure that these problems that keep occurring, we try as much as possible not to face [...] and when they do face it they know how best to resolve it at that very instant. So it has really helped us a lot with the past experience to also grow in terms of the tech aspect" [Project Coordinator of a market linkage AgriTech firm].

what I have learnt so far is that whatever digital tools you are bringing you must first immerse yourself with the environment of the user to understand the world view of the user, understand the aspiration, the expectations when you have understood them then you tailor make the tools to help them adopt it easily than reject it [Technical officer of both market linkage and agricultural service AgriTech firm].

Being emotionally distant from the institutional order which they did not contribute to generating, and perceiving themselves more as cognitive misers, they also create conditions to realize a cognitive shift, as they systematically collected feedback after the deployment of new practices in order to check their preliminary assumption about what could work on the field. This is in line with what the CEO of an agricultural service AgriTech firm told us during the interview.

Because there's usually a bias that is created once you create a solution, it becomes stacked to it and then you try to force but you have to go back that's that process of product market fit. Then you go back and find out if is this really helping you. What else if we add that to this will it really help you? So yeah [CEO of an AI agricultural service AgriTech firm].

Often the technical misfit is derived from a limited technical knowledge of AgriTech firms which resulted in a restricted ability to reduce the misfit. In these cases, the AgriTech firms preferred engaging in a limited implementation of their technologies avoiding relying on partnerships. AgriTech firms explained the relevance of doing cognitive investments to reduce the technical misfit by investing in their resources as a precondition for entering and functioning effectively in the agricultural field.

[...]but if we had one with an agriculture background would have helped either working with the companies or running a business that failed you learn along with it. So let me say we were fresh in agric (the agriculture space) because I now noticed before the company went down we now got someone who had that experience. I was like oh God where were you all this while, because if you don't have such an experience even if you have a lot of money to buy the time to learn and if you don't have the money that is an asset, so you have to buy time with cash to allow you to learn [Co-founder of a farm management AgriTech firm].

From the explanation given by our respondents, we collected the reason for the AgriTech firms to put high cognitive investment to reduce the technical misfit. According to them, their learning effect would have allowed them to understand (explicitly and tacitly) what can be expected, given the firm's position in the field, as prescribed by their institutional order.

We've got the experience to move on if we should get some investment we know where we're going to and where we started from. So experience wise both from the customer side and then the supplier side we've gotten some experience. To add to that, I think there is a clearer path probably if you look at us from three years back, we wouldn't have all these things that we are thinking of [CEO and co-founder of a market linkage AgriTech firm].

To reduce some of the emerged cultural misfits, AgriTech firms

introduced new practices mirroring local norms and therefore acting more as cognitive dopes. In fact, in relation to the emerging cultural misfits, AgriTech firms felt quite uncertain about the value of the new practices they wanted to introduce on the field and as they were able to observe the actions of others, then they behaved as cognitive dopes blindly replicating the schema of deployment of other practices, despite it was against their interests. Indeed in the case of a post-harvest management AgriTech firm, its CEO indicated to us that they chose to replicate the existing division between males and females in the agricultural community of the Ghana region, having separate sessions of training for males and females.

However, there are some communities where especially in the north where males and females don't mix. Right. So, if you are doing training, you have to do it for males separately, you have to do it for females separately. And so, these kinds of social dynamics manifest themselves mainly in the communities, in some of the rural communities that we work with and not necessarily within our company [CEO of a post-harvest management AgriTech firm].

In some other cases, especially at beginning of their business, AgriTech firms did not feel any conformity pressure and did not develop any conformity model to better adapt their technology to the field. Thus, AgriTech firms felt themselves in the position to experiment with new practices without taking into consideration adapting them to the local needs and in a manner that they could work for farmers.

So, we started [...] and we call this model the Uber-like model. Initially when we started with this model, we actually wanted to, you know, we see ourselves as an Agri-Tech company. So, we actually wanted to eliminate the human factor on the ground completely. So, a request comes, somebody sits at the office, calls and verifies the information, deploys a tractor and that is all. But at some point, we realize that some of the farmers because they want you to come on time to serve them. They will actually mention huge acreage, you get there and it's not actually the number the farmer gave" [Administrator of a mechanization AgriTech firm].

However, they could learn and develop conformity models which restrained AgriTech firms' ability to adapt their technological propositions by implementing a version of their technology in a way to make it more acceptable to the farmers.

For instance, in the case of the payments for services rendered to farmers, AgriTech firms have made the payment system more flexible for farmers allowing farmers to pay either in cash or by farm products.

You either pay with your farm produce or you pay cash so we have made it so flexible that it's not centred on cash payment because at the end if the farm produce is ready the farmer can say fine since am owing this amount, I will use two bags of maize to pay and we accept" [Project coordinator, a market linkage AgriTech firm].

In some cases, they created the possibility to be paid through a third-party firm working already in cooperation with farmers.

[...] and small scale farmers, as is currently, we don't even charge them. In a sense that what we do for small farmers currently is paid for by international development agencies. Okay! And so, yes, we have some models that we need to get things to a point where [...] I wouldn't say we need to get things to where but what I was going to say was we need to get things to a point where small-scale farmers would pay for this" [CEO of an AI agricultural service AgriTech firm].

While the acquisition of technical knowledge was the means through which they could overcome the technical misfit, in the case of cultural misfit they could reduce the cultural misfit with the acquisition of cultural objects that they could use to make them useful to their businesses and in relation to local cultural expectations. Along this line of reasoning, they understood that there was a local cultural expectation that some farmer-based organizations could help farmers. So AgriTech firms, to reduce the misfit, invoked their intervention.

[...]. So, it was very difficult for them to make a purchase so we targeted some of the farmer base organizations. They usually take care of the farmers, they (farmers) pay dues, and they make sure the farmers have a very good environment to keep their animals. They were willing to support the farmers by paying for it" [CEO of animal-based Agricultural service AgriTech firm].

Once their technologies were sufficiently modified and therefore made less complex, in order to extend their degree of freedom a bit further, they learned that they had to work on the legitimization of their novel propositions targeting directly the clients of their farmers supporting their business.

[...]. I think one of the main things is building additional services to support the businesses to raise funding. That's one way by which we have learned from the failure because, supporting the businesses to support their clients, allows us to be much more profitable. So we have learnt a good lesson" [Operations lead of a market linkage AgriTech firm].

Regarding the political misfit caused by the lack of trust from their customers, the AgriTech firms started monitoring their farmers, being attentive to collect their feedback in order to know how policing in order to become compliant with the expectations of their customers as an attempt to recover their trust and reduce the misfit.

we are open-minded, we accept new ideas because we need to evolve so when we do encounter these challenges that we know that sometimes it is beyond our control we don't just quell but then we try to voice it out to our actors to the agents and even to the farmers we tell them this is what is going on and sometimes you will be amazed at the response you get. You really wouldn't be thinking in that direction but then because you voiced it out and you getting their opinion helps you fix the problem [Project coordinator, a market linkage AgriTech firm].

In order to reduce the political misfit, AgriTech firms also tried to understand the decision models of their customers in order to reach a compromise with them, thus accommodating the political demands of their customers, leading to the implementation of a less extensive form of new practices.

