KITCHEN INVASION: RESTAURANTS' BUSINESS MODEL INNOVATIONS DURING THE COVID-19 CRISIS

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Doctor of Philosophy

Degree

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DEDICATION

This dissertation is dedicated to my lord.

그리고 사랑하는 부모님께 이 논문을 바칩니다.

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Everyone says that getting a Ph.D. is like running a marathon because it is a lengthy process. A marathoner runs 42.195 kilometers to cross the finish line; similarly, I spent about 42,195 hours completing the degree. However, the similarities go beyond the length of the process and include how people help a marathoner.

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ABSTRACT

My dissertation explores how and why firms facing the same exogenous threats react differently, leading to different business model innovation (BMI) processes. I examine BMI in a context that has been hard-hit by COVID-19 pandemic restrictions—the restaurant industry. Employing a mixed-method research design, I conducted a longitudinal, inductive comparative case study of 17 restaurateurs in the same geographic region to explore how they have responded to the pandemic and how their BMI unfolded over time. To generalize my understanding of these processes, I then analyzed large-scale media data about the restaurant industry using topic modeling. In this quantitative analysis, I explored relationships identified in the inductive study. From these analyses, I identified a new theoretical lens to explain how entrepreneurs engage in BMI during a crisis: sensemaking. Using different sensemaking frames (opportunity and threat), restauranteurs in this study undertook different patterns of BMI actions. Specifically, those who adopted an opportunity sensemaking frame are linked to two BMI patterns, (1) replacing or adding new business concepts and (2) expanding the business's physical structure. Those who had a threat frame are related to two BMI patterns, (3) improving operational efficiency and (4) implementing temporary changes. In addition, unlike these restauranteurs, some restauranteurs who engaged in low-level sensemaking are associated with a BMI pattern, (5) using the same old business model. My topic modeling findings identify similar BMI patterns from restauranteurs across the U.S. My dissertation contributes to our understanding of BMI actions and processes by identifying the factors affecting BMI and explicating the dynamic processes BMI can take, rather than forcing a single framework on what is inherently a multi-modal process.

Keywords

Business Model Innovation, COVID-19, Crisis, Sensemaking, Process Research.

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CHAPTER 1

INTRODUCTION

In the valley of Elah, Goliath—the giant champion of the Philistines—held a sharp javelin in one hand and shouted at the Israelites, "Send out your warrior." In response, Saul—the king of the Israelites—with his head in his hands, had to make a decision. The king decided to send the shepherd boy David, rather than a soldier, to battle Goliath. While the giant and the Philistines laughed at and mocked the boy, David slung his slingshot. When David's rock struck and killed the giant, the laughter stopped, and King Saul breathed a sigh of relief.

In 2020, COVID-19 challenged the world like Goliath challenged the Israelites, and businesses have struggled to find solutions to the COVID-19 disruption. Just as Saul considered several options in fighting the Philistines, in the face of the pandemic, businesses have responded in various ways—from one extreme of accepting defeat or slightly changing to the other extreme of making bold and novel moves that deviate significantly from their existing ways of operating—just as King Saul did with his unconventional choice of sending David into battle. Business owners and entrepreneurs are also dealing with stress from COVID-19, similar to King Saul's stress in his situation with Goliath. There is much more we need to understand about business owners' decisions and actions during this crisis. These decisions and actions affect how they position themselves and operate in their industry by changing their system of business activities (i.e., business model) (Martins, Rindova, & Greenbaum, 2015; Zott, Amit, & Massa, 2011).

In my dissertation, I studied the COVID-19 crisis to understand how and why firms facing the same exogenous threat react differently, making different business model innovations and undertaking different business model innovation processes. Specifically, my research

questions are: (1) *What are decision-makers' business model innovations in response to the COVID-19 crisis and (2) how and why has their BMI unfolded differently over time given the same exogenous change?* With the first question, I explored how small business owners have operated and offered value via their business model changes during the pandemic. With the second question, I investigated decision-makers' different actions and factors affecting the BMI process during the pandemic (Foss & Saebi, 2017; Martins et al., 2015). By building on different theoretical lenses (i.e., rational, evolutionary, and cognitive) employed in BMI research, I studied business model changes in a context that has experienced significant and sustained pressures resulting from the COVID-19 crisis—the restaurant and food-service industry. I used a mixed-method research design. First, I conducted an inductive study using in-depth, open-ended interviews with restaurant owners and entrepreneurs. To further explore relationships uncovered in my field research, and to extend understanding by accounting for regional influences, I then analyzed large-scale media data using topic modeling to systematically explore and verify relationships identified in the inductive study.

Business models are defined as "the designed system of activities through which a firm creates and captures value" (Martins et al., 2015: 99). Over time, business models change through a process referred to as *business model innovation* (BMI) (Martins et al., 2015; Mitchell & Coles, 2003; Zott et al., 2011). Many researchers agree that business models and the process of changing a business model need to be further researched, noting the lack of theoretical understanding about business model creation and the mixed results of BMI empirical studies, which have failed to generate cumulative, consistent insights (Demil, Lecocq, Ricart, & Zott, 2015; Foss & Saebi, 2017; Massa, Tucci, & Afuah, 2017; Martins et al., 2015; Sorescu, 2017).

Some researchers note that the business model is "a slippery construct to study" (Casadesus-Masanell & Zhu, 2013: 480), representing the controversy about whether business models represent a stand-alone construct, or is just another name for strategy (Foss & Saebi, 2017; Massa et al., 2017). Some studies emphasize the latter perspective, stating: "the role of business models in explaining value captured relative to competition—[is] a staple of strategy research" (Massa et al., 2017: 90). This view is more externally oriented and compares a focal firm to other firms in their industry. However, many researchers argue that business model studies are distinct from strategy because business models emphasize creating value (even in temporary ways) over establishing sustainable competitive advantages (Amit & Zott, 2001; Casadesus-Masanell & Ricart, 2011; Chesbrough & Rosenbloom, 2002; Massa et al., 2017; McDonald & Eisenhardt, 2020). In their view, the focus is on internal changes and adjustments involving many stakeholders. I adopt this perspective and treat business models as distinct from strategy because of their focus on the organization and organizational changes instead of on external positioning, and BMI as the process of changing a business model over time.

In my dissertation, I build on the growing body of research about business model innovation. Factors that scholars have found affect BMI include, but are not limited to, the impact of external changes (e.g., technological shocks, regulatory changes, and crises) that are beyond a firm's competitive environment (Amit & Zott, 2001; Osiyevskyy & Dewald, 2018; Saebi, Lien, & Foss, 2017); access to organizational capabilities (e.g., resources and networks) (Doz & Kosonen, 2010; Guo, Su, & Ahlstrom, 2016; Miller, McAdam, & McAdam, 2014); and decision-makers' cognitive processes (Aspara, Lamberg, Laukia, & Tikkanen, 2013; Martins et al., 2015). Many empirical studies have focused primarily on the results of BMI emerging from

an undescribed “black box” process. Thus, the process of business model development and change has not been fully explored.

Cases have been used to research BMI, and these studies provide descriptive explanations of new business models’ emergence. Yet, these studies have not fully explained the factors underlying the BMI process (Amit & Zott, 2015; Bohnsack, Pinkse, & Kolk, 2014; Doz & Kosonen, 2010; Osiyevskyy & Dewald, 2015). In assessing the way forward in BMI research, Foss and Saebi (2017: 209) argued that “the process approach to BMI may inherently require more of a qualitative approach than the content approach.” My dissertation takes the next needed step in BMI research. I (a) closely examined the BMIs of several firms facing the same exogenous shocks, (b) was open to many factors that can explain these changes, and (c) followed my qualitative comparative case study with a large-scale examination using media accounts to further explore these relationships. In the following sections, I provide more background on the BMI construct and factors affecting business model changes.

Business Model Innovation. The fact that “business models matter” (Chesbrough, 2007: 12) is a key assumption among management researchers, as reflected in the increasing number of studies about BMI over the past 20 years (Foss & Saebi, 2017; Massa et al., 2017). As noted above, a firm’s *business model* is defined as a designed system of interdependent activities to create and capture value (Martins et al., 2015; Zott & Amit, 2010). As Martins and colleagues (2015) noted, business models evolve to continually create and capture value. Yet, the distinctly different definitions, measurements, and methods in the BMI literature have led to mixed findings across studies, limiting cumulative insights.

First, studies vary in whether they define BMI as an *outcome* or an *organizational process*. Studies that define BMI as an outcome primarily examine a new business model’s

emergence in a particular firm or an industry (Abdelkafi, Makhotin, & Posselt, 2013; Anderson & Kupp, 2008; Schneider & Spieth, 2013; Sorescu, 2017). Focusing on one point in time, these studies compare firms' old and new business models; however, the process that occurs in between that generates the new outcome is an uninvestigated "black box." Studies using a process definition of BMI focus on the patterns of firms' decisions and actions over time, and on how business models are modified across this process (Demil & Lecocq, 2010; Doz & Kosonen, 2010; McDonald & Eisenhardt, 2020; Sosna, Trevinyo-Rodriguez, & Velamuri, 2010). Therefore, Foss and Saebi (2017: 207) note that BMI "definitions abound, differ markedly, and are often ambiguous." I am interested in the process of business model change over time, not the more static approach of describing a business model at one point in time (i.e., the outcome approach).

Second, because of these different definitions, measurement approaches used to capture BMI have varied. Studies treating BMI as an outcome have primarily used surveys with retrospective questions and archival data, such as annual reports and firms' websites, to assess these BMI outcomes. For example, Saebi and colleagues (2017) surveyed respondents about their firm's previous BMI. In studies using archival data, researchers capture BMI by coding new business models at one point in time. For example, Kim and Min (2015) captured BMI as an outcome by counting retailers' online stores in annual reports and websites. Similarly, Visnjic and colleagues (Visnjic, Wiengarten, & Neely, 2016) used manufacturing firms' annual reports and coded BMI as different offerings described and seen in these documents. BMI process studies have also used survey and archival methods. In BMI process research, survey items measure the intentions of decision makers regarding business model changes and how they are planning to make those changes (Aspara, Hietanen, & Tikkanen, 2010; Bock, Opsahl, George, &

Gann, 2012; Osiyevskyy & Dewald, 2018). Process studies using archival data measure BMI by coding firms' activities and changes over time. For example, Bohnsack and colleagues (2014) measured BMI process by capturing detailed patterns of firms' actions over time using public press articles.

Third, both BMI outcome and BMI process research have used single and multiple case studies employing archival data and/or field investigations (Foss & Saebi, 2017). For instance, BMI outcome researchers have studied single and multiple companies across industries such as telecommunications (Anderson & Kupp, 2008), banking (Yunus, Moingeon, & Lehmann-Ortega, 2010), and restaurants (Franceschelli, Santoro, & Candelo, 2018). Similarly, BMI process researchers have studied high technology firms (Cavalcante, 2014), digital platform startups (Ghezzi & Cavallo, 2020), a professional football club (Demil & Lecocq, 2010), and a nutrition-management firm (Sosna et al., 2010). Despite all these case studies in varied contexts, most have been descriptive, idiosyncratic accounts of what occurred in a particular context. Most of these studies also take a retrospective approach rather than a real-time investigation by asking about current challenges and actions. Therefore, these BMI studies have not led to cumulative, novel insights, and we still lack a comprehensive understanding of BMI's dynamic processes.

Given the different definitions, methodologies, measures, and contexts in empirical BMI research, it is unsurprising that findings have been mixed and/or non-cumulative (Foss & Saebi, 2017). For instance, some researchers who have explored BMI as an outcome have found BMI's positive effects on profitability and other aspects of externally-facing performance metrics (Denicolai, Ramirez, & Tidd, 2014; Kim & Min, 2015; Zott & Amit, 2007). In contrast, other empirical studies have found no support for these relationships (Knudsen & Mortensen, 2011; Visnjic & Looy, 2013). Also, some researchers have discussed BMI as a key predictor of

strategic flexibility (Bashir & Verma, 2019) and strategic agility (Arbussa, Bikfalvi, & Marquès, 2017; Clauss, Abebe, Tangpong, & Hock, 2019). However, other empirical research did not find a direct relationship between BMI and either strategic flexibility (Bock et al., 2012; Schneider & Spieth, 2014) or strategic agility (Djaja & Arief, 2015; Hock, Clauss, & Schulz, 2016). Some studies have even identified BMI as moderating or mediating the effects of other constructs (e.g., firm performance, resources, organizational culture).

Because of these mixed findings and limited generalizable theory development, Foss and Saebi (2017) called for more empirical studies that can provide "conceptual clarification, theoretical models, and cumulative empirical work" (p. 222). My dissertation responds to this call by answering my first research question—*What are decision-makers' decisions and actions regarding BMI in response to the COVID-19 crisis?* Using different data sources (i.e., interviews and archival data), I examined the unfolding BMI process over time, and in real time, I also conducted a large-scale investigation of BMI. As a result, I clarify the BMI construct, identify individual and contextual factors that influence BMI, and elaborate on how the process unfolds. In the next section, I review factors in previous research addressing BMI change processes, which provide further theoretical insights in this area.

Factors Affecting BMI Processes. My second research question is *how and why do decision-makers' BMI unfolded differently over time given the same exogenous change?* I considered factors and mechanisms from previous BMI studies. Yet, given the inductive nature of my field study, I was open to insights beyond existing explanations. Martins and colleagues (2015) identified three lenses—rational, evolutionary, and cognitive—used in previous BMI research to explain *how* and *why* business models change. These three lenses highlight different factors affecting BMI.

The *rational lens* emphasizes exogenous factors, such as significant industry or technological disruptions, as the main drivers for BMI (Amit & Zott, 2001; Bask, Merisalo-Rantanen, Tinnilä, & Lauraeus, 2012; Casadesus-Masanell & Zhu, 2013). Studies with this view highlight that BMI occurs because an environmental change disrupts a firm's business model (e.g., Amit & Zott, 2001). Firms engage in the BMI process because a new environment introduces new challenges, such as key resources becoming unobtainable (e.g., Pearson & Clair, 1998; Kim & Min, 2015) and stable stakeholders' actions becoming unpredictable (e.g., Pajunen, 2006; Teece, 2010). Teece (2010) (also quoted by Martins and colleagues) discussed the logic of this view: "…when the underlying technology changes, and an established logic for satisfying consumer needs…is overturned, the business model must change too" (Martins et al., 2015: 101). Thus, the rational perspective suggests that BMI fits with external conditions to optimize value creation, occurring through a rational optimization process (e.g., Amit & Zott, 2001; Casadesus-Masanell & Ricart, 2010; Teece, 2010). However, the rational lens treats BMI as an outcome in which managers make concrete decisions to rationally optimize the BMI process in the face of exogenous shocks (Martins et al., 2015). This lens is limited to explaining firms' different decision-making processes and idiosyncratic actions in the face of similar conditions.

The *evolutionary lens* highlights decision-makers' perceptions of problems or opportunities as the main drivers for BMI (Martins et al., 2015; Osiyevskyy & Dewald, 2018). This view also focuses on external factors; but unlike the rational view, it emphasizes the role of adaptation (i.e., incremental changes to BMI) and trial-and-error experimentation (e.g., Chesbrough, 2010; McDonald & Eisenhardt, 2020; Sosna et al., 2010). For instance, decision makers may react to new problems emerging from environmental change by searching for a solution—first through familiar problem-solving routines and then more distally if they cannot

identify a satisfactory solution (Audia & Greve, 2006; Cyert & March, 1963; Sosna et al., 2010). Learning and incrementally adapting are key factors of the BMI process according to this perspective; however, while it is well suited to explain incremental BMI changes, but it does not explain radical BMI decisions and actions (Sorescu, 2017).

The *cognitive view* does not rely on external changes and stimuli to affect the BMI process. Instead, this perspective contends that BMI changes in relation to decision-makers' understandings of different business models; thus, decision makers can make changes independent of exogenous challenges (Doz & Kosonen, 2010; Martins et al., 2015). Martins and colleagues (2015) suggested that decision-makers' schemas provide new possibilities for changing business models through a process of designing, combining, and generating innovative ideas (Aspara et al., 2013; Massa et al., 2017). In this view, decision-makers' knowledge and understanding of various business models are important factors for innovating business models.

For instance, Martins and colleagues (2015) introduced the two cognitive mechanisms—*analogical reasoning* (i.e., comparing similarities between a firm's and other firms' business models) and *conceptual combination* (i.e., comparing differences among various business concepts)—that decision makers can use to generate new business models. Thus, with the cognitive lens, decision-makers' characteristics and experiences play an important role in the BMI process, but it can also accommodate exogenous influences that trigger decision-makers' cognitions. Thus, the cognitive view can explain decision-makers' BMI intentions by addressing various issues (different BMI processes, idiosyncratic decisions and actions, and radical changes) that different views may not answer. Nevertheless, Massa et al. (2017) stated that researchers with the cognitive lens face challenges in identifying the BMI's origin and its changes over time because often decision-makers' cognition changes do not lead to firms' attribute changes.

These three views highlight different factors and distinct ways to innovate business models (e.g., value optimization, incremental changes, and potentially radical changes). BMI researchers have often tended to adopt one of these lenses to explain BMI processes. A notable exception is Amit and Zott (2015), who approached the BMI process using multiple factors (managerial goals, others' business models, stakeholder activities, and environmental constraints) to understand BMI outcomes. They used four different BMI outcomes, such as novelty (i.e., adoption of new activities), lock-in (i.e., ability to attract and keep stakeholders), complementarities (i.e., reinforce activities), and efficiency (i.e., cost-reducing activities). To conduct this exploratory study, Amit and Zott (2015) interviewed executives of nine ventures multiple times during 2007 and 2008. They provided rich insights into a variety of factors leading to a BMI change and they linked different antecedents and results to develop a more predictive theory. For instance, environmental constraints and existing business models can stimulate entrepreneurs' creativity to create novel business models, and entrepreneurs' goals and stakeholders' activities enhance firms' business models to attract more stakeholders (Amit & Zott, 2015). Yet, while they addressed antecedents affecting BMI and outcomes, this study does not clearly address BMI as a process, which is my focus.