[...] Usually, it's because of three things. A combination of them they are looking at which is better, okay! so which is producing more features or allows me to do more that is truly helpful to me? Not just a lot of features! okay! They are also looking at the speed which will allow me to do this faster and easier, but they're also looking at costs. And so it's usually a balance of all [CEO of an AI agricultural service AgriTech firm].

This limited adaptation pattern also required AgriTech firms to put their customers under scrutiny for a long time to detect any signal for the introduction of a new practice with little if any adaptation.

So what I have learnt is that you should be open to change you may plan, you may do all your projection but you get to the field and it's a different ball game altogether [CEO and co-founder of agricultural service and market linkage AgriTech firm].

On the other end, AgriTech firms tried to reduce the political fit and the divergent political interests within the ecosystems decoupling their field implementation of new technologies from their enacted behavioural conduct in the ecosystem. Indeed managers of AgriTech firms showed their interest in cognitively committing to reproducing an arrangement targeted at subverting or transforming the status quo of others' perception in their regards.

So I have learnt how to be professional and not let it get into your head at the same time, not shying and backing off. So I can say that is the mildest because we have had those who have even tried grabbing [...] like you can see that this respectable old man in the society and he just grabs your hand and am like are [Co-founder and market lead of a farm management system AgriTech firm].

Not being able to dominate the competition and not being active in strategizing with other interest groups for increasing their power or authority, they are limited to detecting the local norms and power structures to align completely.

[...]the policies most of the times these policies as a startup you really don't have control over them they do what they want to do unless of course you are being backed by a huge organization like the united nations [CEO of an agricultural service AgriTech firm].

In the case of managerial challenges, AgriTech firms attempted to reduce the misfit and searched for better financial outcomes mostly guided by a trial-and-error approach. In these cases, the focal actors realized that there was much that was unknown and many alternatives to choose from with little experience or others' backgrounds to rely on. Indeed the uncertainty regarding the viability of their elaborated business models in evolving market conditions indicated the suitability of an experiential 'trial-and-error' learning approach.

Well, it's been quite difficult. One of the challenges that typically agritech face is to provide your services to smallholder farmers, with a model that is affordable to them that they can pay for because smallholder farmer doesn't have the money, they don't have a lot of money. And so even though they might like your service a lot of time, they are not able to pay for it. It's usually a challenge to experiment and find out what small would affirm is like what they'll be willing to pay for [Co-founder and operations lead of technology aggregation AgriTech firm].

Through the try-and-error approach, AgriTech firms detected the relevant deviations and carefully modified their actions while avoiding changes in the fundamental aspects of their business. Managers are also all aware that this process was path dependent and they could get stuck on some wrong results inhibiting them to progress in the right direction to grow.

Well, we model our business models and then our services in a way that ensures that people have an incentive to use them. We try to offer alternative pricing, alternative payment methods, and basically try and understand the system. We are going to see what their peculiarities are and make sure that we are not coming in like some radicals, trying to change the whole system, but looking at how to augment what currently exists with our services and our products [CEO and founder of a market access AgriTech firm].

4.2.1. Different learning mechanisms per type of misfit

Regarding firms' learning efforts to reduce the technical misfits, AgriTech firms tried to make sense of farmers' reactions towards the proposed technological change multiplying their interactions with farmers.

So going on the field and then interacting with the farmers I think they are really interested but their fear will be maybe using smartphones because they don't really know much about smartphones and so that is why we are trying to employ this simple feature phones with the USSD code [CEO and co-founder of farm technologies aggregation AgriTech firm].

In many cases, farmers gave AgriTech firms signals about the instability of their earlier interpretative frame about farmers' behaviours.

[...] we started engaging the farmers in broader scale and we realize that for smallholder farmers they don't have the capacity to afford technology. [...] [Market lead and co-founder of farm technologies aggregation AgriTech firm].

Our data found that sensemaking processes were happening at different levels, at managerial and lower-level members of the organization. All were trying to understand the meaning of their reactions to the proposed change and its effect on them. Our evidence confirmed that sensemaking included both a structural component and a social component. At the structural level, the understanding gained by the

continuous interactions with farmers was systematically used in other similar projects.

We have taken the work that we do seriously that is why we are growing. In fact, we have even gone out of Ghana like she mentioned to you we work in Burkina Faso too. So, usually, because we want to grow the feedback we take from these farmers is also very important because the people that we work with the feedback we take on the ground is important that is what we use to tweek our platform to benefit other people" [Project coordinator of a market linkage AgriTech firm].

The social aspect of sensemaking had a fundamental role as the shared meaning arise mainly through emerging interactions with farmers or with others who were already engaged in interpreting and translating the farmers' initiatives.

So, when we started, it was basically me speaking to some scientists, trying to understand why agriculture in Africa is still where it is and why we are all plagued with all these issues. It was actually a coincidence, I think I went to see a scientist at the University of Ghana or KNUST to talk about one of our AI for health research. And then for some reason, I ended up speaking to someone who does something somewhere in between agriculture and health [...]. Also, the government agencies, the Ministry of Food and Agriculture, the international development agencies like GIZ had this corn-cashew project and they had learnt a lot. And so engaging them, asking them, like, from what you've learnt and this and this, what are some of the gaps?" [CEO of an AI agricultural service AgriTech firm].

Regarding the learning pattern observed to reduce the political misfit, firms used clustering with others as a means through which they could mimic other firms' behaviour. This happened as AgriTech firms could not observe and analyze all relevant environmental factors and were uncertain. Thus clustering triggered a social modelling process through which they could learn from the exemplary behaviour of a heterogeneous set of actors.

You know every community has its norms in terms of what is acceptable and what is not acceptable so we do also is to always engage the community by what we call community entry so when you engage the community you are able to tell the subculture of the community so it means that traditional leaders also help us in perfecting our work and opinion leaders if you like" [Project coordinator of a market linkage AgriTech firm].

In order to cope with the cultural misfit, AgriTech firms seem more inclined to learn about farmers' norms through systematic observation of their behaviours in different contexts and taking input from numerous sources.

First is observation, we observe we always have our field note books with us which we jot things down and also when we have the opportunity to record or take picture or videos so after which we just come and sit down and assimilate and take the pieces from there and move on [CEO and co-founder, a crop-protection AgriTech firm].

In addition, to make sense of the observations collected, our informants reported to us that their agents tried to use other external sources to find some help in interpreting what they had seen. They also tried to sort of disseminate the information collected which was also used to confront their peers about its meaning and implications in terms of action to trigger.

For now, is the field work, is the access to the internet and office space here, so we just learn from these two anytime we are on the field we observe and then update on whatever we have and just to come and sit here to read online [CEO and co-founder of a market access AgriTech firm].

In the case of managerial misfit, some managers underlined the need to explore the trial and error approach in order to build a sort of

cognitive map matching their perception of the environmental conditions with their prior knowledge about the relevant action to make. Indeed one CEO underlined the need to build standardized practices to manage businesses.

Yeah, like I told you, trial and error are the big things. Of course, we have failed in a lot of things, you fund a business and the goods get stuck at the port and losses its quality and the price that you are expecting to sell doesn't sell that much and so you are short of funds. You know, that's failure. So, like I said, a lot of the businesses, we need to learn the ways by which we can standardize these underserved businesses through trial and error [Operations lead, a market access AgriTech firm].