In addition, what has not been clearly studied is *how* and *why* firms facing the same exogenous threat react differently by making different BMI changes and undertaking different BMI processes. While many researchers have stated that decisions and actions are essential for BMI (Casadesus-Masanell & Ricart, 2011; Chesbrough, 2010; Doz & Kosonen, 2010; Martins et al., 2015), the field has not fully uncovered the BMI processes and factors that lead decision makers to different BMI choices. Furthermore, studying firms over time reveals how different factors come into play. The longitudinal focus provides an opportunity to see whether BMI

occurs in response to an environmental shock, factors that influence when and how BMI occurs, and how BMI changes over time in response to experience and additional environmental shifts. I examined the speed and magnitude of response from different decision makers and observed BMI changes based on their schemas, firms' conditions, and their perceptions of problems and opportunities. Thus, my research clarifies *what* BMI is as well as *how* and *why* it differently changes over time in the face of the same external change by observing restauranteurs' decisions and actions, and the patterns of their BMI process.

Research Context

My dissertation focused on the restaurant and food-service industry. On March 11, 2020, the World Health Organization (WHO) declared the spread of coronavirus a pandemic. As a result, many state and local governments in the United States enacted restrictions on restaurants. Many restaurants posted signs saying, "CLOSED until further notice." Even when regulations eased weeks later, restauranteurs struggled to deal with environmental changes. Understanding these restauranteurs' stories during the COVID-19 crisis is important because restaurants (a) are many cities' essential economic pillars; (b) are closely linked to other industries; (c) are largely owner-operated; (d) employ millions; (e) are ubiquitous; (f) vary dramatically in size, resource availability, and market segments served; (g) have been hit extremely hard by the COVID-19 crisis; and (h) have visible business models (i.e., menus, physical spaces: see Björklund, Mikkonen, Mattila, & van der Marel, 2020). Thus, from a research perspective, the restaurant and food service industry's characteristics are useful for understanding different types of BMIs.

A sudden and unprecedented event offers new opportunities and insights while putting most firms at risk by violating their organization-environment fit, raising decision uncertainty, and hindering strategic actions. Thus, decision-makers' leadership and responsibility are more

important than ever, and their decisions are probably more carefully considered because of the higher risks from their environments. I believe that a crisis setting is an opportunity to delve deeply into business owners' decision-making mechanisms and problem-solving processes. Exploring a crisis setting creates a common threat, and provides the opportunity to explore real-time sensemaking, enhancing our understanding of business model changes in a temporally compressed fashion. Management research has not fully uncovered the reasons for different business owners' reactions and adaptations to external challenges (Foss & Saebi, 2017). My study contributes to understanding what their BMI decisions and actions are in response to the COVID-19, why decision makers use BMI differently, and how they innovate new business models over time during the pandemic crisis.

Qualitative Study Methods

I used a multiple case design involving 17 restaurants or restaurant groups from one city in the Southeastern United States. These restaurants were selected to include organizations of different sizes, with different histories, cuisines, locations, and resources. I interviewed the owners of these firms—and in some cases key managers who participate in decision making as well—as they control the decisions made and can explain their decisions and actions. I conducted three panels of open-ended, semi-structured interviews (Eisenhardt, 1989). After interviewing these restaurants' owners, I analyzed their responses to address (a) their decisions and actions during the COVID-19 pandemic and (b) how and why their BMI unfolded differently when confronted with the same external challenge.

The interviews took place (1) after the initial implementation of, and then the gradual lifting of wide-spread government restrictions (May to July 2020), (2) before the November 2020 U.S. presidential election (mid-October to early November 2020), and (3) a year after the initial

responses to the pandemic and vaccines began to mitigate the COVID-19 threat (May to June 2021). I supplemented each case with photographs taken throughout the yearlong data collection process; I also captured restaurant data from social media and local news media (Mathison, 1988; Sjödin, Parida, Jovanovic, & Visnjic, 2020). Based on these data, I conducted an in-depth analysis of each case across the three interviews using open coding employing Computer Aided Qualitative Data Analysis software QDA Miner (CAQDAS). I created a narrative for each case followed by a visual map of how the process unfolded and key factors affecting the process (Langley, 1999). From this within case analysis, I identified different BMI patterns and key factors that influenced why the restaurateurs pursued them.

After I have gained an in-depth understanding of each case—the BMI actions taken and explanations for decisions—I then compared across the cases in a synthetic process data analysis approach (Eisenhardt & Bourgeois, 1988; Langley, 1999). Through an iterative process I compared and contrasted each case until I identified common groups of firms employing similar BMI patterns. Several patterns emerged from this analysis representing different BMI actions. I then compared factors evident within a group of firms with similar BMI actions as well as compared factors found in other patterns with different BMI actions. The key feature of the multiple case analysis was capturing similar or different BMI actions and the factors that affect the actions. This analysis generated a rich and detailed picture of BMI in terms of *what* has been undertaken and *why*.

I found that the restauranteurs employed two different sensemaking frames to understand their environmental and organizational cues, and that each sensemaking frame was associated with different patterns. Those who interpreted organizational and environmental cues using an opportunity sensemaking frame employed two BMI patterns, (1) replacing or adding new

business concepts or (2) expanding the business's physical structure. Those who interpreted environmental and organizational cues using a threat sensemaking frame pursued two other BMI patterns, (3) improving operational efficiency or (4) implementing temporary changes. Furthermore, restauranteurs who engaged in low-level sensemaking undertook minimal or no BMI, (5) using the same old business model.

Topic Modeling Study Methods

In addition, in my second study, I compiled a large textual dataset to identify broad patterns, including those arising from my inductive, interpretive interviews (Sonpar & Golden-Biddle, 2008). This database consisted of public press articles from national media sources related to the U.S. restaurant and food-service industry. Using topic modeling, I analyzed this corpus of documents. The reason for using the articles from various regions is because my first qualitative study focuses on an area in the Southeastern United States where COVID-19 restrictions have not been as strong compared to other regions in the US. The severity of the restrictions and attitudes towards fighting the coronavirus via mask mandates, business shutdown orders, and stay-at-home orders have been more relaxed than other regions (Lee et al., 2020). In addition, relatively mild winter weather conditions allow restaurants to offer more outdoor dining compared to the Northern states where average temperatures often fall below zero degrees (Fahrenheit) during the winter. As a consequence, the environmental contingencies that a restaurant faces vary across geographic and political regions (i.e., Democrats, Republicans). Topic modeling allowed me to assess differences in restaurant owners' actions based on the severity of the pandemic crisis as well as other factors such as local restrictions and weather.

Many management studies have used topic modeling within large amounts of textual data to identify key themes (i.e., categorized words and/or phrases) (Croidieu & Kim, 2018; Hannigan

et al., 2019; Kaplan & Vakili, 2015; Kobayashi et al., 2018; Schmiedel, Müller, & vom Brocke, 2019). I used topic modeling to identify how topics changed over time by geographic locale, the severity of the COVID-19 cases, and other factors. Thus, researchers can extract latent topics representing ideas from textual data and compare them with other attributes through topic modeling analysis (Blei, Ng, & Jordan, 2003; Schmiedel et al., 2019).

My topic modeling analysis used the Latent Dirichlet Allocation (LDA) approach, which is widely used and well accepted in management studies. Topic identification allows the researcher to isolate regional differences as well as companies' decisions and actions over time (e.g., Antons, Kleer, & Salge, 2016; Croidieu, & Kim, 2018; Giorgi, Maoret, & Zajac, 2019; Kaplan & Vakili, 2015). Using national-level restaurant data, I combined topic modeling themes with factors such as different regions (e.g., East North Central, South Atlantic, and Mountain) and political party strength (i.e., Democrats, Republicans) to identify different environmental conditions and business owners' decisions and actions in modifying business models. Using an LDA model I captured 53 topics, interpreted each topic's meaning, and then further classified the documents by month and state to provide a more detailed analysis (Croidieu & Kim, 2018). This technique allowed me to understand how different business models emerged and evolved over time in different areas in the United States.

Based on my topic modeling analysis, I confirmed the four BMI patterns related to different sensemaking frames (opportunity and threat) that I identified in my qualitative analysis. I also found that different BMI patterns may be connected to environmental changes. Differences in environmental conditions can either strengthen or weaken restauranteurs' involvement in certain BMI patterns, yet the differences were small. Therefore, I found that entrepreneurs' BMI actions cannot be explained by environmental differences alone, and relying on certain

exogenous changes, organizational challenges, and business-model knowledge may be insufficient to understand the big picture of the BMI actions and process. In the following chapter, I discuss a comprehensive overview of BMI literature, research gaps in the field, and my dissertation research questions.

CHAPTER 2

LITERATURE REVIEW

The concept of business models has been around for a long time (e.g., Bellman, Clark, Malcolm, Craft, & Ricciardi, 1957), but it started becoming widely discussed in the mid-1990s with the advent of internet-based businesses (Amit & Zott, 2020; Foss & Saebi, 2017). Firms were interested in doing business in new ways in response to the new markets, and researchers recognized firms' innovative actions in their business models (Amit & Zott, 2001; Magretta, 2002). Interest in business model innovation (BMI) grew in the early 2000s, paralleling the growth in online businesses (Amit & Zott, 2001; Foss & Saebi, 2017). Amazon, eBay, Netflix, and other online companies grew dramatically, becoming giants and threatening traditional firms and their ways of doing business. For instance, Airbnb changed the traditional hospitality industry's landscape by connecting travelers with individual "hosts" willing to rent rooms, or their entire homes, through an online platform. Its business model broke through the hotel industry's barriers to entry and enlarged the industry's economic pie (Bashir & Verma, 2016). While these new firms had well-honed business models that created value, traditional firms continued innovating existing strategic frameworks and value-chain models (producing and delivering products/services) to achieve a competitive advantage (Amit & Zott, 2020). For example, in response to the market changes Airbnb created, many hotels were involved in changing traditional business models by restructuring and improving operations to enhance customers' satisfaction (Zach, Nicolau, & Sharma, 2020).

Changes in business models are pervasive phenomena that happen across industries such as manufacturing (e.g., Sjödin, Parida, Jovanovic, & Visnjic, 2020; Witell & Löfgren, 2013), retail (e.g., Kim & Min, 2015; Sohl, Vroom, & McCann, 2020), financial service (e.g.,

McDonald & Eisenhardt, 2020; Yunus, Moingeon, & Lehmann-Ortega, 2010), and many others (e.g., Saebi, Lien, & Foss, 2017; Osiyevskyy & Dewald, 2015). The many stories about new business models and business model changes have attracted managers to engage in BMI (Kim & Min, 2015; Martins, Rindova, & Greenbaum, 2015; McDonald & Eisenhardt, 2020). For instance, the Boston Consulting Group's 2014 reports revealed that 94 percent of 1,500 senior executives said their firms engaged in business model innovation to some degree (Lindgardt & Ayers, 2014).

Although BMI is happening everywhere for different reasons, "BMI research is relatively recent and non-cumulative" (Foss & Saebi, 2017: 203). As Casadesus-Masanell and Zhu (2013) noted, the business model is "a slippery construct to study" (p. 480); therefore, researchers have not systemically understood what BMI is, or how and why firms engage it. Based on my review of the BMI literature, I consider how the distinctly different definitions, measurements, and methods in BMI research that have limited our ability to develop cumulative insights.

The term *business model innovation (BMI)* has not been clearly defined; as a result, scholars have used it in a variety of confusing ways. Some researchers treat *outcomes* (i.e., new business models), such as Airbnb's online platform, as BMI (Teece, 2010; Zach et al., 2020). Because these researchers see new systems (Kim & Min, 2015; Sohl et al., 2020) or new services (Visnjic, Van Looy, & Neely, 2013; Visnjic, Wiengarten, & Neely, 2016) as BMI, BMI's scope is limited, and ignores other business model changes. Other researchers consider BMI a *process* involved in creating successful business models (Demil & Lecocq, 2010; McDonald & Eisenhardt, 2020), and focus on the mechanisms underlying how new business models emerge (e.g., BMI's causes and the processes employed by Airbnb).

In my literature review, I provide a comprehensive overview of BMI research by separating the two main BMI research streams into outcome research and process research, and then comparing them (Foss & Saebi, 2017; Demil & Lecocq, 2010). I then focus on BMI process research and discuss the three theoretical lenses (rational, evolutionary, and cognitive) proposed by Martins and colleagues (2015). Finally, I identify why the following research questions on BMI are needed: (1) *What are the processes decision makers use to engage in BMI when responding to crises? and (2) How and why have these BMIs unfolded differently over time and firms, given the same exogenous change?*

BMI: An Outcome or a Process

Although a *business model* is clearly defined as "the designed system of activities through which a firm creates and captures value" (Martins et al., 2015: 99), opinions vary on whether BMI is (a) *an outcome (new or changed business model) or* (b) *a process (the way business models are created or changed).* After reviewing prior BMI studies and identifying different BMI definitions, Foss and Saebi (2017) stated that "definitions abound, differ markedly, and are often ambiguous" (Foss & Saebi, 2017: 207). The different conceptualizations of BMI as outcomes and processes hinder BMI research's cumulative development. Thus, I review the BMI literature to gain insight into the landscape of BMI research in terms of conceptualizations and methods. I then propose why the process approach is more suitable for understanding BMI.

1. Defining BMI

Edward Sapir, an American linguist and anthropologist, said that "one of the glories of English simplicity is the possibility of using the same word as noun and verb" (Sapir, 2021: 114).

I found that the word BMI has been used as a noun (i.e., an outcome) and a verb (i.e., a series of actions, or process). BMI is interpreted differently in each research stream.

BMI outcome research

BMI outcome research focuses on newly designed systems in industries or firms (Abdelkafi, Makhotin, & Posselt, 2013; Santos, Spector, & Van der Heyden, 2009; Sorescu, 2017), and these studies compare firms' old and new business models. BMI outcome researchers consider a new business model to be a form of innovation (Amit & Zott, 2001) and a set of strategic actions (Chesbrough, 2007). Therefore, introducing new business models is recognized as an innovative action. Within BMI outcome research, various levels of business model changes result in different definitions. Table 2.1 summarizes the different levels of changes that are considered BMIs. Some BMI outcome researchers argue that BMI includes incremental and broad changes in business models (Abdelkafi et al., 2013; Casadesus-Masanell & Zhu, 2013; Khanagha, Volberda, & Oshri, 2014), while others consider only radical changes as BMI (Foss & Saebi, 2017; Sorescu, 2017). For instance, Sorescu (2017: 692) defined *BMI* "as a change in the value creation, value appropriation, or value delivery function of a firm that results in a significant change to the firm's value proposition." Foss and Saebi (2017: 201) defined *BMI* "as designed, novel, and nontrivial changes to the key elements of a firm's BM and/or the architecture linking these elements." However, Abdelkafi and colleagues (2013: 13) argued, "A business model innovation happens when the company modifies or improves at least one of the value dimensions." Other BMI researchers have even defined any changes (incremental or radical) in a firm's business model as BMIs (Casadesus-Masanell & Zhu, 2013; Khanagha et al., 2014; Skarzynski & Gibson, 2008).

Table 2.1. BMI Definitions in Outcome Research

Definition Types	Author(s)	Definitions
Radical changes	Foss & Saebi (2017: 216)	"We define a BMI as designed, novel, and nontrivial changes to the key elements of a firm's BM and/or the architecture linking these elements."
	Gambardella & McGahan (2010: 263)	"Business-model innovation occurs when a firm adopts a novel approach to commercializing its underlying assets."
	Markides (2006: 20)	"Business model innovation is the discovery of a fundamentally different business model in an existing business."
	Sorescu (2017: 692)	"A business model innovation is defined as a change in the value creation, value appropriation, or value delivery function of a firm that results in a significant change to the firm's value proposition."
Incremental changes	Abdelkafi et al. (2013: 13)	"A business model innovation happens when the company modifies or improves at least one of the value dimensions."
	Santos et al. (2009: 14)	"Business model innovation (BMI) is a reconfiguration of activities in the existing business model of a firm that is new to the product service market in which the firm competes."
Broad changes (incremental and radical changes)	Casadesus-Masanell & Zhu (2013: 464)	"At root, business model innovation refers to the search for new logics of the firm and new ways to create and capture value for its stakeholders; it focuses primarily on finding new ways to generate revenues and define value propositions for customers, suppliers, and partners."
	Khanagha et al. (2014: 324)	"Business model innovation activities can range from incremental changes in individual components of business models, extension of the existing business model, introduction of parallel business models, right through to disruption of the business model, which may potentially entail replacing the existing model with a fundamentally different one."
	Skarzynski & Gibson (2008: 111)	"Business model innovation is about creating fundamentally new kinds of businesses, or about bringing more strategic variety into the business you are already in — the kind of variety that is highly valued by customers."

BMI outcome researchers express their perspective with practical examples when explaining BMI. Amit and Zott (2020) discussed Zopa, the first peer-to-peer online lending firm, as an example of BMI. Although describing Zopa's services and loans as similar to a standard loan, they emphasized that the firm's business model is distinct from traditional banks because "everything happens online; it is a BMI" (Amit & Zott, 2020: 87). Girotra and Netessine (2011) described MyFab, an internet-based furniture firm, as another example of BMI. MyFab uses customer input in designing furniture—floating potential furniture designs to customers, then using a voting system to identify the most popular designs. Because the business model is different from that of the traditional furniture industry, Girotra and Netessine (2011) considered it a BMI. Therefore, BMI outcome studies considered BMI to be a "noun" that describes a new or developed system introduced into a firm or a market.

BMI process research

Other BMI researchers consider BMI the process of creating and developing business models. They focus on business model changes as processes because a new business model "is rarely found immediately, but requires progressive refinements to create internal consistency and/or to adapt to its environment" (Demil & Lecocq, 2010: 228). These researchers focus on explaining firms' BMI based on different stages and patterns of changes across firms (Bohnsack, Pinkse, & Kolk, 2014; Cavalcante, 2014; Ghezzi & Cavallo, 2020). BMI process studies investigate BMI as a dynamic process rather than as static changes to an existing model (Bucherer, Eisert, & Gassmann, 2012; Demil & Lecocq, 2010; Foss & Saebi, 2017).

As Table 2.2 shows, BMI process researchers define *BMI* as a continuous process of business model change. Sosna and colleagues (Sosna, Trevinyo-Rodriguez, & Velamuri, 2010: 384) stated that "firms begin with a business model and then—in response to certain triggers

Table 2.2. BMI Definitions in Process Research

Definition Types	Author(s)	Definitions
Fine tuning process	Demil & Lecocq (2010: 227)	Business model evolution "as a fine tuning process involving voluntary and emergent changes in and between permanently linked core components"
	Bucherer et al. (2012: 184)	"business model innovation as a process that deliberately changes the core elements of a firm and its business logic."
	Sosna et al. (2010: 384)	"business model development as an initial experiment followed by constant revision, adaptation and fine tuning based on trial-and-error learning."
	McGrath (2010: 260)	"With new business models, experimentation is key, and it can take place both within firms and across industries… some firms develop superior capabilities at experimentation and consequently can build better models more quickly than their slower counterparts."

(typically external)—plan, design, test and re-test alternative business model variants until they find the one that best suits their objectives." McDonald and Eisenhardt (2020: 483) also investigated nascent entrepreneurs' behaviors in designing effective business models, and found that they "(1) borrow (business models) from peers and focus on established substitutes for their services or products, (2) test assumptions, then commit to a broad business-model template, and (3) pause before elaborating the activity system."

BMI process researchers use practical examples to support their conceptualizations of BMI as fine-tuning processes and continuous experimentation (Demil & Lecocq, 2010; McGrath, 2010). For instance, Aversa and colleagues (Aversa, Haefliger, Hueller, & Reza, 2020) studied Amazon.com from 1995 to 2018, and the authors presented Amazon's business model changes and expansions over time. Amazon launched an online bookstore in 1995, and they expanded their scope of products offered, becoming a diversified online retailer in 2000. From 2000 to 2010, they changed their distribution system and launched different online businesses such as Amazon Prime, Mechanical Turk, and Web Services. From 2010 to 2018, Amazon jumped into TV and Fire Phone services (discontinuing the phone service in 2015) and opened physical stores. Their growth and expansion cannot be simply explained as adding new services, because such additions require refinements in organizational structure (Demil & Lecocq, 2010) and networks (Aversa et al., 2020). Therefore, BMI process studies consider BMI a "verb" reflecting a series of actions and adjustments to find suitable business models.

BMI researchers treating BMI as an outcome or a process have both expanded our understanding of BMI. However, their different BMI interpretations hamper building cumulative knowledge because they lead researchers to take different empirical approaches to studying BMI. In the next section, I discuss how the empirical differences in these two research streams.

2. Methods Used to Empirically Study BMI

Different interpretations of BMI have led to differences in the methodology used. While BMI researchers in both research streams used quantitative (i.e., analyzing survey and archival data) and qualitative (i.e., analyzing interviews) methods, their applications differed depending on their BMI interpretations. Using both methodological approaches, outcome researchers focused on firms' past BMI actions and new business models, while process researchers gave attention to firms' willingness to engage in BMI and BMI actions over time. In this section, I discuss further how quantitative and qualitative methods were differently used in each research stream.

BMI findings in quantitative studies

Outcome research. BMI outcome researchers believe that firms with a new business model achieve better performance and survival in response to an environmental change (Kim & Min, 2015; Pedersen, Gwozdz, & Hvass, 2018; Velu, 2015; Visnjic et al., 2016). That belief is aligned with Chesbrough's (2007: 12) argument that "A better business model often will beat a better idea or technology." Therefore, BMI outcome researchers typically measured BMI using survey or secondary data, testing BMI's relationships with environmental changes, organizational factors (e.g., partnerships, strategic orientation), and firm performance (e.g., Karimi & Walter, 2016; Kim & Min, 2015; Saebi et al., 2017; Velu, 2015).

Studies using surveys capture BMI by asking managers about the degrees of change in business models. For instance, Saebi and colleagues (2017) measured Norwegian firms' changes in response to the 2008 financial crisis using a survey, and found that firms were more likely to adopt a new business model when decision makers perceived more threats than opportunities in the face of the crisis. Velu (2015) also used a survey to measure BMI by asking questions of

experts who understand the bond market. This approach involved sharing firms' new business models with experts and asking them about their perceptions of BMI. The author found a U-shaped relationship between BMI levels and firms' survival rates—*low (*i.e., similar to the traditional business model) and *high* (i.e., different and better than the traditional model) levels of a BMI were positively associated with survival.

BMI outcome researchers have also measured BMI using secondary data by capturing newly introduced business models. Kim and Min (2015) studied the relationship between retail firms' new business models and financial performance. Using retail firms' annual reports, they coded having online stores as BMI and found the new business models had a positive effect on performance. Visnjic and colleagues (2016) studied manufacturing firms' "servitization" (i.e., adding service-oriented business models) and its effects on performance. Also using annual reports, these researchers found that firms with both product and service-oriented innovations had better performance in the long term, while sacrificing short-term performance (Visnjic et al., 2016).

Many BMI outcome researchers consider a new business model as BMI (Kim & Min, 2015; Saebi et al., 2017; Visnjic et al., 2016). Using survey and secondary sources, BMI outcome researchers have suggested that (a) an environmental change often stimulates new business models, (b) different organizational and managerial factors are positively associated with BMI adoption, and (c) the new models are often positively related to firm performance. In summary, BMI outcome studies with quantitative methods have mainly explained what drives new business models and what happens after adopting them. The first section of Table 2.3 summarizes the relationship between BMI and other factors, BMI measurements, and previous studies' findings in BMI outcome research. Although this research stream has offered broad

Table 2.3. Quantitative Methods in BMI Outcome and Process Studies

Research Type	Relationship	BMI Measurement	Findings	Example Studies
BMI Outcome Research	Environmental changes ➔ BMI adaptation	Survey	Perceived opportunities and threats from environmental changes increase BMI adaptation.	Saebi et al. (2017), Velu & Jacob (2016)
	Organizational/Managerial capability ➔ BMI adaptation	Survey Secondary data	Organizational and managerial capabilities have a positive relationship with BMI adaptation.	Von Delft et al. (2019), Guo et al. (2016), Narayan et al., (2020)
	BMI adaptation ➔ Firm Performance	Survey Secondary data	BMI has a positive relationship with firm performance and sustainability.	Cucculelli & Bettinelli (2015), Kim & Min (2015), Pedersen et al. (2018), Sohl et al. (2020), Visnjic et al. (2016), Zott & Amit (2007)
			BMI has a curvilinear relationship (U or inverted U shapes) with firm performance or survival.	Karimi & Walter (2016), Velu (2015)
BMI Process Research	Environmental changes ➔ BMI intention	Survey	Perceived opportunities and threats from environmental changes increase BMI intention.	Osiyevskyy & Dewald (2015, 2018)
	Organizational differences ➔ Different BMI approaches	Survey Secondary data	Different conditions (e.g., organizational structures, capabilities, and prior business models) lead to different BMI approaches.	Bohnsack et al. (2014) Eppler et al. (2011)
	BMI intention and experimentation ➔ Firm performance	Survey	BMI intention and experimentation have a positive relationship with firm performance.	Aspara et al. (2010), Bouwman et al. (2019), Huang et al. (2013)

ideas about business model components and relationships with other organizational factors, it is limited in providing insight into how to develop or change business models (Demil & Lecocq, 2010; Foss & Saebi, 2017). Thus, it does not provide insights into the detailed actions and processes firms can use as they attempt to engage in BMI.

Process research. BMI process researchers have focused on the different stages of BMI, BMI experimentation, and organizational learning from BMI efforts (Bouwman, Nikou, & Reuver, 2019; Ghezzi & Cavallo, 2020; McDonald & Eisenhardt, 2020; Sosna et al., 2010). While many BMI process studies have used case study designs (e.g., Foss & Saebi, 2017), some researchers have used survey and secondary data sources to investigate the relationships between a firm's efforts at BMI and important factors such as environmental changes, organizational conditions, and managerial perceptions (Bock, Opsahl, George, & Gann, 2012; Bohnsack et al., 2014; Eppler, Hoffmann, & Bresciani, 2011; Huang, Lai, Lin, & Chen, 2013; Osiyevskyy & Dewald, 2015).

BMI process researchers have asked survey questions about decision makers' willingness to engage in BMI and their innovative actions in specific areas of their business models. For example, Osiyevskyy and Dewald (2015) surveyed 241 Canadian real estate broker managers who experienced major regulatory changes in their industry. Asking questions about managers' BMI intentions and actions, these researchers found that managers' cognitive factors, such as perceived opportunities and threats, influenced firms' BMI behaviors. They suggested that the willingness to undertake BMI was reduced when decision makers detected a high level of threat from environmental changes, but perceived a performance-reducing threat as an opportunity for a novel business model to enhance managers' explorative intentions of engaging in BMI. Bouwman and colleagues (2019) studied small firms and found that they lacked the resources

and time for BMI experimentation. They asked questions about the past 12 months of firms' resource allocation efforts to BMI practices. Their study revealed that managerial BMI resource allocation efforts enhanced BMI experimentation, which was also linked to increased firm performance.

Using archival data, BMI process researchers have also examined new business model patterns of firms' actions over time. Bonhsack and colleagues (2014) studied the automobile industry and tracked new business model patterns from incumbent firms (e.g., BMW, GM, and Hyundai) and entrepreneurial firms (e.g., BYD, Chery, and Tesla). Using press releases (in industry trade magazines and a car magazine), they captured each firm's electric vehicle projects from 2006 to 2010, and found little difference in BMI patterns between incumbent and entrepreneurial firms. The researchers emphasized that more firms in the industry were transforming their business models over time because of technological advancement.

Many BMI process researchers using quantitative methods consider BMI a series of actions or efforts to achieve an objective in particular contexts (Bock et al., 2012; Bonhsack et al., 2014; Bouwman et al., 2019). Although relatively few studies use survey and secondary sources, BMI process researchers have suggested that firms' (a) perceived problems and opportunities enhance BMI efforts; (b) capabilities lead various BMI processes; and (c) experimentation and learning in business models enhances firm performance. In summary, BMI process studies employing quantitative methods have explored the causes and processes of firms' BMI engagements. The second section of Table 2.3 summarizes the relationship between BMI and other factors, BMI measurements, and findings in BMI process research. Although BMI process researchers have studied BMI patterns and managerial intentions in BMI over time, the ability to capture the full spectrum of BMI processes via quantitative study may be limited (e.g.,

Amit & Zott, 2015, 2016; Demil & Lecocq, 2010). Foss and Saebi (2017: 209) emphasized that "the process approach to BMI may inherently require more of a qualitative approach than the content approach" to understand detailed BMI actions and processes. In the next section, I discuss how these two research streams studied BMI with qualitative methods.

BMI findings in qualitative studies

Outcome research. By using case studies, BMI outcome researchers have focused on explaining the causes (i.e., opportunities and problems) for a new business model and the outcome of adopting it. A group of BMI outcome researchers has focused on how firms solve problems through BMI in a particular context (e.g., Yunus et al., 2010; Witell & Löfgren, 2013). For instance, Yunus and colleagues (2010) discussed Grameen Group, which works to alleviate poverty by providing various services such as clean water, affordable healthy food, and microfinancing that offers small loans without requiring the borrower put up collateral. These researchers discussed various problems (e.g., the lack of expertise, financial resources, and financial profit) that Grameen faced, and its business model changes that solved the problems. They argued that social businesses should develop a social business model that is different from for-profit business models to solve problems in social business contexts and achieve a social goal. Similarly, Witell and Löfgren (2013: 520) discussed six manufacturers' transition "from service for free to service for fee" in various industries such as the automotive, beverage, pulp, and other industries. They argued that manufacturing firms are deeply engaged in a product-based business model, and often do not charge for services. Observing that free services are cost drivers, they found that firms changed their business models to reduce the cost problem. Firms innovated business models either incrementally (minor changes in structure and content of services) or radically (changes in governance by including partners).

Other researchers have focused on the results of adopting new business models. They argued that firms achieve a better outcome from adopting new business models (Anderson & Kupp, 2008; Franceschelli, Santoro, & Candelo, 2018; Matzler, Bailom, den Eichen, & Kohler, 2013). For instance, Anderson and Kupp (2008) studied successful telecommunication firms' business models for low-income customers. These researchers discussed firms' unconventional actions in creating new value-chains, building partnerships with non-traditional organizations (e.g., non-profit, local entrepreneurs), and capturing opportunities from developing markets. Similarly, Franceschelli and colleagues (2018) explained an Italian pizzeria's new business model by describing its different parts (e.g., customers, revenue, costs, and partnership), their functions, and reasons why each part was designed. They emphasized the importance of BMI efforts to achieve a sustainable business.

These studies provided detailed explanations of what new business models looked like, and the causes and results of BMI. Using a retrospective approach, researchers have focused on the relationship between a cause and a result, discussing firms' BMI in a linear fashion (i.e., A leads to B). Thus, these studies fail to consider certain aspects of decision-making processes, such as the initial considerations that led to different business models, the unexpected consequences of the business models employed, and how they were subsequently modified. Although BMI outcome studies' purpose is not to understand BMI processes, failing to understand what these processes look like hinders understanding of why and how firms engage in BMI.

Process research. BMI process researchers have often used case studies to better understand the reasons for, the processes involved in, and the outcomes of business model changes. Their focus is on firms' actions over time around their business model. Thus, they

consider BMI as a process of finding well-suited business models, and emphasize continuous fine-tuning processes.

These studies have highlighted continuous experimentation and fine-tuning processes to find and retain an appropriate business model (Sjödin et al., 2020; Sosna et al., 2010; Visnjic et al., 2013). For instance, Visnjic and colleagues (2013) conducted a case study using Atlas Copco, an industrial equipment firm, and provided a comprehensive understanding of market performance through the manufacturing firm's service BMI efforts. After the firm adopted the service business model, it found that its product and service sales had been inseparably connected to each other as complements or substitutes. Service businesses could either help product sales by building a strong relationship with customers, or cannibalize product business by reducing product sales with a prolonged replacement cycle. Also, product and service sales employees had different motivations and incentives. Thus, the firm needed to track and manage both service and product business models by continuously adding and revising them in the organization to achieve better outcomes. Finding a series of business model changes, the authors stated, "The Atlas Copco experience suggests that a focus on customer relationships should be the starting point—and a core motivation behind the development of the service business—but it is not in itself sufficient" (Visnjic et al., 2013: 119).

Sjödin and colleagues (2020) interviewed six B2B firms that shifted from traditional product sales to outcome-based services (i.e., a firm guarantees product or service performance) to understand their BMI process. They found the three key process phases for effective changes in business models. According to the authors, (1) firms and customers work together to capture value-creation opportunities and distribute value in the first phase; (2) firms engage in alignment between the value offering and profit formula in the second phase; (3) firms work on refining

value-creation processes and revising other organizational structures in the last phase. In each phase, the authors argued that firms were engaged in both value creation process (i.e., a set of activities to realize higher value) and value capture process (i.e., a process of securing and distributing value) to achieve and retain new business models. Thus, they emphasized that BMI is a process of aligning and re-aligning these value creation and value capture processes.

Other researchers have specifically focused on how firms engage in the early stage of creating a new business model (Cavalcante, 2014; Ghezzi & Cavallo, 2020; Frankenberger, Weiblen, Csik, & Gassmann, 2013; McDonald & Eisenhardt, 2020). For instance, Cavalcante (2014) and Ghezzi and Cavallo (2020) emphasized the importance of the early stage in the BMI process. Both studies found that experimentation and learning in this stage are important in developing effective business models. Frankenberger and colleagues (2013) and McDonald and Eisenhardt (2020) found sub-phases of the stage and discussed those phases as an iterative process. Specifically, Frankenberger and colleagues (2013) studied six established firms' initial actions in changing business models and found four phases such as initiation (i.e., consideration of the needs in business model changes), ideation (i.e., generation of the possible options), integration (i.e., creation of a new business model), and implementation (i.e., realization of the business model). McDonald and Eisenhardt (2020) identified three actions nascent entrepreneurs employed in designing business models (i.e., borrowing concepts from others, testing assumptions, and pausing for elaboration).

Although many researchers have emphasized BMI as a process rather than a one-time decision (Demil & Lecocq, 2010; Sosna et al., 2010), BMI studies have not fully uncovered systematic explanations of how the process creates different business models. Also, BMI process studies have not fully considered how the BMI process evolves over time (Berends, Smit,

Reymen, & Podoynitsyna, 2016). Thus, more studies are required to understand the BMI process and its outcomes (Amit & Zott, 2015, 2016; Demil & Lecocq, 2010; Mezger, 2014; Sjödin et al., 2020).

In summary, using case studies, many BMI outcome researchers have focused on different reasons to engage in BMI and on BMI's outcome. On the other hand, BMI process researchers have focused on experimentation and the overall fine-tuning of processes in the early stages of organizational founding, or of organizational change. Table 2.4 summarizes these studies' areas of focus, research settings, and findings.