5. Discussion

Our findings have illustrated the interactive processes of relational adaptation of firms to different types of failures due to cultural, technical, managerial and political misfits with the environment.

In the case of technical misfit, we have observed a positive organizational response which helped firms to maintain a positive functioning in the face of detected technical problems. A strong cognitive response was observed, with most AgriTech firms relying on the involvement of a third-party actor more knowledgeable of the local environment and therefore able to understand, interpret and analyze the reaction of farmers to the new technologies introduced by the AgriTech firms. By intensifying firms 'exposure to farmers, firms also facilitated their adjustments assisting their decision-makers to pay attention appropriately. However, when resources were not available, they made time-sensitive decisions deviating from the planned routines and limiting their offering. So in the case of technical misfit, our findings show the AgriTech firms' ability to mobilize resources in the direction to activate relevant cognitive processes and demonstrated the ability to organize their resources accordingly to the events.

In the case of cultural misfits, we observed firms proceeding in the direction to reduce the level of uncertainty with a behavioural response. To solve emerging adverse situations, AgriTech firms tried different action repertoires with the enactment of structured habits learned from others' observations. Indeed AgriTech firms developed an awareness of the importance of aligning their specific tactics with overarching local strategies when developing an answer to the cultural misfit. Additionally, to solve severe adverse cultural misfits, we observed AgriTech firms developing critical resources such as specific tactics saving power including delegating to others their interventions by the farmers. In the case of political misfit, our findings show that failure was more accepted and considered as normal and part of the process. To anticipate and reduce political misfits, AgriTech firms moved in the direction to become closer to their context as it could give responses to their political adversities and could provide a fundamental setting for their cognitive and behavioural answers. Thus, to reduce the political misfit AgriTech firms worked on their level of connectivity with their context, intensifying their local connections in the ecosystems of local actors in order to have access to various resources. AgriTech firms with strong, densely connected ties which helped them to establish trust in the network and more understanding of shared norms among their communities, created conditions to reduce political misfit and to facilitate their recovery from it. Thus, for political misfits, different levels of social capital regulated AgriTech firms' capability to learn from the environment and to recover from the misfit. For managerial failure, our findings indicate that AgriTech firms' ability to answer to failure depended on the similarity of that specific misfit to difficulties that managers had experienced in the past. So, in the case of managerial misfit, prior experience with the specific misfit was linked to the firm's response given. Indeed, our results indicate that AgriTech firms were more willing to learn from experience with their specific problems and this learning was direct. In this case, learning from experience with this misfit encoded new organizational information, helped to form mental models and introduce new

knowledge into organizational routines which would influence future organizational answers.

Overall our findings show how, depending on the nature of the misfit with their environment, AgriTech firms differently understand, respond to and absorb the misfit. They also describe how, leveraging on different learning patterns and mechanisms, AgriTech firms depending on the nature of the experienced misfit build and use their capabilities, knowledge and skills and differently interact with the environment the misfit originates within the firm. Moreover, always leveraging on the different learning patterns and mechanisms deriving from each type of experienced misfit, our findings suggest that AgriTech firms are also able to build and use different resource endowments and organizing practices. Fig. 1 summarizes the mechanisms and the learning types which each type of misfit enacts.

Our findings indicate that both managerial and political misfits necessitate a higher level of active involvement within the local context, with an inside and outside view, respectively. On the other hand, technical and cultural misfits require data collection through external sources and observations from others. Furthermore, technical and political misfits were found to require more proactive information-seeking behaviours, fostering a more intense data collection process (see Fig. 2).

By illustrating how organizational factors are built and used as an organizational response to misfits, our findings emphasize that AgriTech firms' answers to the misfits evolve over time as the focal firms interact with the environment. In that regards our findings have illustrated the learning mechanisms and patterns for such dynamism. More specifically, we have emphasized that political misfit is recovered and anticipated through the learning occurred through organizational investments in social capital. Cultural misfits are reduced with the usage of others' repertoires which firms had learned with overtime observations and by developing tactics aligned with the overall social order. AgriTech firms' answers to the technical misfits were purely cognitive as firms collected feedback, intensified exposure to their farmers and used third-party actors to better understand farmers.

To summarize our results illustrate that the initial organizational responses to different types of misfits trigger different learning patterns and the usage of different learning mechanisms which in turn contribute to developing different capabilities, knowledge, resources and skills creating the basis for anticipating, preparing for and reducing different types of misfits. In this way, the different post-failure responses observed can be more easily justified.

Additionally, our findings tracing the organizational reactions to the learning mechanisms and patterns involved through the mediation function of specific organizational assets developed or used allow us also to emphasize the evolution of AgriTech firms' organizational response. Indeed, for each type of misfit, we know how the firms' answer to misfit differently contributes to building collective capacities, knowledge, skills and abilities as well as resource endowments, and organizing practices.

A large body of literature has reported that organizations learn from failure and that information opportunities such as about the reason for the failure experience impact the learning rate (Dahlin et al., 2018). Indeed failure experience brings more information than successful experience (Kim and Miner, 2007). However, even when there is the

Technical misfit: adaptive learning through collected data	Political misfit: learning through cross-boundary spanning
Cultural misfit: vicarious learning through observing others	Managerial misfit: learning from direct experience

Fig. 1. Learning mechanisms and types of learning for misfit, Source: Authors' illustration from interviews transcripts.

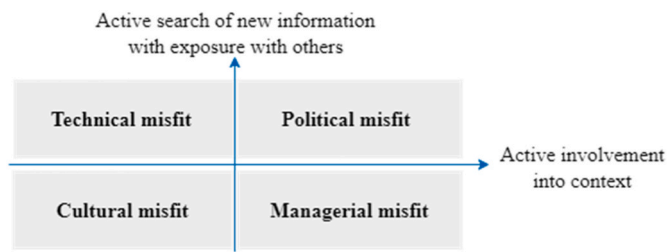


Fig. 2. Dimensions of learning actions for misfit, Source: Authors' illustration from interviews transcripts.

opportunity to learn from failure whether there is information learning may not occur (Dahlin et al., 2018). Past studies have discussed what enables learning and motivation studies focused more on why learning does not happen. In most cases, literature studies devote attention to one or (at most) two of the following dimensions affecting learning: opportunity (e.g. failure event with the availability of related information), motivation or ability leaving unexplored mechanisms affecting one another (Dahlin et al., 2018). If the opportunity to learn may create the conditions to learn (offering information for further analysis), motivation causes actors to trigger real organization responses aimed at collecting such information whereas the ability is about the assets, capabilities, knowledge, and skills converting the opportunity into performances. Our studies have contributed to clarifying the mechanisms that jointly affect failure learning and to looking at the interplay between the mechanisms between opportunity, motivation and ability with the ambition to study many different ways to stimulate failure learning.