3. Challenges of having Different BMI Research Streams

BMI outcome research provides insight into different types of business models, their relationships with important business factors (e.g., performance and sustainability), and effective business model arrangements (Amit & Zott, 2015; Kim & Min, 2015; Saebi et al., 2017; Zott & Amit, 2007). In contrast, BMI process research helps to recognize how businesses engage in changing their business models over time (McDonald & Eisenhardt, 2020; Sjödin et al., 2020; Visnjic et al., 2013). However, their differences in focus may hinder building cumulative insights about BMI; attending to different aspects of BMI without considering the other stream's focus dilutes attention and has yielded mixed findings, thus challenging further theoretical development (Demil, Lecocq, Ricart, & Zott, 2015; Foss & Saebi, 2017; Massa, Tucci, & Afuah, 2017; Sorescu, 2017).

On the one hand, BMI outcome research identifies potential causes (i.e., opportunities and problems) and outcomes based on the contexts studied. However, BMI outcome researchers have found inconsistent and idiosyncratic results based on their study contexts. For instance,

Table 2.4. Qualitative Methods in BMI Outcome and Process Studies

Research Type	Themes	Author(s)	Setting	Findings/Contributions
BMI Outcome Research	Using BMI for performance enhancement	Anderson & Kupp (2008)	The telecommunication industry	Firms created new ways to serve the poor via changing value-chain, collaborating with non-traditional partners, and building networks.
		Franceschelli et al. (2018)	A food start-up	The restaurant changed in each business model segment (e.g., client segments, client relationship, distribution channels, and cost) for sustainability.
		Matzler et al. (2013)	Nespresso	Nespresso built successful business model innovation in product and service, value creation, profit formula, marketing, and sales. They have achieved better performance by offering a unique positioning in the market.
	Using BMI for problem solving	Yunus et al. (2010)	Grameen Bank	Grameen Bank solved problems by formulating social business models by changing conventional thinking, searching for new partners, taking constant experimentation, finding social-profit-oriented shareholders, and identifying social profit goals.
		Witell & Löfgren, (2013)	Six manufacturers	The manufacturing firms solved problems by using different degrees of business model changes (minor, incremental, and radical BMI).
BMI Process Research	Engaging BMI over time for value creation	Visnjic et al. (2013)	Atlas Copco	Atlas Copco made a transition to product-service-based business models, and the firm tracked to keep aligning the relationship with products.
		Sjödin et al. (2020)	Firms in various industries	Firms' alignment processes of value creation (i.e., increasing value) and value capture (i.e., securing and distributing value) should be considered over time in the BMI.
		Sosna et al. (2010)	The Naturhouse	The firm achieved BMI based on trial-and-error learning and knowledge transfer process from individuals to the organization and vice-versa.
	Experiments and learning in the early stage of BMI	Cavalcante (2014)	Four satellite navigation organizations	Managers actively adopted experiments and learning in the early stage of the BMI to build effective business models.
		Ghezzi & Cavallo (2020)	Digital platform start-ups	Lean startup approaches (i.e., agile developments) helped develop BMI in the early stage by experimenting with business models, managing resources, and applying products/services.
		Frankenberger et al. (2013)	Six multinational firms of different industries	Firms took initiation, ideation, integration, and implementation phases to develop new business models.

many researchers have found a positive relationship between new business models and firm performance (Denicolai, Ramirez, & Tidd, 2014; Kim & Min, 2015; Zott & Amit, 2007), while others have revealed different or even inverse relationships (Knudsen & Mortensen, 2011; Visnjic et al., 2016; Visnjic & Looy, 2013). On the other hand, BMI process research provides more in-depth understanding regarding BMI by tracing firms' actions and reactions over time (McDonald & Eisenhardt, 2020; Sjödin et al., 2020). Although BMI process researchers have revealed firms' actions, many studies have been purely descriptive, discussing unique scenarios in particular contexts. Thus, these two research streams have discussed the same concept, but their approaches are difficult to combine.

Moreover, BMI outcome research has varied in the magnitude of change required to constitute BMI, treating both incremental changes and radical changes as "innovation" (e.g., Casadesus-Masanell & Zhu, 2013; Foss & Saebi, 2017). BMI outcome studies are also limited in explaining *how* firms can change their business models, because the actual BMI processes are often missing (Demil & Lecocq, 2010; Foss & Saebi, 2017). BMI process research can provide such explanations because they often compare patterns of firms' BMI processes and have developed a theoretical framework that treats the BMI process as a formula (e.g., McDonald & Eisenhardt, 2020; Sjödin et al., 2020). However, the process they have identified does not clearly match with the incremental and radical business models that discussed in BMI outcome studies.

Recent research has attempted to explore how process differences can lead to outcome differences. Berends and colleagues (2016) identified to process components—experiential learning and cognitive search—that could lead to different BMI outcomes depending on how they were ordered. They argued, "'drifting' starts with an emphasis on experiential learning and shifts later to cognitive search; 'leaping,' in contrast, starts with an emphasis on cognitive search

and shifts later to experiential learning" (Berends et al., 2016: 181). The authors attempted to understand how differences in the ways firms' BMI processes unfold over time led to different outcomes. Nevertheless, they stated that "both drifting and leaping can result in radical business model innovations" (p. 181), and their efforts did not present explicit connections between the patterns and different outcomes.

Since each BMI research stream has discussed different BMI phenomena, and researchers have failed to connect these two research streams, current BMI research has provided limited insights regarding how firms engage in BMI and the results of their BMI efforts (Amit & Zott, 2015; Demil & Lecocq, 2010; Foss & Saebi, 2017; Martins et al., 2015). Given a lack of comprehensive understanding of dynamic BMI processes, and different business models, my dissertation use the BMI process approach, develop in-depth knowledge about decision makers' BMI actions over time, and link the extent and nature of different BMI processes to different firm outcomes. As Sjödin and colleagues (2020: 179) stated, "Achieving business model alignment is a continuous practice and not a one-time activity." BMI evolves over time because external and organizational environments (Amit & Zott, 2001; Sosna et al., 2010) and decision-makers' perceptions and knowledge (Doz & Kosonen, 2010; Martins et al., 2015) constantly change. Therefore, I consider BMI as a process that can vary in its extensiveness and duration, and can both change existing business models to various degrees or create new business models. I expect to gain a comprehensive understanding of firms' business model changes by investigating firms' external and internal conditions as well as decision makers' decisions and actions.

Three Theoretical BMI Processes

Theoretical explanations of the BMI process have failed to generate cumulative insights. Many BMI researchers have observed that a business model changes when the firm's environment changes (Amit & Zott, 2001; Teece, 2010). Although these BMI researchers have emphasized external shock as BMI's main drivers, other researchers have acknowledged managerial cognition and organizational problems are additional important elements leading to business model innovation (e.g., Bock et al., 2012; Martins et al., 2015; Sosna et al., 2010). In discussing different causes of BMI, Martins and colleagues (2015) identified three theoretical lenses characterizing different BMI process explanations: (a) rational, (b) evolutionary, and (c) cognitive. Their study expanded decision makers' BMI decisions and actions based on different theoretical explanations by comparing the different causes, processes, and outcomes associated with each view. In this section I use Martins and colleagues' (2015) framework to evaluate the different BMI process perspectives and identify my dissertation's focus.

1. Rational Lens

According to the rational lens, business models are consciously designed systems that present decision-makers' rational choices (Casadesus-Masanell & Ricart, 2010; Martins et al., 2015; Zott & Amit, 2010). BMI begins with an environmental shock, or change (Amit & Zott, 2001). The new environment introduces new challenges, such as key resources becoming unobtainable (e.g., Kim & Min, 2015; Pearson & Clair, 1998) and stable stakeholders' actions becoming unpredictable (e.g., Pajunen, 2006; Teece, 2010). These challenges highlight weaknesses in existing business models, so decision makers innovate their business models in response (Teece, 2010). Researchers have argued that regulatory changes (e.g., Bask, Merisalo-Rantanen, Tinnilä, & Lauraeus, 2012), technology developments (e.g., Chesbrough, 2010), and

virtual market opportunities (e.g., Amit & Zott, 2001) have pushed decision makers to innovate their business models. For instance, Teece (2010) (also quoted by Martins and colleagues) stated "…when the underlying technology changes, and an established logic for satisfying consumer needs…is overturned, the business model must change too" (Martins et al., 2015: 101). Thus, the rational lens explains the BMI process as a causal mechanism where the decision maker's role is to align the firm's business model with the new environment.

According to this lens, decision makers manage BMI and create value by optimizing the BMI process via an economic mindset (Casadesus-Masanell & Ricart, 2010; Teece, 2010; Zott & Amit, 2015). For instance, Johnson and colleagues (Johnson, Christensen, & Kagermann, 2008) argued that firms evaluate their current business model and customers' needs to find areas requiring change and determine whether BMI efforts are worthwhile. More specifically, Amit and Zott (2016) proposed five steps in the BMI process: (1) observing problems, (2) synthesizing them with firms' objectives, (3) generating feasible solutions, (4) refining solutions, and (5) implementing the final choice. In this process, decision makers consider the firm's capabilities (e.g., opportunity recognition and resource availabilities) when adopting new business models (Amit & Zott, 2016; Teece, 2010).

The outcome of the BMI process is a new business model—which they conceive of as a designed system (Amit & Zott, 2001; Martins et al., 2015). Amit and Zott (2001, 2015) highlighted four ways that firms create value by changing business models: (a) *novelty* (i.e., adopting and governing new activities); (b) *lock-in* (i.e., retaining partners and customers by using positive networks and increasing stakeholders' switching costs), (c) *complementarities* (i.e., reinforcement of activities by promoting synergies through bundling products/services, activities, and technologies); and (d) *efficiency* (i.e., reducing costs by linking activities) (Amit &

Zott, 2001, 2015). BMI researchers have suggested that by using these value drivers, a new business model offers a firm the opportunity to achieve competitive advantage, ecological fitness, and sustainable performance (Amit & Zott, 2016; Bask et al., 2012; Brea-Solís, Casadesus-Masanell, & Grifell-Tatjé, 2015). Therefore, by making *optimal* choices, decision makers create new business models at various levels to achieve better outcomes. Table 2.5 summarizes previous rational studies that have discussed BMI's causes, processes, and outcomes.

However, this lens does not explain outliers that make extreme decisions, such as making no changes in the face of an environmental threat or creating a completely different business model that perhaps cannibalizes existing businesses (e.g., Johnson et al., 2008). Because it assumes there is an "optimal" outcome for a given set of conditions, the rational lens is also of limited utility in explaining why firms adopt different business models when they face similar conditions (e.g., Norris, Taylor Jr, & Taylor, 2021; Thorgren & Williams, 2020). Thus, these researchers have often confronted claims that decision makers are too cognitively limited to understand every aspect of their firms (Martins et al., 2015; Massa et al., 2017; McGrath 2010). Also, the rational lens assumes that managers make concrete decisions to rationally optimize the BMI process; thus, it does not consider why firms might engage in BMI when there are no significant environmental changes or problems (Martins et al., 2015).

2. Evolutionary Lens

The evolutionary lens describes the BMI process as being closely aligned with the behavioral theory of the firm (e.g., Andries, Debackere, & Van Looy, 2013; Frankenberger & Sauer, 2019; Martins et al., 2015). Unlike the rational lens, which views a business model as a designed system based on decision makers' optimal choices (Amit & Zott, 2016; Zott & Amit,

Table 2.5. Rationale Lens—BMI Causes, Process, and Outcomes

Author(s)	BMI Causes	BMI Process	BMI Outcomes
Amit & Zott (2016)	The rapidly changing economic landscape and Dynamic capability (sensing, seizing opportunity, transforming assets)	Five stages: observe, synthesize, generate, refine, and implement	Ecological fitness in a shifting environment
Bask et al. (2012)	An economic downturn, deregulation, and intensive competition	Engaging in mergers, acquisition, and partnerships, and developing business models to different service sectors	Transform from single or a few traditional banking services to multiple services (e.g., Banking, insurance, and asset management)
Brea-Solís et al. (2015)	Pricing problem, Efficiency problem, Performance downturn, and increased labor costs	Engaging in acquisition, investing in technology, and improving efficiency	Achieving a new business model, a large-scale development, and competitive advantage
Zott & Amit (2015)	Organizational goals, business model templates, environmental constraints, and stakeholders' activities	Five stages: observe, synthesize, generate, refine, and implement	Sustainable performance Competitive advantage

2015), the evolutionary lens suggests a business model is the result of a fine-tuning process and trial-and-error experimentation (Chesbrough, 2010; Dunford, Palmer, & Benveniste, 2010; McGrath, 2010; Sosna et al., 2010). Using the evolutionary lens, BMI researchers have argued that decision makers engage in BMI when they recognize problems or opportunities in an uncertain environment by searching for a solution (Cyert & March, 1963)—first through problem-solving routines and then by expanding their search if they initially fail to find a satisfactory solution (Berends et al., 2016; Martins et al., 2015; McGrath, 2010; Osiyevskyy & Dewald, 2018). Considering both optimization and accurate predictions challenging because of limited information, the evolutionary lens argues that continuous experimentation and trial-and-error learning are key elements of BMI processes (Cavalcante, 2014; McGrath 2010). Thus, rather than treating it as a linear process, like the rational lens, the evolutionary lens describes the BMI process as possessing non-recursive, or circular causality, with decision makers continuously searching for solutions to problems amid environmental uncertainty and refining their business models as new solutions are identified.

Because the evolutionary lens emphasizes experimentation and learning, they expect BMI to occur incrementally (Martins et al., 2015). For instance, McDonald and Eisenhardt (2020: 492) studied "how entrepreneurs effectively design business models in nascent markets," and emphasized BMI as an adaptive learning process. They found that entrepreneurs searched for solutions in other business models, developed their own prototype business models based on the search, then continued testing and developing the models until they created an effective business model (McDonald & Eisenhardt, 2020). Investigating Naturhouse's BMI process, Sosna and colleagues (2010) identified incremental developments via fine-tuning processes in various business dimensions (e.g., pricing, distribution, network, and knowledge transfer).

Using the evolutionary lens, BMI researchers have thus argued that business model changes are incremental because they result from BMI processes that change a particular part of the business model first, and then modify other areas until a *satisfactory* overall model is found (Sosna et al., 2010). Similar to the rational lens, the evolutionary lens also assumes that BMI's outcomes offer a firm the opportunity to achieve more effective business models and better performance (Berends et al., 2016; McDonald & Eisenhardt, 2020; McGrath, 2010; Sosna et al., 2010). Table 2.6 summarizes the evolutionary studies exploring BMI's causes, processes, and outcomes.

However, the evolutionary lens is limited because it does not explain why firms take radical actions from the get-go, as opposed to first engaging in prior incremental changes (Demil & Lecocq, 2010; Sorescu, 2017). Learning and incrementally adapting are key factors of the BMI process according to this perspective; however, while it is well suited to explain incremental BMI changes that lead to satisfactory outcomes, it does not address firms' optimal decisions or radical actions. When firms perceive problems, their capabilities are important factors that influence whether they make radical changes (Eggers & Kaul, 2018). Further, although the evolutionary lens focuses on learning and incremental adaptation, it has not fully articulated the different ways firms attempt to change their business models based on organizational capabilities (e.g., Snihur & Zott, 2020). Finally, BMI studies using the evolutionary lens often describe certain firms' BMIs in idiosyncratic ways; consequently, their explanations have limited generalizability (e.g., Berends et al., 2016; Sosna et al., 2010). Using the evolutionary lens, BMI researchers understand the causes, continuous processes, and outcomes in BMIs; nevertheless, the explanation is still limited.

Table 2.6. Evolutionary Lens—BMI Causes, Process, and Outcomes

Author(s)	BMI Causes	BMI Process	BMI Outcomes
Berends et al. (2016)	Unexpected problems (e.g., partnership, customer relationship, performance synergy) from new business model adaptation	Drifting patterns (start with a reconceptualization of business model) – a shift from taking experiential learning to taking cognitive search Leaping patterns (start with new conceptualization of business model)– a shift from taking cognitive search to taking experiential learning	Developing radical business model change
Dunford et al. (2010)	New market opportunity	Four processes: clarifying the core business model elements, responding to contextual conditions, experimenting with something new, and taking others' experience	Enhancing performance via internationalization
McDonald & Eisenhardt (2020)	No clear conceptualization of a business model	Parallel play steps: Borrow from others' business models, experimentation to test assumptions (learning), and pause (reflection) before applying the business model	Developing an effective business model that supports value creation
Sosna et al. (2010)	Decreasing revenue	Exploration – business model design, testing, development Exploitation – scale up with sustainable models, sustained growth via organizational learning	Enhancing performance Create value

3. Cognitive Lens

Unlike the rational and evolutionary lenses, the cognitive lens highlights that decision makers engage in BMI using their cognition and knowledge regardless of environmental changes (Doz & Kosonen, 2010; Martins et al., 2015). Based on cognitive perspective studies (e.g., Gavetti, Levinthal, & Ocasio, 2007; Gentner, 1983; Ocasio, 2011; Wisniewski, 1997), Martins and colleagues (2015) theorized how decision makers could proactively reconstruct, redesign, and reorganize their business models without exogenous environment pressures or a clear initiating problem or opportunity. They suggested that decision-makers' schemas provide new possibilities for changing business models. Specifically, Martins and colleagues (2015) discussed two cognitive mechanisms—analogical reasoning (Gentner, 1983) and conceptual combination (Wisniewski, 1997)—that decision makers can use to generate new business models. *Analogical reasoning* is the use of knowledge about one domain to understand information in a different domain; that is, by treating one domain as an analogy for another (Gentner, 1983; Martins et al., 2015). Using the method, firms can innovate business models by comparing similarities between the focal firm's and other firms' business models. *Conceptual combination* refers to a cognitive process in which different concepts are integrated into a new concept (Martins et al., 2015; Wisniewski, 1997). It is another way to engage in BMI by comparing differences among various business concepts and creating a new concept.

Both mechanisms share similar processes, as decision makers' using these cognitive processes follow the same four steps: (1) select a concept or a business model, (2) recognize its activities, (3) consider how it will apply to their firms, and (4) revise and adapt it as a new business model (Martins et al., 2015). More specifically, Martins and colleagues (2015) explained how both analogical reasoning and conceptual combination work within the four steps.

Using analogical reasoning, decision makers (1) select a concept that can apply to their target business model; (2) understand the concept's elements that could be used to create value; (3) compare the elements between the concept and their target business model and decide what elements to adopt; then (4) revise the borrowed elements to suit the target business model. Similarly, using conceptual combination, decision makers (1) select a concept that could be combined with their target business model; (2) identify differences between the two concepts; (3) determine which elements from the selected concept are useful and integrate them into the target business model; and (4) adapt elements to suit the target business model. Thus, decision makers use these mechanisms by applying their knowledge and ability to design innovative business models.

Other BMI researchers also have discussed how decision makers use their cognition to innovate firms' business models. Doz and Kosonen (2010) emphasized managerial meta-capabilities—*strategic sensitivity* (perception, awareness, and attention), *leadership unity* (ability to make decisions), and *resource fluidity* (capability to allocate resources)—to engage in BMI. Snihur and Zott (2020) found that decision makers (1) search for ideas for business models, (2) engage in system thinking and information processing, and (3) leverage power and expertise to implement business models. Based on these explanations, decision makers can proactively use their knowledge to engage in BMI without a particular exogenous cause (Martins et al., 2015). Thus, the cognitive lens's explanations can go beyond the other lenses' causal mechanisms (Chesbrough, 2010).

Moreover, managerial knowledge is an important resource for radical innovation (e.g., Miller, Fern, & Cardinal, 2007; Zhou & Li, 2012). Having a broad knowledge of different domains allows firms to generate novel ideas and new combinations (Taylor & Greve, 2006).

However, when the knowledge is shallow, it may promote incremental innovation, because radical changes require in-depth understanding of a specific domain (e.g., Laursen & Salter, 2006; Zahra & George, 2002). Thus, based on the cognitive lens's explanations, decision makers can possibly generate both incremental and radical business models using their cognitive capabilities (Aspara, Lamberg, Laukia, & Tikkanen, 2013; Doz & Kosonen, 2010; Martins et al., 2015), indicating that BMI's outcomes offer novel business models in various ways (Chesbrough & Rosenbloom, 2002; Doz & Kosonen, 2010; Martins et al., 2015; Snihur & Zott, 2020). Table 2.7 summarizes previous BMI cognitive studies explaining BMI's causes, processes, and outcomes.

However, approaching BMI using the cognitive lens also involves challenges. Massa and colleagues (2017: 83) stated that "business models in this interpretation are not fixed attributes of the firm, but instead reside in managers' heads…. Reducing business models to mental models only held by an individual can be misleading." Also, even when decision makers use schemas that "represent accumulated knowledge and provide frames for interpreting new information" (Martins et al., 2015: 103) to innovate business models, their decisions and actions can still change based on a firm's other conditions (e.g., stakeholders' beliefs, firms' reputations, and performance conditions) (Aspara et al., 2013; Doz & Kosonen, 2010). These other factors can shift decision-makers' attention, leading them to allocate and use their schema differently (Ocasio, 2011). Furthermore, BMI researchers using the cognitive lens have noted that firms primarily take ideas from existing business models (Martins et al., 2015; Snihur & Zott, 2020). That approach may limit explaining radical business model changes that did not previously exist. Thus, BMI studies using the cognitive lens have not fully addressed BMI processes and how decision makers' decisions and actions are affected by other factors.

Table 2.7. Cognitive Lens—BMI Causes, Process, and Outcomes

Autor(s)	BMI Causes	BMI Process	BMI Outcomes
Doz & Kosonen (2010)	TMT members' meta-capabilities (Strategic sensitivity, leadership unity, and resource fluidity)	Three broad steps: Strategic sensitivity (anticipating, experimenting, distancing, abstracting, and reframing) Leadership Unity (dialoguing, revealing, integrating, aligning, and caring) Resource Fluidity (Decoupling, Modularizing, Dissociating, Switching, and grafting)	Achieving successful business model renewal and transformation
Aspara et al. (2013)	Profitability problems and top managers' consensus to change a business model	Having inter-organizational negotiations, choosing a business to change based on reputation, and retaining and removing businesses to change business models	Achieving effective business models that enhance performance
Martins et al. (2015)	Knowledge and information	Four steps: select a concept or a business model, recognize the activities of it, consider how it will apply to target firms, and revise and adapt it	Reconfigured business models that support value creation
Snihur & Zott (2020)	Decision-makers' novelty orientation based on search behavior, thinking, decision making patterns	Take structural imprinting and cognitive imprinting processes Structural imprinting influence and reinforce cognitive imprinting process and vice versa	Achieving novel business models

Comprehensive Understanding in BMI

Using three different lenses, BMI researchers have provided different explanations for BMI's causes, processes, and outcomes. Although those explanations offer insight into how firms develop new business models, these varied discussions using different lenses hinder developing a cumulative and systematic explanation of BMI. BMI studies have often presented practical examples of BMI (e.g., Amazon, Netflix, and Xerox); but each study has presented a distinctive explanation aligning with a specific theoretical lens. For example, *rational lens* studies have highlighted Netflix's capabilities and optimization process (e.g., Christensen, Bartman, & Van Bever, 2016; Teece, 2010); *evolutionary lens* studies have discussed Netflix's experimentation and learning processes (e.g., Bouwman et al., 2019; McDonald & Eisenhardt, 2020); and *cognitive lens* studies have emphasized Netflix's imprint on other firms' business models (e.g., Snihur & Zott, 2020).

Amit and Zott (2015) attempted to encompass these three lenses by connecting multiple factors (managerial goals, other firms' business models, stakeholder activities, and environmental constraints) to different BMI value-driving outcomes discussed earlier: *novelty*, *lock-in*, *complementarities*, and *efficiency*. By investigating nine ventures during 2007 and 2008, these researchers provided rich insights into how the multiple factors foster BMI and results in different outcomes. Nevertheless, their study focused on capturing static changes by connecting different antecedents and results to develop a more predictive theory rather than understanding dynamic BMI processes.

Similarly, BMI outcome researchers discussed various types of new business models as outcomes (e.g., Casadesus-Masanell & Zhu, 2013; Foss & Saebi, 2017; Santos et al., 2009), and they made connections between these outcomes and firms' prior conditions such as external,

organizational, and managerial factors (e.g., Von Delft, Kortmann, Gelhard, & Pisani, 2019; Narayan, Sidhu, & Volberda, 2020; Saebi et al., 2017; Velu & Jacob, 2016). However, BMI processes within the relationships are often missing, or describe a particular context. BMI process researchers captured a process that explains how decision makers engage in BMI, their findings are not well connected with decision-makers' different BMI decisions and actions. Thus, the field still has not yet connected all the dots (i.e., causes, processes, outcomes) of knowledge in BMI. I believe that studying dynamic BMI processes can help connect these dots to make patterns.

Therefore, studying BMI with a single lens can limit scholars' abilities to capture the full scope of decision makers' choices and actions as they evolve over time in response to each BMI's outcomes and feedback, and the cognitive processes through which they are interpreted. In my dissertation, I address these limitations and attempt to provide a more comprehensive understanding of the BMI process in the face of changing environmental circumstances, exploring the ways and extent to which decision makers search for alternatives, the various physical, social and financial resources and constraints they face, and the different ways they interpreted and combined these exogeneous and endogenous factors to engage in BMI.

Specifically, I conducted a real-time study of BMI during the COVID-19 crisis because the mechanisms underlying firms' different BMI reactions in the face of the same exogenous threat have not been clearly studied. The pandemic crisis has disrupted firms' economic activities, created functional problems and new business opportunities, and increased concerns about existing business models (Giones et al., 2020; Kuckertz et al., 2020; Norris et al., 2021). Further, by studying ongoing BMI as the process unfolds, I gained insights into the non-recursive aspects of BMI, whether and how decision makers' perceptions and interpretations evolve in

response, and how this affects the extent and direction of their BMI. Thus, my dissertation explores the following questions: (a) *What are decision makers' BMIs in response to the COVID-19 crisis? and (b) How and why have the decision makers' BMIs unfolded differently over time given the same exogenous change?*

To answer the questions, I considered various factors (e.g., external changes, organizational conditions, and managerial cognitions) that lead restauranteurs to different decisions and actions. Many BMI researchers have noted that decisions and actions are essential for BMI (Casadesus-Masanell & Ricart, 2011; Chesbrough, 2010; Doz & Kosonen, 2010; Martins et al., 2015). Therefore, I studied restaurants' decisions and actions over time to identify the patterns of their BMI processes. By taking a longitudinal approach, I examined the speed and magnitude of response from various decision makers and tracked their BMI processes. As a result, the study provides a comprehensive understanding of a dynamic BMI process.

In the next chapter (Chapter 3), I discuss my multiple case design and my research context. In Chapter 4, I provide the findings from the analysis. Then in the following chapters (Chapter 5 and Chapter 6), I discuss my topic modeling methods as well as the findings of the analysis.

CHAPTER 3

QUALITATIVE STUDY METHODS

The COVID-19 crisis provides an exceptional opportunity to understand BMI processes in real time. First, all firms are faced with the effect on regular business activities around the same point in time in March 2020. Second, there was a tremendous lack of clarity and no successful templates for navigating the uncertainty around this crisis. Third, crises enhance the likelihood of undertaking BMI (Björklund, Mikkonen, Mattila, & van der Marel, 2020; Norris, Taylor Jr, & Taylor, 2021). Thus, I investigated decision-makers' BMIs in response to the COVID-19 crisis within one industry to understand how and why their decisions and actions differ in the face of the same environmental threat.

In the previous chapter, I concluded from my literature review that there is a need for more exploratory research related to understanding different BMI decisions and actions when faced with the same environmental change. Because of the state of the BMI literature, I undertook a multiple case study of 17 companies in one locality, primarily using three stages of interviews. The multiple case study method allows me to develop a deep understanding of how several companies in the same industry adapted during the COVID-19 pandemic, and how their business model innovations evolved over time as conditions changed.

Research Context

My dissertation focused on the restaurant and food-service industry. In any society, restaurants have a bigger meaning than just making and selling food and drink. Non-food elements, such as their emotional and social aspects, also attract people to eating establishments. They are essential places for social gatherings and interactions that provide human needs. Also, restaurants are an important source of jobs, and the industry is a vital economic pillar. According to the National Restaurant Association (NRA, 2019), the U.S. restaurant industry was projected

to hire more than 15.3 million people and achieve total sales of $ 863 billion by the end of 2019. Therefore, restaurants are a vital part of everyday lives and the economy that were disrupted by the pandemic.

On March 11, 2020, the World Health Organization (WHO) declared the spread of the coronavirus a pandemic. Many state and local governments in the United States enacted restrictions on restaurants because they were "non-essential" businesses. Restaurants were asked to follow social distancing guidelines and use alternative business models—no dine-in, only take-out, drive-thru, and/or delivery. Many restaurants laid off all their staff and posted signs saying, "CLOSED until further notice." Even when regulations eased weeks later, restauranteurs struggled to deal with environmental changes. To date, over 110,000 restaurants have permanently or temporarily (long-term) closed, over 3.1 million employees lost their jobs, and the industry's economy was in a free fall (Gonzalez, 2020; NRA, 2020).

The pandemic crisis caused massive disruptions in most businesses, but restrictions and consumer fear of social gatherings added another layer of interruption to restaurants, because you cannot eat while wearing a mask. Understanding these restauranteurs' stories during the COVID-19 crisis is important because they: (a) are many cities' essential economic pillars; (b) are closely linked to other industries; (c) are largely owner-operated; (d) employ millions; (e) are ubiquitous; (f) vary dramatically in size, resource availability, and market segments served; and (g) have visible business models (i.e., menus and physical spaces: see Björklund et al., 2020). Thus, from a research perspective, the restaurant industry's characteristics are useful for understanding different types and practices in BMIs.

In addition, given the sudden and unprecedented nature of the pandemic, decision-makers' leadership is more important than ever because the event offers new opportunities and

insights while putting most firms at risk by changing their organization-environment fit, raising decision uncertainty, and hindering strategic actions (e.g., Audia, Locke, & Smith, 2000; Bundy, Pfarrer, Short, & Coombs, 2017; Meyer, 1982; Milliken, 1987; Sine & David, 2003). Thus, a crisis setting is a good opportunity to delve into business owners' decisions and actions related to their BMI, because the setting provides the chance to explore real-time actions in a compressed fashion. I took the opportunity to study BMI and to understand business owners' different reactions and adaptations in response to external changes, an area that has not been fully explored in BMI research (Foss & Saebi, 2017).

Multiple Case Study Design

I used a multiple case study design (Eisenhardt, 1989, 2021), but there are different types of multiple case designs from which to choose: (a) common antecedents (i.e., studying cases with a common antecedent that influences outcomes); (b) common processes (i.e., revealing cases' processes and/or outcomes in response to the same phenomenon, but in different settings); (c) matched pairs (i.e., comparing two similar cases' processes and outcomes); (d) polar types (i.e., studying cases that extremely different in certain dimensions, but similar on others); and (e) racing (i.e., studying similar cases that start actions at the same time and comparing their outcomes at a certain point) (Eisenhardt, 2021). Among these different multiple case study approaches, the best fit for my study is the *common antecedents* design. Researchers study seemingly similar cases to reveal distinct processes and/or outcomes that result from a common event or experience. For example, Smith and Zeithaml (1996) used this multiple case study approach to research how firms in one industry (local telecommunications providers) changed; specifically, whether they undertook international expansion processes after the 1984 break-up of

AT&T. Using the cases that are experiencing COVID-19 as a main phenomenon, I developed a deep understanding of the BMI process within each case, and then compared across all cases.

The multiple case design, or *the Eisenhardt Method* (Eisenhardt, 2021; Langley & Abdallah, 2011) is not without its critics. Welch and colleagues (Welch, Piekkari, Plakoyiannaki, & Paavilainen-Mäntymäki, 2011) argued that the method is weak on causal explanation and contextualization. They posited that the method embraces a positivist view that only allows researchers to capture construct relationships that emerged in most cases, while downplaying each case's differences. However, Eisenhardt (2020: 223) refuted that critique by saying, "the use of theory building from cases, and broadly case methods is diverse and increasingly rich." In further defending the method, Eisenhardt explained that each case is viewed as a natural experiment, which allows researchers to develop a theoretical logic with causal explanations (e.g., Eisenhardt, 2021; Eisenhardt & Graebner, 2007; Hallen & Eisenhardt, 2012).

However, Eisenhardt does not fully discuss how to study organizational changes over time (Eisenhardt, 1989, 2021). She (Eisenhardt, 2021) points to Langley's (1999) work as offering key insights into studying how changes evolve over time. My multiple case study approach followed the Eisenhardt method (Eisenhardt, 1989, 2021), but also leveraged Langley's insights on process changes over time (Langley, 1999; Langley et al., 2013). My question—*how* and *why* firms facing the same exogenous threat react differently, creating different BMIs and undertaking different BMI processes—fits with "process studies [which] address questions about how and why things emerge, develop, grow, or terminate over time, as distinct from variance questions dealing with covariation among dependent and independent variables" (Langley et al., 2013: 1).

Data sources

For the multiple case study, my principal data source is semi-structured interviews of 17 restaurants or restaurant groups from one city in the Southeastern United States[1]. These restaurants were selected to include organizations of different sizes, with different histories, cuisines, locations, and resources. I used a combination of direct contacts and snowball sampling because "the method yields a study sample through referrals made among people who share or know of others who possess some characteristics that are of research interest" (Biernacki & Waldorf, 1981: 141).

Our informants are restaurant owners—and, in some cases, restaurant managers—who controlled decisions relating to restaurant operations that affected their business model. Thus, these interviewees were able to explain decisions and actions related to business model changes. I conducted three panels of open-ended, semi-structured interviews (Eisenhardt, 1989). The interviews' stages were: (1) following the initial implementation of restrictions of wide-spread government restrictions (May to June 2020) to identify their actions in sudden external changes; (2) before the results of the November 2020 U.S. presidential election (mid-October to early November 2020) to avoid the dramatic impacts from the new COVID-19 policies; and (3) a year after the initial responses to the pandemic to evaluate their overall BMI process and vaccines began to mitigate the COVID-19 threat (May to June 2021) to capture whether the restaurants maintain or eliminate changes in their business models. Table 3.8 summarizes key characteristics of the firms in our study.

[1] The University of Tennessee, Knoxville Institutional Review Board (IRB) approved (UTK IRB-20-05844-XM).

Table 3.1. Overview of Interviews

Restaurant (*)	Interviewees	Number of stores	Years in business	Cuisine types	Restaurant types	Locations
Big Shoulder	Owner	1	1	Vegetarian, Mediterranean	Casual dining	Downtown
Traveler	Owner	1	4	Italian	Casual dining	Downtown
Hospitality	Owner and Manager	1	4	American	Fine dining	Downtown
Unconventional	Owner	1	8	Snack	Pop-Up food stands	Neighborhood
Rebel	Owner	1	9	American	Casual dining	Neighborhood
Happy	Owner and Manager	1	+ 10	Thai	Casual dining	Neighborhood
Steady	Owner	1	+ 30	Chinese	Casual dining	Shopping District
Family	Owner	1	+ 30	American	Casual dining	Neighborhood
Meditation	Two Owners	2	5	Japanese, Mexican	Casual dining	Downtown
Special	Owner	2	+ 40	American	Fast food	Shopping District
Musician	Owner	2	+ 10	American	Casual dining	Downtown, Neighborhood
Polymath	Owner	3	3	Coffee, Bread	Coffee shop	Downtown, Shopping District
Golfer	Owner	3	7	American, Italian, Bread	Fine dining, Casual dining	Downtown, Neighborhood
Beaver Dam	Owner	3	+ 10	Coffee, Bread	Coffee shop	Downtown, Neighborhood, Shopping District
Food Network	Owner	15	+ 10	American	Fine dining, Casual dining	Downtown, Shopping District
Mathematician	Owner	20	+ 20	American	Fine dining, Casual dining	Downtown, Shopping District
Gladiator	Owner and a Partner	20	+ 20	American	Casual dining	Shopping District

Note: (*) Disguised due to confidentiality of restaurant name.