Our results also contribute to further clarify the path dependency effect of learning from failure which past studies have identified, by seeing the number of failure experiences as a determinant of organizational learning (Dahlin et al., 2018; Desai, 2015). Indeed our study shows the relevance of past experience in solving managerial misfits and identifies the type of learning it enacts with the related capabilities to solve it. Our study also follows the recent trends and early attempts to include the cultural distance with the environment as an additional reason for the failure (see Zeng et al., 2022). Indeed our study specifies the effect of cultural misfit on the ability of firms to learn and clarify the type of learning it triggers.

While recent works, such as Zeng et al. (2022), underscore the role of contingency factors in bounding the learning effect of failure experiences, our study aligns with the perspective of Muehlfeld et al. (2012), emphasizing the importance of constructing a contextual theory of learning from failure. In this regard, we propose that the type of misfit with the environment represents a relevant contextual factor that helps interpret the diverse organizational learning responses to failure.

Previous studies, such as Baumard and Starbuck (2005), have considered the magnitude of failure as a contingency factor, initially assuming that organizations may find it challenging to cope with large failures. Managers may be more inclined to pursue incremental changes in firms' strategic domains rather than proposing reorientations involving dramatic changes that redefine the strategic domains. However, despite the initial aim of deriving relevant contextual factors justifying different learning approaches, their findings led to the conclusion that regardless of the magnitude of failure, managers who genuinely seek to learn from their experiences can do so.

Moreover, by identifying the organizational factors involved in the organizational response to different types of misfits with the environment, our study has also contributed to boosting our understanding of organizational decline as we have clarified how external factors and organizational factors interact causing the failure. Past research studies and literature reviews (e.g. Kücher and Feldbauer-Durstmüller, 2019) cluster explanatory factors for failure into organizational and environmental factors representing respectively a deterministic and voluntarist

view on the phenomenon) have treated the environmental and organizational factors as affecting the failure independently.

We also answer the call for more multiple case-study research to shed light on the effect of broad environmental dynamics setting the context within which firms operate (Mellahi and Wilkinson, 2004).

5.1. Limitations and future research

Our study is not without limitations. Limitations to our study include the following which provides avenues for future research.

The findings may not apply to other kinds of firms that are not operating in the agriculture sector as the study solely focused on Agri-Tech firms. Even though the characteristics of the agri-food industry in general and the Ghanaian agro-food industry, in particular, provide an interesting empirical setting, the results should be viewed cautiously when generalised to other contexts. Future research should study the different firms' responses to varied misfits in other industries and countries.

The study is based on a qualitative examination of case studies, which might not give an overall representation of the phenomenon being studied. While the current study has examined some of the contextual and organizational factors involved in the learning response of firms, much remains to be studied to explore the role of the organizational capabilities, and new concepts in creating and positioning practices of learning, both within the organization and at the interface between the organizations and the environment. Additional research leveraging on comparative case studies can offer relevant insights into the process of organizational learning from failure. Such studies would indicate how firms cope with misfits and how this process is influenced by the internal and external characteristics of the environment. We therefore hope that our current theorizing will put the basis for further conceptual and empirical analysis and that our developed framework can be further used for taking into account the dynamics of adaptation triggered by misfits and current firms' affordances.

The influence of outside variables, such as prevailing economic and political situations, on how AgriTech firms handle misfits is not explored in our study. More investigation is required to fully analyze the many types of misfits and their effects on AgriTech firms because our study does not do so. Scholars could study the effects of the socioeconomic and political conditions on these firms and examine how these influences affect the adaptive responses to misfits. A larger sample size or alternative research methods, such as a quantitative analysis of the influences could provide a broader perspective and enhance the robustness of our study.

In the context of learning from failure, it is important to acknowledge that the passage of time can introduce biases into the process. As time goes by, memories and the impacts of the failure event may fade to some extent. However, it is crucial to recognize that learning is a dynamic and continuous process. Past lessons are consistently reevaluated and adjusted based on new experiences, as highlighted by experts such as Corbett (2005) and Minniti and Bygrave (2001). In this light, it is noteworthy that participants' descriptions of their learning from failure represent an ongoing and evolving interpretative sense-making process. This process is not bound by the same temporal limitations as the recall of specific events linked to the failure. While the vividness of certain details might diminish over time, the essence of the experience remains enduringly significant from a learning perspective. It is worth noting that this study does face a limitation in not having filtered the companies based on their time frame in relation to the failure event. This oversight potentially introduces a confounding factor, as the impact of time on the participants' articulation of their learning could vary based on the duration between the failure and the study's assessment. Future research could consider stratifying the analysis based on this time frame criterion to provide a more nuanced understanding of the relationship between time, learning, and failure experiences.

Our study primarily examines the perspectives of Agritech firms'

responses to misfits. It may be beneficial to include multiple stakeholder perspectives and collect an ecosystem perspective, to gain a more holistic view of the phenomenon and its implications. Many scholars contend that today's disruptive innovations like the digital innovations leveraged by these Agritech firms are created and marketed in ecosystems rather than lone firms (Walrave et al., 2018; Fuller et al., 2019). With the highlights of our findings, the ecosystem view can help provide an understanding of how the interaction of the Agritech firms with other actors enhances their capacities to respond to the misfits. For future research, we invite scholars to provide these perspectives in understanding the transformation of the Agritech ecosystem.

Moreover, the digital innovations provided by Agritech firms are crucial in fostering interactions among diverse actors and driving organizational change (Greve and Taylor, 2000), however, our analysis does not take into account the interactions mediated and enabled by the technology as relevant sources of variations potentially able to influence the reaction to different forms of misfits. Therefore, we invite future research to explore how digital innovations can affect the learning process from failure.

5.2. Managerial implications

Although the growing interest of scholars to understand learning from failure in organizations, research indicates that "organizations are not learning all they can from their failures" (Tucker and Edmondson, 2003, p. 68) and many are also unable to learn efficiently from previous incidents (Cooke and Rohleder, 2006), or need to develop different mechanisms to be able to learn from failure (see Desai, 2016). Learning from failure is more challenging than learning from success. Our findings indicate that the type of misfit with the environment can be a valuable source of learning if firms can orchestrate their internal resources with managers able to collect lessons from mistakes and build external ties in order to acquire and interpret relevant knowledge to adapt. Particularly, our results show that managers or organizations have to acknowledge the inadequacy of their existing routines and tend to rely on others for the cultural misfit and attribute their failures to external contingent factors to avoid blame in case of the political misfit. Indeed, with the managerial misfit, the capacity of firms to respond to failure depends on how closely that particular misfit resembles failures that managers have previously faced. Managers can leverage prior experience with specific misfits to inform organizational responses and develop effective routines for addressing similar challenges in the future. This entails systematically storing and accessing lessons learned from previous encounters with specific failures, while also designing routines to integrate new knowledge into organizational practices. Indeed, over-reliance on past or incremental knowledge may limit the organization's ability to pursue and acquire new knowledge (March, 1991). To optimize performance, organizations should strike a balance between exploiting current resources and competencies and exploring new opportunities (Tushman and O'Reilly, 1996; Benner and Tushman, 2003; O'Reilly and Tushman, 2013). Therefore firms should draw valuable knowledge from their previous encounters with failures, directly incorporating new organizational information, developing mental models, and integrating new knowledge into their practices to inform future solutions.