Beyond just interviews, I also took photographs of the restaurants in the study (taken throughout the yearlong data collection process) and collected archival materials (e.g., from social media and press releases) to provide a richer view of each firm. Prior to conducting each round of interviews, I visited the restaurants to take pictures of public spaces (e.g., outside and posted notes). I also collected these restaurants' social media posts (e.g., Facebook and Instagram) and tracked local news media about them. Then, I analyzed (a) their BMI decisions and actions during the COVID-19 pandemic and (b) how and why their BMI unfolded when confronted with the same external challenge.

Data analysis

Pushing back against the narrative that the Eisenhardt approach is a template with the potential for mindless application (Köehler, Smith, & Bhakoo, 2019), I have approached data analysis with a *methodological bricolage* mindset, which combines methods for solving a methodological problem (Pratt, Sonenshein, & Feldman, 2022) and focuses on innovative approaches to data analysis and display (Lê & Schmid, 2022). To make sense of my data, I started with writing a narrative or mini-case for each of the 17 cases (Langley, 1999). This described the key facets of each case. Langley suggests creating narratives early on when analyzing process data as a way to organize the tremendous volume of process data, and to provide a way early in the data analysis to get a broad grasp on the emergent story in the data (Langley, 1999). To complement these narratives, I sketched a visual map in which I highlighted key events over time for each case. Langley (1999) noted that a visual map is an intermediate data analysis approach for process data between the raw data and theoretical considerations. I included my photographic and archival data in these narratives and visual maps. I then shared

these 17 narratives and visual maps with other researchers who participated in the interviews to ensure that I accurately captured key aspects of the case.

After I completed the narratives and visual maps for each case, I open coded the cases using the grounded theory approach Langley (1999) described, which is coding from the data inductively, rather than using a theoretical lens. Using the Computer Aided Qualitative Data Analysis Software QDA Miner (CAQDAS) for this open coding, I did not start with a predefined codebook, but instead let the initial codes emerge from my field notes during interviews, discussion with dissertation committee members, and review of the 17 narratives.

I used different coding techniques to review, condense, and refine the codes, such as searching for particular words or phrases, reviewing code frequencies, and other CAQDAS mechanisms (O'Kane, Smith, & Lerman, 2021) and stepping through the six initial coding actions suggested by Locke, Feldman, and Golden-Biddle (2022). Locke and colleagues (2022) suggested the pragmatic use of theory as the codebook is emerging. By iterating through the data using many of these techniques, I developed a code book which includes facets of the restauranteurs' BMI actions and factors they identified as affecting the process. Then, I applied these codes across all cases. There were several checks on my coding, such as code frequency checks, comparison of word frequencies and code frequency, and the query by example and code retrieval, three techniques suggested by O'Kane and colleagues (O'Kane et al., 2021).

After I completed and vetted the coding, I looked at the coding across the three phases of the data collection to develop a sense for the case over time. This data analysis process is referred to as temporal bracketing, in which different phases of a firm's decisions and actions are compared (Langley, 1999). My analyses included assessing how BMI aspects are associated with factors that interviewees noted as affecting the process.

Then, I compared the cases with each other using a synthetic process data analysis approach (Eisenhardt & Bourgeois, 1988; Langley, 1999). Some of the cases were more similar to each other, creating patterns of similar BMI processes. Conducting a code frequency comparison (O'Kane, et al., 2021) helped to determine if there are similar patterns within and between cases. This case comparison required, "constant iteration backward and forward between steps" as Eisenhardt (1989: 546) described. Case comparison was iterative and required the input of others involved in the data collection. The other researchers—who had published many qualitative studies in top management journals and were experts in qualitative research methods—and I met with all coded cases in a conference room several times (after the second and final interviews) to compare and contrast their BMI actions and processes. I hung key BMI attributes, decisions, and actions of 17 restauranteurs on the wall, and we spent many hours discussing similarities and differences in restauranteurs' BMI actions and processes.

So, while I describe the overall data analysis process above in a linear fashion, I was aware of the iterative nature of qualitative data analysis before key themes and findings emerge from this inductive process (Alvesson & Sköldberg, 2017; Crabtree & Miller, 1999). Based on this process, I present and discuss emergent BMI causes, actions, and processes. This analysis created rich and detailed explanations of BMI in terms of *what* has been undertaken, *why*, and *how*.

CHAPTER 4

QUALITATIVE STUDY FINDINGS

During the pandemic, restauranteurs faced uncertainty resulting from unexpected external and internal challenges. Owners made sense of these environmental and organizational challenges in different ways, with some owners identifying them as opportunities for growth and change and other owners identifying them as threats. Their subsequent business model innovation actions reflected how owners interpreted environmental and organizational cues to "make sense" of the unfolding situation and "take action" (Maitlis & Christianson, 2014; Weick, 1995). Thus, the sensemaking frame used emerged as a critical for understanding the array of business model innovations (BMIs) resulting from the pandemic. Sensemaking processes have not been fully connected to the BMI literature to date. In this chapter, I make the link between these restauranteurs' sensemaking and their BMIs.

A sensemaking frame highlights the process of "meaning construction whereby people interpret events and issues within and outside of their organizations that are somehow surprising, complex, or confusing to them" (Cornelissen, 2012: 118). This process includes (1) noticing cues—how sensemaking started with an event, (2) making interpretations—how meanings are created and developed, and (3) taking actions—how actions are derived from sensemaking (Maitlis & Christianson, 2014). This is a continuous process, because taking actions to solve a problem can resolve the immediate issue while creating new problems to solve (Shrivastava, 1987; Weick, 1988). Also, environmental conditions change over time, creating new challenges, while changing the character of or resolving existing challenges.

Figure 4.1 shows how 17 restauranteurs engaged in an array of BMIs during the pandemic. My data show that these restauranteurs made sense of the changes in different ways,

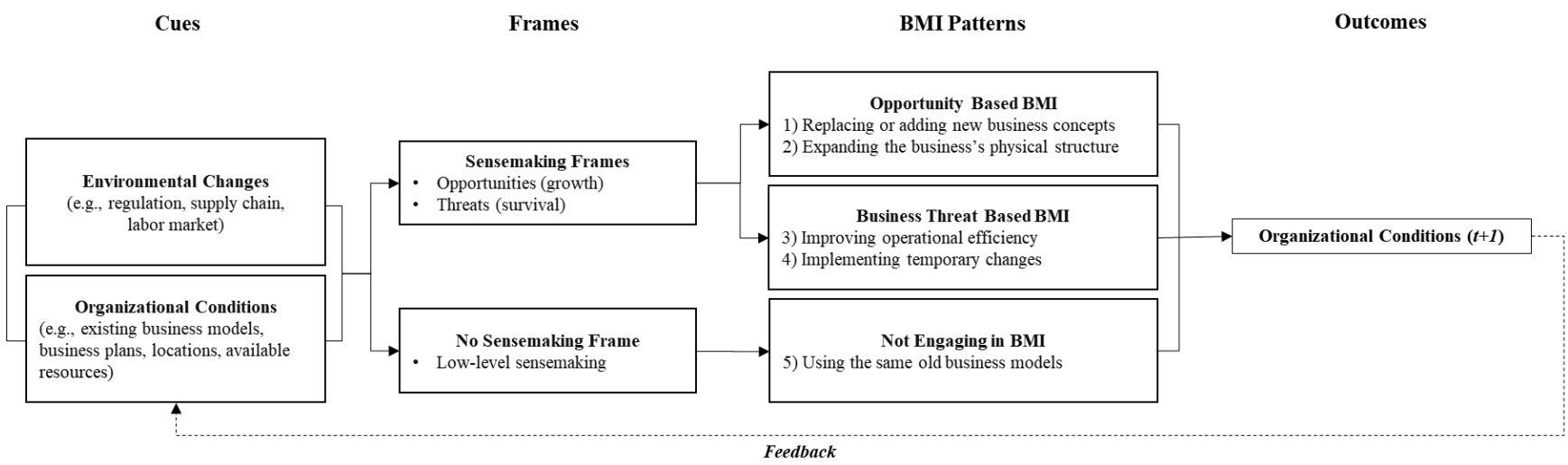


Figure 4.1. Business Model Innovation during a Crisis

resulting in a variety of BMIs. Their changes were a result of their sensemaking process. Some restauranteurs employing an opportunity sensemaking frame identified growth opportunities or adapted their business models to incorporate new concepts, sometimes radically changing or expanding existing business concepts into a new business or market. Other restauranteurs, who faced fewer challenges with their current business models during the pandemic, developed their models further by expanding the sizes of their restaurants and adding new services and operations.

Another group of restauranteurs employing a threat sensemaking frame focused on a single part of their business model, or responded by putting a renewed focus on managing costs. Restauranters in this group were focused on improving profitability—some were changed operational processes to reduce costs, while others attempted to increase revenues by adding sales channels. While some of these changes were permanent, others made temporary service and product changes that were reduced or removed as COVID restrictions were loosened.

Finally, some restaurants did not actively engage in sensemaking (i.e., low-level sensemaking), and made any appreciable changes in their business models. Because they experienced no significant changes in performance, and some of them were even performing well during the early months of the pandemic, they maintained the status quo and made minor changes to their business models over the course of my study.

Because my study was longitudinal, I found that some restauranteurs employed different frames across time, and changes to their BMIs in one period led to changes in their organizational conditions, which led to different responses in the following period as environmental conditions continued to change. Thus, changing environmental and organizational conditions subsequent actions and BMI changes over time. I also found that whereas some

restauranteurs consistently employed the same sensemaking frame, others switched frames over time. Next, I will discuss each of the model's elements (Figure 4.1) in detail, describe the five general approaches to BMI my multiple case study revealed, and discuss how they differed over time.

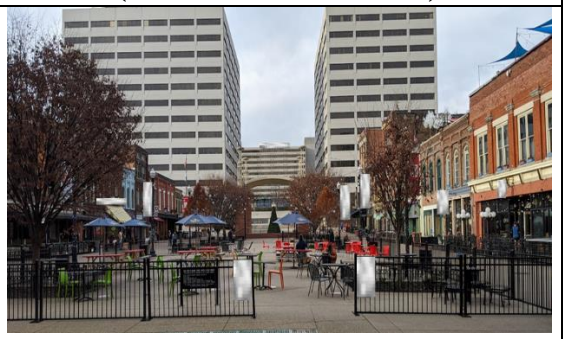
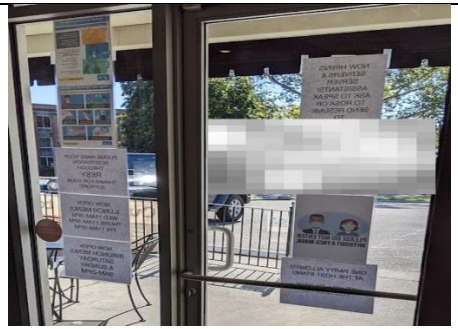
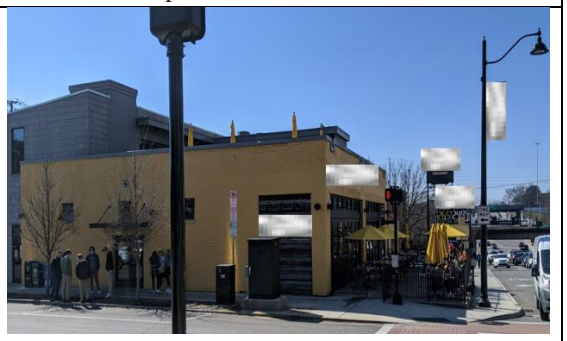
Cues

Environmental changes and organizational conditions provided cues that restauranteurs interpreted through opportunity and threat sensemaking frames. An environmental crisis, such as the regulations and other changes (e.g., customers' behaviors, supply chain shortages or disruptions, labor market issues) that the pandemic generated can instigate sensemaking processes that lead to BMIs (Maitlis & Christianson, 2014; Weick, 1988; Zott et al., 2011).

Environmental Changes. In response to COVID-19, federal and local governments changed regulations, creating a series of disruptions across industries, supply chains, labor markets, and many businesses. Table 4.1 illustrates how the environment changed over time during the pandemic in my research context. Table 4.1 contains example pictures that I took before conducting each round of interviews—the first phase was from March to July 2020; the second phase was from July to early November 2020; the final phase was from the middle of November 2020 to May 2021.

On March 20th, 2020, the local government issued an order closing dine-in activities at restaurants to reduce the spread of the COVID-19 virus, but restaurants were allowed to offer delivery and to-go services. A few days later (March 23rd, 2020), the local government issued a closure order for non-essential businesses and urged residents to stay home and avoid social gatherings. These orders were in effect until May 1st, 2020, and had different effects based on the organizational cues, which I discuss in more detail below. Along with the regulations,

Table 4.1. Examples of Environmental Conditions

Environmental Conditions		
1st Phase (March – July 2020)	2nd Phase (August – Early November 2020)	3rd Phase (Mid-November – June 2021)
 2:11 p.m. April 15th, 2020	 8:11 p.m. September 11th, 2020	 3:52 p.m. December 23rd, 2020
 1:16 p.m. April 15th, 2020	 2:30 p.m. October 22nd, 2020	 12:50 p.m. February 20th, 2021

restauranteurs also experienced supply chain disruptions for multiple reasons, such as increased demand, decreased production, labor shortages, periodic shutdowns due to COVID outbreaks, and international trade restrictions. Customers were afraid to visit restaurants, employees were reluctant to work in restaurants, and the government's restrictions, such as a 50 percent capacity limit and increased minimum spacing between tables (after May 1st, 2020), and mask requirements created challenging situations.

During the second phase of my study (August 2020 to early November 2020), restrictions were similar to the first phase for restaurants (e.g., 50 percent capacity, social distancing, and mask mandates), and sourcing some ingredients (e.g., meat, fish, grain) and materials (e.g., to-go containers, food prep gloves) was still problematic. As more people began to visit restaurants during this phase, restaurant owners posted signs requiring facemasks and social distancing to reduce the threat of the COVID-19 virus spreading. At this time, having outdoor dining areas was important for restaurant businesses because customers preferred outdoor seating over indoor seating due to better air ventilation and a lower risk of infection (See the example images in the second column of Table 4.1).

In the last phase of my study (middle of November 2020 to May 2021), restauranteurs mentioned that their sales had improved, and sourcing issues (ingredients and materials) were mostly resolved, except for a noticeable increase in prices for these goods. Even though the number of COVID-19 cases significantly increased and similar restrictions were imposed on restaurants during the winter months of 2020 and early 2021, customers continued to visit restaurants. Because of the cold weather, providing outdoor dining was difficult, but more customers were willing to eat inside the restaurants (See the example images in the third column of Table 4.1). However, many restaurant owners were unable to meet the increased demand due

to being understaffed. Even when many restauranteurs offered higher wages and better benefits, they still struggled to find servers and cooks.

In sum, restauranteurs experienced environmental uncertainty and challenges throughout the pandemic, such as changes in regulations (e.g., no dine-in and 50 percent capacity), customer behaviors (e.g., more to-go and delivery orders, prefer outdoor dine-in), supply chains (e.g., difficult sourcing ingredients and materials), and labor markets (e.g., staffing challenges).

Not all environmental changes were challenging—the U.S. government helped restaurants with financial support such as the Paycheck Protection Program (PPP), the COVID-19 Economic Injury Disaster Loan (EIDL), and many other programs; customers supported local restaurants by ordering food and leaving generous tips for employees (two of our restauranteurs reported receiving $1,000 tips); and landlords and banks worked with restauranteurs to defer rent or mortgage payments without penalties. The government also provided increased unemployment benefits that made it easier to lay off employees during the first phase, knowing that they would still receive a decent income. These environmental cues evolved across the pandemic.

Organizational Conditions. Although an environmental crisis is a key trigger for entrepreneurs' sensemaking and actions, other cues (e.g., organizational financial, human, and social resources, physical structures and locations, and primary sales channels) are also important sensemaking triggers (Maitlis & Christianson, 2014; Maitlis & Sonenshein, 2010). Unexpected environmental changes may not be enough to trigger a sensemaking process because some entrepreneurs may not experience any challenges from the changes (Maitlis & Christianson, 2014). Some restauranteurs may have large indoor and outdoor dining spaces to provide enough social distancing; multiple drive-thru lanes and online delivery services as the main sales

channels; loyal employees who want to stay with the business; a network of individuals who can share their knowledge of new business operations and market conditions; and enough financial resources to keep the business running even with reduced sales. However, others were in buildings or geographic locations that made drive-thru pick-ups impossible, and carry-out orders difficult; relied on local office worker foot traffic for business, had limited cash reserves, or were more isolated from the restaurateur networks. Further, whereas some owned single restaurants and could make quick adjustments, others owned or were part of multi-restaurant chains that made it difficult to adapt quickly. Regardless, most restaurant owners faced uncertainty from the pandemic and their organizational conditions were a key input when formulating their responses. I will discuss further how organizational conditions, along with environmental changes, were important positive and negative cues for restauranteurs' sensemaking processes.

During the first phase, sudden restrictions (e.g., no dine-in, followed by 50 percent capacity with social distancing, and stay-at-home office workers) posed difficulties for restauranteurs who relied on dine-in services as their primary revenue generators; who had small restaurant spaces with limited abilities for social distancing; and who were running businesses in downtown areas with no customers nearby. Some restauranteurs, on the other hand, faced few challenges or even recognized opportunities to grow because they already had a variety of services (e.g., drive-thru, online delivery, and to-go) to offer without dine-in services, large indoor and outdoor spaces for social distancing, a food concept that traveled well within containers, and enough financial resources they could use to survive.

Later, new restrictions and environmental changes arose, such as the mask mandate rule, cold weather during winter, disruptions in the supply chain, and staffing issues. Some of these changes created new issues for restauranteurs. For example, when the pandemic began, large

restaurant groups furloughed the majority of their employees, making it difficult to bring them back or hire new employees for the business; small restaurants that tried to retain their loyal employees faced almost no staffing challenges later in the pandemic. Mask requirements also posed difficulties for servers. Restauranteurs and servers had to spar with customers who refused to wear masks. Restaurants that were busy with drive-thru and to-go services but did not offer dine-in service were not required to enforce the restriction. At the same time, federal PPP and EIDL loans provided financial resources that allowed many of the restaurants to survive, and some to pursue opportunities to implement new business models as PPP loans became more flexible in subsequent rounds.

Throughout the pandemic, some restauranteurs were helped by others, including business partners, mentors, and other restauranteurs. A group of restauranteurs did not have to learn through trial-and-error experiments because other restauranteurs with similar organizational structures (e.g., similar restaurant locations, similar business concepts, owned multiple restaurants in different locations, or were franchisees with the same chain) shared their experiences with different BMI actions, helping restauranteurs to vicariously learn what works and what does not. Ownership also matters—some restauranteurs have partners who can provide financial resources to expand the business and try new concepts, discuss new ideas, and interpret cues together. However, some restauranteurs lacked external networks, so they worked closely with employees and family members to understand environmental cues.

Therefore, during the pandemic, many restauranteurs experienced challenges and found opportunities with their existing business models that aligned with their organizational conditions such as physical locations and structures of stores, food styles, available sales channels, and organizational resources (e.g., financial, human, and social). In addition, some

restauranteurs were working on previously planned projects like opening a new restaurant, renovating existing stores, or testing new business concepts. And not all restauranteurs were solely focused on their restaurant businesses; they had other businesses or personal concerns they prioritized. All these organizational conditions were fodder for restauranteurs' sensemaking.

Sensemaking Frames

The restauranteurs made sense of their environmental and organizational cues by approaching them as opportunities or threats (Christianson, Farkas, Ravasi & Schulz, 2006; Sutcliffe, & Weick, 2008; Seeger & Ulmer, 2002). Also, some restauranteurs did not actively engage in sensemaking (i.e., low-level sensemaking). Although the environmental changes were similar for all the restauranteurs in my research (i.e., data collected in the same area facing the same COVID restrictions), their organizational conditions (e.g., existing business models, resource availability, physical structures) varied. Restauranteurs' perceptions of environmental and organizational cues resulted in unique interpretations. Table 4.2 provides example quotes of restauranteurs' different interpretations of similar environmental and organizational cues.

Some restauranteurs used an opportunity sensemaking frame and interpreted cues as a growth opportunity. For instance, Traveler was entirely focused on dine-in services in the downtown area, and his food style did not fit with offering to-go orders before the pandemic. He worked on developing a new business model by adding a new food style that would work well with carry-out and bought new equipment to make this new food style. He planned to open a second restaurant in the near future based on the new concept. After the pandemic started, Traveler saw it as an opportunity to test the new food style and said, "We knew we liked the concept [their new concept], but we didn't know how or when we would roll it out …in the pandemic, and that concept fits in a world where people don't want to eat in." Thus, he

Table 4.2. Examples of Opportunity, Threat, or Low-level Perceptions

Sensemaking Frame	Time	Opportunity, Threat, or Low-level Perceptions
Opportunity Frame	1st Interview May – July, 2020	*"I think COVID helped me to take it [a restaurant spot] over. The feel-good thing that happened since COVID."* (Big Shoulder) *"We knew we liked the concept [their new concept], but we didn't know how or when we would roll it out …in the pandemic, and that concept fits in a world where people don't want to eat in."* (Traveler)
	2nd Interview Oct – Early Nov, 2020	*"In [neighborhood A] specifically, they've got a tun of restaurants. Ninety percent of them are fast food and quick service restaurants... We wanted to make a good sit-down restaurant, full bar. We've never had that before… We just thought that's what [neighborhood A] needed. Yeah, change it up."* (Musician) *"I guess of just some of the deals that are out there. And I think if is a business is healthy and is willing to really look for growth…I think now is the time to grow, at least for us. It's amazing what's out there right now."* (Beaver Dam)
	3rd Interview May – June, 2021	*"The market is set to be a rocket ship, right?…It's just like everybody has extra money, they have pent-up demand, they haven't done anything in a while. It's the perfect recipe for us to be successful."* (Food Network) *"I'm just fortunate that we have had the opportunity to push forward and have had some help doing that whether it be government, state, or whatever."* (Rebel)
Threat Frame	1st Interview May – July, 2020	*"This whole thing…nothing has happened like this in my lifetime. Nothing like this… The devastation of 9-11, it was centralized and it was bad, but…this [COVID-19] affects everybody and that's the thing."* (Gladiator) *"Once COVID hit, they [customers] weren't coming downtown anymore…There's no one living there, there is no one working down there, so Monday through Friday was just awful. The weekends, because there are no theaters, the farmer's market wasn't up and active, there was no draw to bring anyone down."* (Polymath) *"I never really thought that a viral outbreak would be a reason that we closed, honestly. Yeah, I'm thinking fire, flooding, things like that."* (Golfer) *"Our cash situation was so good sitting at March 1st. On March 15th, sales went away so fast, nobody expected your cash is disappearing quickly."* (Mathematician)
	2nd Interview Oct – Early Nov, 2020	*"Really, what has hurt us the most is the government more than anything else… I'll do whatever it takes, but don't take my business away from me."* (Food Network) *"I don't see the same excitement it was when we opened [Big Shoulder] Vegan before COVID, so I believe because of COVID less people come to check the restaurant."* (Big Shoulder)

Table 4.2. (Continued)

Sensemaking Frame	Time	Opportunity, Threat, or Low-level Perceptions
Threat Frame	3rd Interview May – June, 2021	*"We have had a tremendous challenge in the new category or service that has been created because of COVID, which is curbside delivery…this curbside has created a monster."* (Special)
Low-level Sensemaking	1st Interview May – July, 2020	*"Once I get into carry-out, I was very happy because I don't have to do any dine-in service, I don't have to do any delivery service…and I don't have to worry about cleaning the tables, about serving the people…I'm happy. I hope doing this for three more months."* (Steady)
	2nd Interview Oct – Early Nov, 2020	*"All my employees got paid. I make some, I'm okay."* (Happy)
	3rd Interview May – June, 2021	*"We have been pretty remarkably okay. And I don't know if that's just luck."* (Unconventional)

interpreted the changes in the environment and assessed his organizational conditions to use the pandemic as a time to experiment. There were several restauranteurs in my study that interpreted environmental changes and organizational conditions by using opportunity sensemaking frames to innovate existing business models.

On the other hand, other restauranteurs interpreted similar external cues as a threat to their survival. Like Traveler, Golfer was primarily focused on a dine-in business model, and the majority of his food items did not travel well for to-go services. His businesses were in downtown areas where there were almost no customers, and no ability for diners to pull up in front of his restaurant. He thought there was no way to make money with a 50 percent capacity limit, but luckily, he had enough savings. Golfer interpreted similar environmental and organizational cues with a threat sensemaking frame, so he furloughed most of his employees and closed his restaurants for several months. Golfer stated that "I never really thought that a viral outbreak would be a reason that we closed, honestly. Yeah, I'm thinking fire, flooding, things like that." There were other restauranteurs that used threat sensemaking frames and had similar interpretations of the environment and organizational conditions that they faced.

Finally, a group of restauranteurs did not engage in significant sensemaking. For instance, before the pandemic, Steady provided a variety of services such as dine-in, to-go, and in-house delivery. When the pandemic began, he was pleased to eliminate his dine-in services, as he was close to retirement and did not want to work so hard. Steady stated that,

> Once I get into carry-out, I was very happy because I don't have to do any dine-in service, I don't have to do any delivery service…and I don't have to worry about cleaning the tables, about serving the people…I'm happy. I hope we keep doing this for three more months.

Since he had no interest in expanding his restaurants and sales were sufficient to keep the business running, he did not consider the pandemic a significant threat or business opportunity. A few other restaurant owners had similar experiences and interpretations.

Further, whereas some restauranteurs employed the same frame across all three periods, other restauranteurs' sensemaking frames changed over time from threat to opportunity, or opportunity to threat. For example, Traveler interpreted cues with an opportunity frame and perceived an opportunity to grow early in the pandemic because he was flush with cash and had ideas for expanding his business; he continued to interpret environmental changes and organizational conditions as an opportunity throughout my study period. Food Network, however, changed his sensemaking frame over the study period. Initially he was flush with cash from selling gift cards, but he still shut down all his dine-in focused restaurants, rather than pursue opportunities. As the pandemic dragged on and he saw more challenges along with rapidly depleting reserves, his threat frame intensified and he started taking actions to generate temporary income. However, in the last phase, Food Network appeared to have switched from a threat to an opportunity frame, discussing opportunities to open new restaurants and related businesses, and turning one of his temporary revenue generators into a permanent new revenue stream. In contrast, Big Shoulder initially employed an opportunity frame and interpreted cues (e.g., finding inexpensive ingredients, a new restaurant space, and having enough financial resources) as a growth opportunity, expanding his business early in the pandemic. However, he later switched to a threat frame due to labor shortages and difficulties managing multiple restaurants. Thus, restauranteurs' sensemaking frames can also vary over time, affecting their BMI actions.

BMI Decisions and Actions

Unsurprisingly, the restauranteurs' BMI-related decisions and actions varied depending on their sensemaking of the environmental and organizational cues. Overall, restauranteurs who employed an opportunity frame to interpret the pandemic and organizational conditions made more radical changes to their business models by significantly transforming their business concepts or actively investing resources to expand their businesses. Others who used a threat frame to interpret the cues and challenges modified part of their business models (e.g., sales channels, operations) to solve problems or waited for a while without engaging BMI. However, some restauranteurs were reluctant to make any changes to their business models. The following discusses the five primary patterns of BMI decisions and actions.

With an opportunity frame, some restauranteurs viewed external and organizational cues as opportunities to fundamentally rethink their business models, or explore new opportunities and make significant business model changes by *replacing or adding new business concepts*. For example, a group of restauranteurs realized that their existing dine-in focused business concepts did not fit with the pandemic and had to come up with new types of food and distribution modes, whereas others expanded into new lines of business they had not previously pursued. A second group of restauranteurs' BMI actions focused on *expanding the business's physical structure* by moving and increasing their restaurants' physical size and adding more core functions to their business models. These restaurateurs had fewer existential challenges—for example, they had menu items that worked well with the to-go business or did not solely rely on dine-in services. Thus, they could use current business concepts and leverage opportunities from environmental changes to move into larger locations or open new restaurants.

Two other BMI actions were primarily based on restauranteurs' threat frames and interpretations of the environment as threatening their business models. Some restauranteurs focused on *improving operational efficiency* by reducing costs/waste and making the most of existing resources. For example, they rearranged restaurant layouts, gave their staff new and distinct roles, reduced employee headcounts, and implemented systems to minimize food waste. Another group of restauranteurs focused on enhancing sales and revenues by *implementing temporary changes* to generate revenue that they discontinued as soon as conditions changed enough that they could revert to their pre-pandemic business models. For example, offering but then discontinuing family-style meals, to-go and delivery services. Thus, they attempted to diversify their offerings to generate revenues, but their efforts were short-lived.

Finally, restauranteurs who were *using the same old business model* did not actively engage in sensemaking and BMI. They were able to survive by more or less doing what they had always done, with only minimal tweaks to their practices during the pandemic's shutdown phase. Therefore, different BMI decisions and actions were taken based on restauranteurs' current business models and interpretations of cues with sensemaking (i.e., opportunity frame, threat frame, or low-level sensemaking).

Outcomes and Feedback

Because sensemaking is an ongoing process, we can identify how actions taken at one point in time become cues for subsequent bouts of sensemaking (Maitlis & Christianson, 2014; Weick 1988). In my study, restauranteurs' BMI decisions and actions affected their organizational outcomes such as financial resources, customers' reactions, and operational efficiency. This in turn was factored in with changes to the environment and other organizational conditions, leading to a new set of cues and a new sensemaking cycle. Therefore, the process of

changing business models is an ongoing process rather than a one-time action because an innovative action disrupts the status quo and creates additional cues, and looking at BMI cross-sectionally, at one point in time, may lead to misinterpreting the nature and degree of BMI.

First, BMI actions altered organization-environment interactions, creating new challenges and opportunities. For example, while some restauranteurs' initial BMI responses to environmental challenges were successful (e.g., generating better revenue, reducing costs), others' BMI actions such as adding new services and products caused unexpected business problems (e.g., food quality, managing orders, customers' complaints). Second, a new set of cues stimulated a new sensemaking process. Some restauranteurs interpreted the BMI actions and new organizational conditions as opportunities to pursue and developed their innovations further, while others highlighted organizational difficulties or limited improvements as outcomes of their BMI actions. Restauranteurs also recognized new cues from the environment, which constantly evolved during the study period. So, restauranteurs continued to make sense of the environmental and organizational cues in determining whether to engage in additional BMI actions, and what kinds of actions to take. Third, based on the new cues and interpretations, if restauranteurs took additional BMI actions, the actions created new conditions and cues—and sometimes frames—for the next round of sensemaking. Successful initial BMI actions can open new avenues for restauranteurs to expand their business models into a new concept or market, leading them to understand more cues of the new area and interpret them. Failed initial BMI actions pushed restauranteurs to reject or revise the changes while reviewing additional information from environmental and organizational conditions.

In this section, I discussed the BMI sensemaking process. In the next section, I further unpack the model (see Figure 4.1) by describing 17 restauranteurs' environmental and

organizational cues, sensemaking, BMI decisions and actions, and new challenges and opportunities as outcomes over time.

Five Patterns of Business Model Innovation

Based on Figure 4.1, across the 17 restauranteurs I identified five BMI patterns: (1) Replacing or adding new business concepts, (2) Expanding the business's physical structure, (3) Improving operational efficiency, (4) Implementing temporary changes, and (5) Using the same old business model. Each restauranteur's BMI actions and processes evolved differently depending on how the restauranteur made sense of the environmental and organizational cues over time. There is also variability in the timing of changes among restauranteurs in each pattern. A short summary of each pattern is followed by Table 4.3, which summarizes all patterns with restauranteurs' major BMI actions and processes during each phase of my study. I also included Appendices with more detailed information about each restauranteur's organizational conditions, sensemaking frames, and BMI actions in each phase of my study.

During the pandemic, Traveler, Big Shoulder, Rebel, and Food Network were primarily focused on replacing or adding new business concepts. Although each faced different organizational conditions (e.g., resource availability, locations, restaurant sizes, and loyal employees), they had similar dine-in focused business models, and their opportunity sensemaking frames led them to similar BMI actions of replacing or adding new business concepts. Yet, within this BMI pattern, some restauranteurs displayed different processes related to bringing on novel and significant changes. Traveler and Big Shoulder worked on replacing or adding new business concepts early in the pandemic because they recognized cues as opportunities earlier than other restauranteurs (i.e., Rebel and Food Network), and thus

Table 4.3. Major BMI Action Similarities and Differences During the Pandemic

Sense making	Patterns	Restaurants	Characteristics before the pandemic	1st Phase (March – July 2020)	2nd Phase (August – Early November 2020)	3rd Phase (Mid-November – June 2021)	BMI Process Differences
Opportunity frame	Replacing or adding new business concepts	Traveler	One restaurant, Dine-in focused (Italian)	Tested New Business concept	Changed operations	Planned expansion with a new concept	Early adopters: changing business concepts early
		Big Shoulder	One restaurant, Vegan Dine-in (Mediterranean)	Signed a lease for a new concept restaurant	Opened the new concept restaurant	Managed business	
		Rebel	One restaurant, Brunch-lunch focused (American)	Managed services (reducing and adding services)	Planned a new concept restaurant	Changed business concept	Late bloomers: changing business concepts later
		Food Network	Over 10 restaurants, Dine-in focused (American)	Closed restaurants	Added a new concept	Expanded multiple business concepts	
	Expanding the business's physical structure	Meditation	Two restaurants, Casual dining (Asian Fusion)	Relocated a restaurant to a larger space	Changed operations	Dropped plans	Prior commitments: pursuing a prior project
		Musician	Two fast service restaurants and catering (American)	Worked on opening a larger restaurant and sold a building	Changed operations and services	Opened the larger restaurant and closed the existing restaurant	
		Beaver Dam	Three stores without a drive-thru (Baked goods, Coffee)	Closed business and stopped projects	Restarted a project (Own coffee roasting)	Worked on opening a new store with a drive-thru	Forward commitments: postponing a prior plan
Threat frame	Improving operational efficiency	Family	One restaurant, Casual dining (American)	Changed operation	Stopped high-cost services	Further enhanced operation efficiency	Operational efficiency: making efficient operations
		Special	Two fast-food restaurants (American)	Changed operation	Further enhanced operational efficiency	Changed structure and layout of the building	
		Polymath	Three shops without a drive-thru (Baked goods, Coffee)	Reduced operation costs	Further reduced operation costs	Invested in operational efficiency	Cost efficiency: developing an efficient cost structure

Table 4.3. (Continued)

Sense making	Patterns	Restaurants	Characteristics before the pandemic	1st Phase (March – July 2020)	2nd Phase (August – Early November 2020)	3rd Phase (Mid-November – June 2021)	BMI Process Differences
Threat frame	Implementing temporary changes	Gladiator	Over 20 restaurants, High-quality food (American)	Offered new services	Added more services	Dropped most of the new services	Too large to manage: having service flexibility for all, except for menu changes
		Mathematician	Over 20 restaurants, Casual and fine dining (American, Italian)	Offered new services	Added catering business	Dropped most of the new services	
		Golfer	Two restaurants, Dine-in focused (American, Italian)	Closed business and dropped menu	Offered new services and menu	Dropped the new services and menu	Small enough to manage: having the ability to change services and menu when necessary
		Hospitality	One fine-dining restaurant, Dine-in focused (American)	Offered new services and menu	Changed menu and reduced operation costs	Dropped the new services and menu	
Low-level	Using the same old business model	Happy	One restaurant, Casual dining (Asian)	Offered new services	Removed services	Retired and sold business to three employees	None
		Steady	One restaurant, Casual dining (Asian)	Removed services	No changes	Offered old services	
		Unconventional	One restaurant, Online delivery and pop-up store (Baked goods)	Removed services	Added new services	No changes	

undertook bolder BMI actions earlier in the pandemic. As their organizational conditions changed, Food Network and Rebel undertook major changes a year after the pandemic. Restauranteurs Meditation, Musician, and Beaver Dam also employed an opportunity sensemaking frame; however, their main BMI action was expanding the business's physical structure, which is a different BMI action than those taken by the four restauranteurs who changed their business concepts. The differences in BMI actions are primarily due to these three restaurants' existing business model effectiveness, such as their well-developed services and food items for to-go business.