While creating a response to the cultural misfit, firms need to become aware of how crucial it is to coordinate their unique methods with broad local initiatives. They ought to experiment with different action repertoires while putting into practice organized routines picked up from other firms' observations. Also, firms need to build crucial resources such as particular power-saving strategies, including assigning others to carry out the local interventions, in order to address significant unfavourable cultural misfits.

For the technical misfit, to comprehend, evaluate, and analyze how users respond to new technology, firms must invest in developing strong cognitive resources. Also, they should expose themselves to users more

frequently in order to help them adjust and pay attention effectively. They should also mobilize resources in order to activate pertinent cognitive processes and arrange their resources per occurrence of failure events.

Given the political misfit, firms should become closer to their context in order to predict and minimize political misfits, as this might help them respond to political adversity and serve as a foundation for their cognitive and behavioural reactions. They could improve their degree of context awareness by strengthening their local ties to local actors' ecosystems in order to get access to a variety of resources. Firms with strong and close links foster network trust and greater awareness of community norms, which lessen political misfits and speed up their ability to recover from them.

6. Conclusion

In this study, we looked at how firms respond organizationally to different misfits in the environment, such as managerial, technological, cultural, and political misfits. We achieved this by relying on interviews with AgriTech firms in Ghana. The study discovered that each form of misfit elicited a distinct response from the AgriTech firms, leading to the development of unique capacities, knowledge, resources, and skills. The study also revealed the significance of organizational resources like social capital in facilitating the patterns and learning processes involved in handling misfits. Overall, the study emphasizes the dynamic nature of organizational reactions to misfits and the significance of using organizational assets to foresee, prepare for, and minimize different misfits.

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Data availability

Data will be made available on request.

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References

- Ahn, J.H., Kim, M.S., Lee, D.J., 2005. Learning from the failure: experiences in the Korean telecommunications market. *Technovation* 25 (1), 69–82.
- Amabile, T.M., 1996. *Creativity and Innovation in Organizations*, vol. 5. Harvard Business School, Boston.
- Amabile, T.M., Conti, R., 1999. Changes in the work environment for creativity during downsizing. *Acad. Manag. J.* 42 (6), 630–640.
- Amburgey, T.L., Kelly, D., Barnett, W.P., 1990. Resetting the clock: the dynamics of organizational change and failure. *Acad. Manag. Proc.* 1990 (1), 160–164. Briarcliff Manor, NY 10510: Academy of Management.
- Andriopoulos, C., Lowe, A., 2000. Enhancing organisational creativity: the process of perpetual challenging. *Manag. Decis.* 38 (10), 734–742.
- Ansari, S.M., Fiss, P.C., Zajac, E.J., 2010. Made to fit: how practices vary as they diffuse. *Acad. Manag. Rev.* 35 (1), 67–92.
- Argote, L., McGrath, J.E., 1993. Group processes in organizations: continuity and change. *Int. Rev. Ind. Organ. Psychol.* 8, 333–389, 1993.
- Argote, L., Miron-Spektor, E., 2011. Organizational learning: from experience to knowledge. *Organ. Sci.* 22 (5), 1123–1137.
- Argote, L., Turner, M.E., Fichman, M., 1989. To centralize or not to centralize: the effects of uncertainty and threat on group structure and performance. *Organ. Behav. Hum. Decis. Process.* 43 (1), 58–74.
- Bansal, P., Corley, K., 2011. The coming of age for qualitative research: embracing the diversity of qualitative methods. *Acad. Manag. J.* 54 (2), 233–237.
- Bansal, P., Smith, W.K., Vaara, E., 2018. New ways of seeing through qualitative research. *Acad. Manag. J.* 61 (4), 1189–1195.
- Bai, M., Sieger, P., Eddleston, K.A., Chirico, F., 2017. Fail but try again? The effects of age, gender, and multiple-owner experience on failed entrepreneurs' reentry. *Entrep. Theory Pract.* 41 (6), 909–941.

- Baum, J.A., Dahlin, K.B., 2007. Aspiration performance and railroads' patterns of learning from train wrecks and crashes. *Organ. Sci.* 18 (3), 368–385.
- Baumard, P., Starbuck, W.H., 2005. Learning from failures: why it may not happen. *Long. Range Plan.* 38 (3), 281–298.
- Baumeister, R.F., 2010. *The Self*. Oxford university press.
- Bello, B., Zango, T.N., 2022. Organisational failure and turnaround: an empirical analysis of the defunct Nigerian telecommunications limited (NITEL). *Ifc Social Sciences Review* 30 (1), 27–43.
- Benner, M.J., Tushman, M.L., 2003. Exploitation, exploration, and process management: the productivity dilemma revisited. *Acad. Manag. Rev.* 28 (2), 238–256.
- Benson, J.K., 1975. The interorganizational network as a political economy. *Adm. Sci. Q.* 229–249.
- Bingham, C.B., Davis, J.P., 2012. Learning sequences: their existence, effect, and evolution. *Acad. Manag. J.* 55 (3), 611–641.
- Blau, P.M., 1972. Interdependence and hierarchy in organizations. *Soc. Sci. Res.* 1 (1), 1–24.
- Burns, T., Stalker, G.M., 1961. Mechanistic and organic systems. *Classics of organizational theory* 209–214.
- Burt, S.L., Mellahi, K., Jackson, T.P., Sparks, L., 2002. Retail internationalization and retail failure: issues from the case of Marks and Spencer. *Int. Rev. Retail Distrib. Consum. Res.* 12 (2), 191–219.
- Cameron, K., 1983. Strategic responses to conditions of decline: higher education and the private sector. *J. High Educ.* 54 (4), 359–380.
- Cameron, K.S., Kim, M.U., Whetten, D.A., 1987a. Organizational effects of decline and turbulence. *Adm. Sci. Q.* 222–240.
- Cannon, M.D., Edmondson, A.C., 2001. Confronting failure: antecedents and consequences of shared beliefs about failure in organizational work groups. *J. Organ. Behav.: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior* 22 (2), 161–177.
- Cannon, M.D., Edmondson, A.C., 2005. Failing to learn and learning to fail (intelligently): how great organizations put failure to work to innovate and improve. *Long. Range Plan.* 38 (3), 299–319.
- Cardon, M.S., McGrath, R.G., 1999. When the going gets tough... Toward a psychology of entrepreneurial failure and re-motivation. *Frontiers of entrepreneurship research* 29 (4), 58–72.
- Christensen, C.M., Bower, J.L., 1996. Customer power, strategic investment, and the failure of leading firms. *Strat. Manag. J.* 17 (3), 197–218.
- Cooke, D.L., Rohleder, T.R., 2006. Learning from incidents: from normal accidents to high reliability. *Syst. Dynam. Rev.* 22 (3), 213–239.
- Cope, J., 2011. Entrepreneurial learning from failure: an interpretative phenomenological analysis. *J. Bus. Ventur.* 26 (6), 604–623.
- Corbett, A.C., 2005. Experiential learning within the process of opportunity identification and exploitation. *Enterpren. Theor. Pract.* 29 (4), 473–491.
- Cyert, R.M., March, J.G., 1963. Englewood Cliffs, NJ. *A Behavioral Theory of the Firm*, vol. 2, pp. 169–187, 4.
- Dahlin, K.B., Chuang, Y.T., Roulet, T.J., 2018. Opportunity, motivation, and ability to learn from failures and errors: review, synthesis, and ways to move forward. *Acad. Manag. Ann.* 12 (1), 252–277.
- Damanpour, F., Schneider, M., 2006. Phases of the adoption of innovation in organizations: effects of environment, organization and top managers 1. *Br. J. Manag.* 17 (3), 215–236.
- Dana, L.P., Tajpour, M., Salamzadeh, A., Hosseini, E., Zolfaghari, M., 2021. The impact of entrepreneurial education on technology-based enterprises development: the mediating role of motivation. *Adm. Sci.* 11 (4), 105.
- D'aveni, R.A., 1989. The aftermath of organizational decline: a longitudinal study of the strategic and managerial characteristics of declining firms. *Acad. Manag. J.* 32 (3), 577–605.
- Davis, J.P., Eisenhardt, K.M., Bingham, C.B., 2007. Developing theory through simulation methods. *Acad. Manag. Rev.* 32 (2), 480–499.
- Denrell, J., 2003. Vicarious learning, undersampling of failure, and the myths of management. *Organ. Sci.* 14 (3), 227–243.
- Desai, V., 2015. Learning through the distribution of failures within an organization: evidence from heart bypass surgery performance. *Acad. Manag. J.* 58 (4), 1032–1050.
- Desai, V., 2016. Learning to learn from failures: the impact of operating experience on railroad accident responses. *Ind. Corp. Change* 25 (2), 199–226.
- Dias, A., Teixeira, A.A., 2017. The anatomy of business failure: a qualitative account of its implications for future business success. *Eur. J. Manag. Bus. Econ.* 26 (1), 2–20.
- Dejbak Haakonsson, D., Burton, R.M., Obel, B., Lauridsen, J., 2008. How failure to align organizational climate and leadership style affects performance. *Manag. Decis.* 46 (3), 406–432.
- Edmondson, A.C., 2018. *The Fearless Organization: Creating Psychological Safety in the Workplace for Learning, Innovation, and Growth*. John Wiley & Sons.
- Eisenhardt, K.M., 1989. Making fast strategic decisions in high-velocity environments. *Acad. Manag. J.* 32 (3), 543–576.
- Eisenhardt, K.M., 1989b. Building theories from case study research. *Acad. Manag. Rev.* 14 (4), 532–550.
- Eisenhardt, K.M., Graebner, M.E., 2007. Theory building from cases: opportunities and challenges. *Acad. Manag. J.* 50 (1), 25–32.
- Flynn, B.B., Sakakibara, S., Schroeder, R.G., Bates, K.A., Flynn, E.J., 1990. Empirical research methods in operations management. *J. Oper. Manag.* 9 (2), 250–284.
- Folke, C., Carpenter, S.R., Walker, B., Scheffer, M., Chapin, T., Rockström, J., 2010. Resilience thinking: integrating resilience, adaptability and transformability. *Ecol. Soc.* 15 (4).
- Frese, M., Keith, N., 2015. Action errors, error management, and learning in organizations. *Annu. Rev. Psychol.* 66, 661–687.
- Fuller, J., Jacobides, M.G., Reeves, M., 2019. The myths and realities of business ecosystems. *MIT Sloan Manag. Rev.* 60 (3), 1–9.
- García-Morales, V.J., Lloréns-Montes, F.J., Verdú-Jover, A.J., 2008. The effects of transformational leadership on organizational performance through knowledge and innovation. *Br. J. Manag.* 19 (4), 299–319.
- Gibson, C.B., Birkinshaw, J., 2004. The antecedents, consequences, and mediating role of organizational ambidexterity. *Acad. Manag. J.* 47 (2), 209–226.
- Gino, F., Staats, B., 2016. Why organizations don't learn. *Harv. Bus. Rev.* 94 (1–2), 24–24.
- Golden, B.R., 1992. The past is the past—or is it? The use of retrospective accounts as indicators of past strategy. *Acad. Manag. J.* 35 (4), 848–860.
- Greenhalgh, L., 1983. Managing the job insecurity crisis. *Hum. Resour. Manag.* 22 (4), 431.
- Greve, H.R., Taylor, A., 2000. Innovations as catalysts for organizational change: shifts in organizational cognition and search. *Adm. Sci. Q.* 45 (1), 54–80.
- Gunderson, L.H., Holling, C.S. (Eds.), 2002. *Panarchy: Understanding Transformations in Human and Natural Systems*. Island press.
- Habersang, S., Küberling-Jost, J., Reihlen, M., Seckler, C., 2019. A process perspective on organizational failure: a qualitative meta-analysis. *J. Manag. Stud.* 56 (1), 19–56.
- Hambrick, D.C., D'Aveni, R.A., 1988. Large corporate failures as downward spirals. *Adm. Sci. Q.* 1–23.
- Harrigan, K.R., 1982. Exit decisions in mature industries. *Acad. Manag. J.* 25 (4), 707–732.
- Hartley, R.I., 1994. Self-calibration from multiple views with a rotating camera. In: *Computer Vision—Eccv'94: Third European Conference on Computer Vision Stockholm, Sweden, May 2–6, 1994 Proceedings, I 3*. Springer Berlin Heidelberg, pp. 471–478.
- He, Z.L., Wong, P.K., 2004. Exploration vs. exploitation: an empirical test of the ambidexterity hypothesis. *Organ. Sci.* 15 (4), 481–494.
- Heine, K., Rindfleisch, H., 2013. Organizational decline: a synthesis of insights from organizational ecology, path dependence and the resource-based view. *J. Organ. Change* 26 (1), 8–28.
- Hill, C.W., Rothaermel, F.T., 2003. The performance of incumbent firms in the face of radical technological innovation. *Acad. Manag. Rev.* 28 (2), 257–274.
- Holling, C.S., 2001. Understanding the complexity of economic, ecological, and social systems. *Ecosystems* 4, 390–405.
- Huang, X., Van de Vliert, E., 2003. Where intrinsic job satisfaction fails to work: national moderators of intrinsic motivation. *J. Organ. Behav.: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior* 24 (2), 159–179.
- Jackson, P., Mellahi, K., Sparks, L., 2005. Shutting up shop: understanding the international exit process in retailing. *Serv. Ind. J.* 25 (3), 355–371.
- Johnson, G., Langley, A., Melin, L., Whittington, R., 2007. *Strategy as Practice: Research Directions and Resources*.
- Kahn, K.B., 2018. Understanding innovation. *Bus. Horiz.* 61 (3), 453–460.
- Kawulich, B.B., 2005. Participant observation as a data collection method. *Forum qualitative sozialforschung/forum: Qualitative social research* 6 (No. 2).
- Keith, N., Horvath, D., Klamar, A., 2020. The more severe the merrier: severity of error consequences stimulates learning from error. *J. Occup. Organ. Psychol.* 93 (3), 712–737.
- Kim, J.Y., Miner, A.S., 2007. Vicarious learning from the failures and near-failures of others: evidence from the US commercial banking industry. *Acad. Manag. J.* 50 (3), 687–714.
- Kim, M., Song, J., Triche, J., 2015. Toward an integrated framework for innovation in service: a resource-based view and dynamic capabilities approach. *Inf. Syst. Front* 17, 533–546.
- Kim, N., Lee, J., 2020. Who is leaping through failure? The influence of innovation characteristics on learning from failure. *Ind. Innovat.* 27 (9), 1014–1039.
- Kim, W.C., Mauborgne, R., 2004. Value innovation. *Harv. Bus. Rev.* 82 (7/8), 172–180.
- Kindström, D., Kowalkowski, C., Sandberg, E., 2013. Enabling service innovation: a dynamic capabilities approach. *J. Bus. Res.* 66 (8), 1063–1073.
- Kondra, A.Z., Hinings, C.R., 1998. Organizational diversity and change in institutional theory. *Organ. Stud.* 19 (5), 743–767.
- Kücher, A., Feldbauer-Durstmüller, B., 2019. Organizational failure and decline—A bibliometric study of the scientific frontend. *J. Bus. Res.* 98, 503–516.
- Lawrence, P.R., Lorsch, J.W., 1967. *Organization and Environment Managing Differentiation and Integration*.
- Lawson, B., Samson, D., 2001. Developing innovation capability in organisations: a dynamic capabilities approach. *Int. J. Innovat. Manag.* 5, 377–400, 03.
- Lin, S., Yamakawa, Y., Li, J., 2019. Emergent learning and change in strategy: empirical study of Chinese serial entrepreneurs with failure experience. *Int. Enterpren. Manag. J.* 15, 773–792.
- Loh, J.M., Dahesihari, R., 2013. Resilience and economic empowerment: a qualitative investigation of entrepreneurial Indonesian women. *J. Enterprising Cult.* 21, 107–121, 01.
- Lorange, P., Nelson, R.T., 1987. How to recognize and avoid organizational decline. *Sloan Manag. Rev.* 28 (3), 41, 1986–1998.
- Madsen, P.M., Desai, V., 2010. Failing to learn? The effects of failure and success on organizational learning in the global orbital launch vehicle industry. *Acad. Manag. J.* 53 (3), 451–476.
- Maitlis, S., Christianson, M., 2014. Sensemaking in organizations: taking stock and moving forward. *Acad. Manag. Ann.* 8 (1), 57–125.
- March, J.G., 1991. Exploration and exploitation in organizational learning. *Organ. Sci.* 2 (1), 71–87.
- Maslach, D., 2016. Change and persistence with failed technological innovation. *Strat. Manag. J.* 37 (4), 714–723.

- McCutcheon, D.M., Meredith, J.R., 1993. Conducting case study research in operations management. *J. Oper. Manag.* 11 (3), 239–256.
- McGrath, R.G., 1999. Falling forward: real options reasoning and entrepreneurial failure. *Acad. Manag. Rev.* 24 (1), 13–30.
- McGrath, R.G., 2010. Business models: a discovery driven approach. *Long. Range Plan.* 43 (2–3), 247–261.
- McKinley, W., 1993. Organizational decline and adaptation: theoretical controversies. *Organ. Sci.* 4 (1), 1–9.
- McKinley, W., Latham, S., Braun, M., 2014. Organizational decline and innovation: turnarounds and downward spirals. *Acad. Manag. Rev.* 39 (1), 88–110.
- Mellahi, K., Wilkinson, A., 2004. Organizational failure: a critique of recent research and a proposed integrative framework. *Int. J. Manag. Rev.* 5 (1), 21–41.
- Mellahi, K., Jackson, P., Sparks, L., 2002. An exploratory study into failure in successful organizations: the case of Marks & Spencer. *Br. J. Manag.* 13 (1), 15–29.
- Miles, M.B., Huberman, A.M., 1994. *Qualitative Data Analysis: an Expanded Sourcebook*. Sage.
- Miles, R.E., Snow, C.C., 1984. Fit, failure and the hall of fame. *Calif. Manag. Rev.* 26 (3), 10–28.
- Miles, R.E., Snow, C.C., Meyer, A.D., Coleman Jr., H.J., 1978. Organizational strategy, structure, and process. *Acad. Manag. Rev.* 3 (3), 546–562.
- Miller, D., 1992. The Icarus paradox: how exceptional companies bring about their own downfall. *Bus. Horiz.* 35 (1), 24–35.
- Miller, J., Glassner, B., 1997. The ‘inside’ and the ‘outside’: finding realities in interviews. *Qual. Res.* 3, 99–112.
- Miner, A.S., Bassof, P., Moorman, C., 2001. Organizational improvisation and learning: a field study. *Adm. Sci. Q.* 46 (2), 304–337.
- Miner, A.S., Kim, J.K., Holzinger, L.W., Haunschild, P., 1996. Fruits of failure: organizational failure and population level learning. *Acad. Manag. Proc.* 1996 (1), 239–243. Briarcliff Manor, NY 10510: Academy of Management.
- Minniti, M., Bygrave, W., 2001. A dynamic model of entrepreneurial learning. *Enterpren. Theor. Pract.* 25 (3), 5–16.
- Mone, M.A., McKinley, W., Barker III, V.L., 1998. Organizational decline and innovation: a contingency framework. *Acad. Manag. Rev.* 23 (1), 115–132.
- Muehlfeld, K., Rao Sahib, P., Van Witteloostuijn, A., 2012. A contextual theory of organizational learning from failures and successes: a study of acquisition completion in the global newspaper industry, 1981–2008. *Strat. Manag. J.* 33 (8), 938–964.
- Mueller, B.A., Shepherd, D.A., 2016. Making the most of failure experiences: exploring the relationship between business failure and the identification of business opportunities. *Entrep. Theory Pract.* 40 (3), 457–487.
- Nadler, D.A., Tushman, M.L., 1989. Organizational frame bending: principles for managing reorientation. *Acad. Manag. Perspect.* 3 (3), 194–204.
- Nelson, R.R., Winter, S.G., 1982. The Schumpeterian tradeoff revisited. *Am. Econ. Rev.* 72 (1), 114–132.
- O’Reilly III, C.A., Tushman, M.L., 2013. Organizational ambidexterity: past, present, and future. *Acad. Manag. Perspect.* 27 (4), 324–338.
- Patton, M.Q., 1990. *Qualitative Evaluation and Research Methods*. SAGE Publications, inc.
- Patton, M.Q., 2002. Two decades of developments in qualitative inquiry: a personal, experiential perspective. *Qual. Soc. Work* 1 (3), 261–283.
- Patzelt, H., Shepherd, D.A., 2011. Negative emotions of an entrepreneurial career: self-employment and regulatory coping behaviors. *J. Bus. Ventur.* 26 (2), 226–238.
- Peretz, H.V., 2021. A perspective on organizational decline in the public sector: a case study. *Publ. Money Manag.* 41 (2), 161–171.
- Pettigrew, A.M., 1992. The character and significance of strategy process research. *Strat. Manag. J.* 13 (S2), 5–16.
- Porter, M.E., 1985. *Competitive Strategy: Creating and Sustaining Superior Performance*. The free, New York.
- Probst, G., Raisch, S., 2005. Organizational crisis: the logic of failure. *Acad. Manag. Perspect.* 19 (1), 90–105.
- Raisch, S., Birkinshaw, J., 2008. Organizational ambidexterity: antecedents, outcomes, and moderators. *J. Manag.* 34 (3), 375–409.
- Rhaem, K., 2018. Lessons learned from failures: how innovative entrepreneurs can learn from direct and indirect experiences of failures? A scoping review of the literature. In: *Proceedings of the 2018 International Conference on Education Technology Management*, pp. 63–70. December.
- Roux-Dufort, C., 2000. Why organizations don’t learn from crises: the perverse power of normalization. *Rev. Bus.* 21 (3/4), 25.
- Ruggiano, N., Perry, T.E., 2019. Conducting secondary analysis of qualitative data: should we, can we, and how? *Qual. Soc. Work* 18 (1), 81–97.
- Salancik, G.R., 1978. *The External Control of Organizations: A Resource Dependence Perspective*. Harper & Row, New York.
- Salerno, M.S., de Vasconcelos Gomes, L.A., Da Silva, D.O., Bagno, R.B., Freitas, S.L.T.U., 2015. Innovation processes: which process for which project? *Technovation* 35, 59–70.
- Sawang, S., Unsworth, K.L., 2011. Why adopt now? Multiple case studies and survey studies comparing small, medium and large firms. *Technovation* 31 (10–11), 554–559.
- Schein, E.H., 1996. *Three Cultures of Management: the Key to Organizational Learning*. MIT Sloan Management Review.
- Schein, E.H., 2010. *Organizational Culture and Leadership*, vol. 2. John Wiley & Sons.
- Schulze, P., Heinemann, F., Abedin, A., 2008. Balancing exploitation and exploration. *Acad. Manag. Proc.* 2008 (1), 1–6. Briarcliff Manor, NY 10510: Academy of Management.
- Seelos, C., Mair, J., 2012. Innovation is not the holy grail. *Stanford Soc. Innovat. Rev.* 10 (4), 44–49.
- Shepherd, D.A., 2003. Learning from business failure: propositions of grief recovery for the self-employed. *Acad. Manag. Rev.* 28 (2), 318–328.
- Shepherd, D.A., Cardon, M.S., 2009. Negative emotional reactions to project failure and the self-compassion to learn from the experience. *J. Manag. Stud.* 46 (6), 923–949.
- Shepherd, D.A., Haynie, J.M., Patzelt, H., 2013. Project failures arising from corporate entrepreneurship: impact of multiple project failures on employees’ accumulated emotions, learning, and motivation. *J. Prod. Innovat. Manag.* 30 (5), 880–895.
- Shepherd, D.A., Patzelt, H., Wolfe, M., 2011. Moving forward from project failure: negative emotions, affective commitment, and learning from the experience. *Acad. Manag. J.* 54 (6), 1229–1259.
- Sheppard, J.P., 1994. Strategy and bankruptcy: an exploration into organizational death. *J. Manag.* 20 (4), 795–833.
- Siggelkow, N., Rivkin, J.W., 2005. Speed and search: designing organizations for turbulence and complexity. *Organ. Sci.* 16 (2), 101–122.
- Sitkin, S.B., 1992. Learning through failure: the strategy of small losses. *Res. Organ. Behav.* 14, 231–266.
- Sitkin, S.B., Weingart, L.R., 1995. Determinants of risky decision-making behavior: a test of the mediating role of risk perceptions and propensity. *Acad. Manag. J.* 38 (6), 1573–1592.
- Starbuck, W.H., Greve, A., Hedberg, B., 1978. Responding to crises. *J. Bus. Adm.* 9 (2), 111–137.
- Staw, B.M., Sandelands, L.E., Dutton, J.E., 1981. Threat rigidity effects in organizational behavior: a multilevel analysis. *Adm. Sci. Q.* 501–524.
- Sutcliffe, K.M., Huber, G.P., 1998. Firm and industry as determinants of executive perceptions of the environment. *Strat. Manag. J.* 19 (8), 793–807.
- Trahms, C.A., Ndofo, H.A., Sirmon, D.G., 2013. Organizational decline and turnaround: a review and agenda for future research. *J. Manag.* 39 (5), 1277–1307.
- Tucker, A.L., Edmondson, A.C., 2003. Why hospitals don’t learn from failures: organizational and psychological dynamics that inhibit system change. *Calif. Manag. Rev.* 45 (2), 55–72.
- Tushman, M.L., O’Reilly III, C.A., 1996. Ambidextrous organizations: managing evolutionary and revolutionary change. *Calif. Manag. Rev.* 38 (4), 8–29.
- Van de Ven, A.H., Sun, K., 2011. Breakdowns in implementing models of organization change. *Acad. Manag. Perspect.* 25 (3), 58–74.
- Voelpel, S.C., Leibold, M., Tekie, E.B., 2006. Managing purposeful organizational misfit: exploring the nature of industry and organizational misfit to enable strategic change. *J. Change Manag.* 6 (3), 257–276.
- Voss, C., Tsigrikitsis, N., Frohlich, M., 2002. Operations management case research. *Int. J. Oper. Prod. Manag.* 22 (2), 195–219.
- Walker, B., Holling, C.S., Carpenter, S.R., Kinzig, A., 2004. Resilience, adaptability and transformability in social–ecological systems. *Ecol. Soc.* 9 (2).
- Walrave, B., Talmar, M., Podoynitsyna, K.S., Romme, A.G.L., Verbong, G.P., 2018. A multi-level perspective on innovation ecosystems for path-breaking innovation. *Technol. Forecast. Soc. Change* 136, 103–113.
- Walsh, G.S., Cunningham, J.A., 2017. Regenerative failure and attribution: examining the underlying processes affecting entrepreneurial learning. *Int. J. Entrepreneurial Behav. Res.* 23 (4), 688–707.
- Weitzel, W., Jonsson, E., 1989. Decline in organizations: a literature integration and extension. *Adm. Sci. Q.* 91–109.
- Wennberg, K., DeTienne, D.R., 2014. What do we really mean when we talk about ‘exit’? A critical review of research on entrepreneurial exit. *Int. Small Bus. J.* 32 (1), 4–16.
- Whyte, C.M., 1998. *Risky Business: the Personal and Financial Costs of Small Business Failure*.
- Williams, T.A., Gruber, D.A., Sutcliffe, K.M., Shepherd, D.A., Zhao, E.Y., 2017. Organizational response to adversity: fusing crisis management and resilience research streams. *Acad. Manag. Ann.* 11 (2), 733–769.
- Yin, R.K., 2003. Designing case studies. *Qualitative research methods* 5 (14), 359–386.
- Zahra, S.A., George, G., 2002. Absorptive capacity: a review, reconceptualization, and extension. *Acad. Manag. Rev.* 27 (2), 185–203.
- Zeng, Y., Song, S., Lee, J., Choe, S., 2022. Investment attributes and learning from failure in foreign direct investments. *Long. Range Plan.* 55 (4), 102109.
- Zimmerman, M.A., Zeitz, G.J., 2002. Beyond survival: achieving new venture growth by building legitimacy. *Acad. Manag. Rev.* 27 (3), 414–431.