Restauranteurs who employed threat sensemaking frames pursued BMI actions focused on improving operational efficiency and/or implementing temporary changes. Family, Special, and Polymath focused on improving operational efficiency because they relied less on dine-in services as a primary revenue source, and their food items traveled well; these restauranteurs changed internal operations to enhance profitability. Family and Special focused on improving efficiency, while Polymath tried to reduce costs—the first two made enough sales and were even stronger without some existing services (i.e., dine-in, bake goods delivery), but Polymath's sales struggled due to some of his restaurants' downtown locations (i.e., few workers in downtown offices; no tourist traffic).

On the other hand, the business models of other restauranteurs, such as Gladiator, Mathematician, Golfer, and Hospitality, who also employed a threat sensemaking frame, relied mostly on dine-in services as their main revenue source, primarily focused on implementing temporary changes in sales channels to enhance revenue. Gladiator and Mathematician, for example, added new services such as curbside, online ordering, in-house and third-party delivery, and selling high quality raw meat and seafood, but did not change their menu items.

Golfer and Hospitality, on the other hand, provided to-go, curbside, and in-house delivery services, but they had to add or change menu items because their food did not travel well.

The final pattern includes Happy, Steady, and Unconventional. They did not actively engage in sensemaking (i.e., low-level sensemaking), leading them to continue using the same business models with minor changes. Thus, I found that restauranteurs' sensemaking frames of environmental and organizational cues led them to undertake different BMI actions and processes. In the next section, I will provide a detailed look at how and why restauranteur interpretations led them to different BMI actions across each phase of the pandemic.

Making Sense through an Opportunity Frame

I have identified two distinct actions (i.e., *replacing or adding new business concepts* and *expanding the business's physical structure*) taken by restauranteurs who employed an opportunity sensemaking frame to interpret their environmental and organizational cues, which led to substantial changes in their BMIs.

1) Replacing or Adding New Business Concepts

Even in a non-crisis situation, completely changing existing business concepts or initiating a new concept with no prior experience can be extremely difficult. Because radical business concept changes may necessitate tremendous effort in establishing new routines (Nelson & Winter, 1982; Wiklund, Baker, & Shepherd, 2010), restauranteurs may re-initiate the "liabilities of newness" (Amburgey, Kelley & Barnett, 1993), that can threaten organizational survival (Stinchcombe, 1965). However, during the pandemic, I found four restauranteurs (i.e., Traveler, Big Shoulder, Rebel, and Food Network) who significantly changed their business concepts or opened new restaurants with a different concept. These restauranteurs did not move in lockstep with each other over the 13 months of my data collection. Instead, their processes

linked to more radical BMI changes portray a clear connection between their organizational circumstances and prior business models, but with some restauranteurs viewing the pandemic consistently through an opportunity frame, while others changing their frames over the study period. Figure 4.2 temporally displays the relative degree of change in each restauranteur's BMI over time, and when the changes occurred in tandem with their interpretations of environmental and organizational conditions evolved.

All four restauranteurs operated dine-in focused establishments pre-pandemic. One restauranteur—the celebrity chef Food Network—operated multiple restaurants in different states; the others all operated single locations. Traveler and Rebel made significant changes to their restaurants' business concepts, while Big Shoulder and Food Network opened new restaurants with new business concepts, and Food Network also pursued a new revenue option for selling prepared foods. However, as Figure 4.2 illustrates, two restauranteurs (Traveler and Big Shoulder) made significant changes to their business models early on, while the other two restauranteurs (Food Network and Rebel) delayed responding as their organizational and environmental conditions continued to evolve.

Early Adopters: Traveler and Big Shoulders. Before the pandemic, Traveler had been planning to grow his business and he had worked on developing different business models before the pandemic (see Appendix 1). Since his business was primarily focused on dine-in services and was located near downtown, he wanted to open a new concept business (e.g., offering dine-in but also to-go friendly Italian food) in a different location. Because his dine-in-focused business model would not work with pandemic restrictions and his current food style would not travel well as to-go, when the government imposed restricting on in-restaurant dining at the beginning

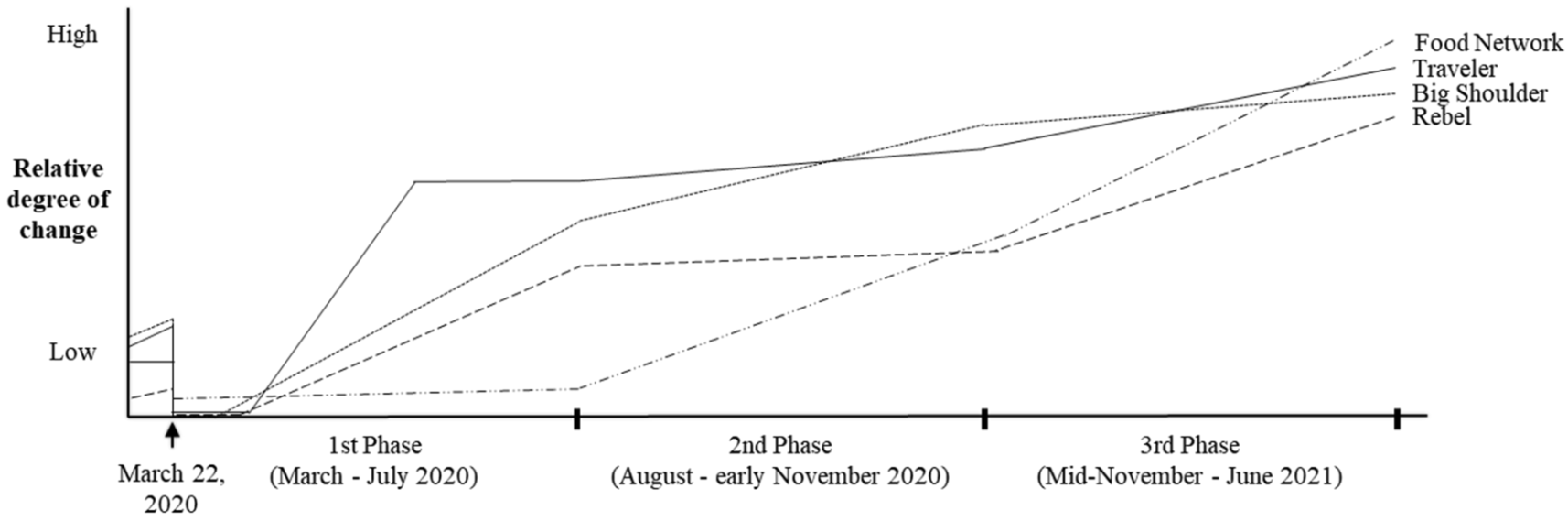


Figure 4.2. BMI Trajectories in Replacing or Adding New Business Concepts Pattern

of the pandemic he decided to shut the restaurant. During the first three days of his forced break, Traveler did not do anything except have meals with his family. After the fourth day of being closed, he rolled up his sleeves and started to consider changes to his business models, menus, recipes, and sales channels that he had worked on before the pandemic. Everything was almost ready to launch the new business model. He went to a different state with a manager to learn the new food style a year and half ago; had purchased kitchen appliances; and set up a kitchen for the food style. He just had not did not started it because the new model and food style were significantly different from the existing business model, which was doing quite well. However, Traveler thought a different food style could work well during the COVID shutdown, testing a new model and concept very early in the pandemic, he said,

> Now that less people are eating in, we went from 10 percent take-out to switching our business model to a new style of [food] … that traveled much better in a box …, which was very difficult for us to transition to because we had to use all new equipment, new staff, new recipes, new layouts, new ordering, and a new point-of-sale set-up.

Traveler believed that the pandemic provided opportunities to develop a new business concept to solve environmental challenges and to grow the restaurant. He stated,

> We had the information [about a new business concept], we already spent some money on it, and we just chose to take the time to do it. And since we thought the concept might work in the future, we just figured what a good time to test it out because people are really patient right now.

Another restauranteur, Big Shoulder also wanted to expand his business with a new concept before the pandemic (see Appendix 2). His sales dropped because his company was in a downtown area (i.e., few workers in downtown offices; no tourist traffic), and there were no

events that drew people to the area. However, Big Shoulder explained that he had enough savings and had received generous government financial support, so he did not worry about survival and instead he could search for appealing opportunities. Using his financial resources, he was able to obtain high-quality ingredients at a lower cost because vendors were struggling to find buyers for their products. He also found that a struggling restaurant adjacent to his store was going out of business. Big Shoulder had his eye on this spot and had considered opening a new concept and new location before the pandemic. During the first phase, Big Shoulder decided to take over the failed restaurant's space and implement his new concept. He described his side-by-side concept,

> One side with vegan and the other side with meat. That's it. I think it's a nice concept. Two months after I opened [Big Shoulder] Vegan, I know that the Vietnamese restaurant [next door] was struggling... I put an offer eight months ago, and she didn't accept it. In the end, I got it. It was in my head all the time.

He thought that the pandemic provided an opportunity to grow his business: "I think COVID helped me to take it (the new restaurant location) over. The feel-good thing that happened since COVID."

Both Traveler and Big Shoulder had enough knowledge of the new concepts and available financial resources to see the pandemic as a time of business growth, investing quickly in their new business concepts. Thus, as soon as they interpreted multiple cues as opportunities to grow their restaurants, they immediately pursued new concepts they had been thinking about.

Sensemaking is an ongoing process (Gephart et al., 2010; Weick et al., 2005), so prior sensemaking and BMI actions may lead restauranteurs to another bout of sensemaking, particularly if there is another environmental or organizational change. After my first interview,

Traveler's new food style and business concept drew more customers, resulting in a 25 percent increase in sales over the previous year. He said that "keep in mind, that growth is now coming with a 50 percent capacity restriction." Although restrictions remained the same (e.g., 50 percent capacity and mask mandating restrictions), he felt people became more comfortable with going out to eat. His new business concept also allowed him to partner with local breweries by delivering their food, as their food now travels well.

Thus, at the time of my second interview, Traveler still used an opportunity sensemaking frame to see environmental and organizational conditions as an opportunity for his business. He focused on mainly managing the new concept, which touched all aspects of the business including hiring employees, developing new systems for retaining employees, modifying the restaurant's layout, and adding new operating systems. Although Traveler returned to offering his traditional food when inside dining returned, he again modified his to-go offering, which was distinct from his dine-in cuisine. Also, he was still considering launching his initial plan of opening a separate restaurant with a new concept to expand his business, working on relocating a tenant who occupied another part of his building (which Traveler owned).

Big Shoulder opened his new restaurant after the first interview. However, when we next spoke, he said managing the two restaurants was challenging, because he kept their operations, employees, and food preparations separate, even though the restaurants were next to each other. Finding experienced employees and training them for both restaurants was a significant challenge, which he continued to face even at the time of our third interview. He explained, "It's difficult to find people that have experience and they're willing to work and make the effort to the place to make it succeed... For me, the most difficult thing is manpower, just manpower." Big Shoulder worked more hours to manage the two restaurants, but he was still interested in opening

additional restaurants with new concepts and locations. His network of friends and other business owners were offering him possible business locations. For instance, a hotel owner who is a regular customer of the restaurant was asking Big Shoulder to open the same vegan restaurant in his hotel in a different city. Thus, in the second phase, both restauranteurs (Traveler and Big Shoulder) still interpreted the pandemic as an opportunity to develop new business concepts and grow their businesses.

Before the last interview, various government restrictions (e.g., the 50 percent capacity rule and mask mandate) were removed, and businesses were filling empty stores and fully opening dining areas. However, some restauranteurs encountered difficulties with human resources (i.e., training, retaining, hiring) and the cost of ingredients and materials (i.e., inflation), particularly during my third round of interviews. Hiring employees, inflation, and managing multiple businesses posed substantial operating difficulties for Big Shoulder, in particular. Despite seeing numerous potential locations to open vegan restaurants, Big Shoulder decided not to expand the business further, because managing two businesses, making them profitable, and hiring employees were major issues he had not yet resolved. He observed,

> A lot of people from [City A], from [City B], from [City C] are begging me to come and open the same concept. They have a spot for me inside of one of the hotels over there, even in [City D]; and I said, 'I don't think that I'm going to go there because I can't. I am not 21 years old. I'm tired; and to build a system like this through control, like five or six locations like this, it's going to give me a big headache. Maybe if I'm going to find somebody with a vision that's going to help me and going to hire the manpower and do everything, maybe it's a good idea. But now, I don't see any way that I could do it.

Overall, Big Shoulder's countenance was markedly more negative than during our previous interviews, and during our third interview, it appeared his sensemaking frame had shifted toward more of a threat frame, and he responded to his challenges by reducing business hours and continuously hiring employees due to a staffing shortage. Indeed, following our last interview he closed his new location and combined both menus in his original location, although he kept separate knives, cooking implements and oil for the meat and vegan dishes in the kitchen.

While managing the new business concept and its success, Traveler already increased employees' salaries, so he was able to hire ten more staff compared to before the pandemic. Also, he created a "fun project" with employees by letting them design the restaurant's merchandise (e.g., t-shirts and hats), which helped to create a good culture for business and provide a sense of value for staff. Thus, he had no staffing issues, and his sales were even stronger after all the restrictions were removed. These environmental and organizational cues allowed him to develop a new concept for his second restaurant and test it by offering pop-up dinners. Traveler said,

> We have decided on the concept, yes. We just haven't gone public with it. This isn't public information; and so these pop-up dinners that we're having will tease it, will tease the concept. People may make assumptions based off of that, but we won't actually release that until we have more of a firm timeline with construction and design … so there are a lot of moving pieces.

Thus, Traveler still saw opportunities, and he kept pursuing opening a new restaurant with a new business concept.

Late Bloomers: Food Network and Rebel. Unlike the fast movers in the early adopter group, the other two restauranteurs—Food Network and Rebel—did not change their concepts until a year after the pandemic began. COVID restrictions created challenges for Food Network's restaurant because his business model was mainly focused on dine-in services (see Appendix 3). Switching to to-go services was not ideal for his business because the service required different operations that did not fit with his existing business model and food style. He noted, *"*Switching to takeout just didn't seem to be right because there seemed to be something new you had to do, and it was just so taxing on the team; so, we just focused on something we knew we could execute and we could help the community."

Instead of changing business models to operate his multiple restaurants, he initially employed a threat frame; furloughed most of his employees except 52 managers; used the reserves from gift card sales to sustain his business financially; and used other financial resources (e.g., government financial support) to maintain the status quo and ensure survival until he could open his physical locations back up at 50 percent. Also, Food Network donated food to support the community and did not identify business opportunities to pursue in the early pandemic, he stated,

> Well, when we first shut down, …we brought all of our product back to our corporate office, and first concentrated on taking care of people in our industry. We switched over to giving away meals, lunch and dinner, with all the product that we had from all of our restaurants. We did community lunches, community dinners for the first eight weeks that we were shut down... I said, "You know, the best thing to do in a situation like this is figure out a way to take care of people that are worse off than we are," so we did that…

> That's what we did all the way through about, well, actually May 1st, when we opened back up.

Rebel also experienced an initial significant decrease in sales during the shut-down phase of COVID (see Appendix 4). Rebel's restaurant was located in a neighborhood shopping center without a lot of other restaurants or businesses around. Even before the pandemic, Rebel recognized problems with his dine-in and brunch-lunch focused business model, and felt a dinner-and-bar-focused business model would be more effective and profitable. Rebel considered this new concept for a couple of years prior to the pandemic, and he had even begun renovating his restaurant to make an eventual shift to dinner-and-bar service easier. He saw the pandemic as a time of opportunity but lacked the resources, especially financial resources, to pursue it early in the pandemic. He was also very connected to a network of young restauranteurs in the city who had worked at a resort together; this network provided a sounding board during the pandemic. So, in the initial phase of the pandemic, Rebel had a mix of positive and negative cues from its organization: a poor location, a cuisine that did not translate well to to-go, a network of advice, an idea for a new business before the pandemic, and weak financials. He stated,

> My thought process, everyone in the neighborhood and everyone I've talked to, is you've got to do dinner. You've got to do dinner. You've got to do dinner. That was the main reason for the renovation was to have, one, a restaurant that we could clean much easier because it was an older building and, two, it was more presentable and [we could] take care of the sound.

Rebel did not initially begin to implement the new ideas; his sensemaking frame was a threat frame, and he focused on his weak financial resources and poor location along with the

pandemic environmental challenges. Thus, rather than changing the entire concept, he initially worked on minor changes such as removing services (e.g., breakfast, bakery) to manage costs and adding new services (e.g., curbside pickup, family-style meals, selling raw meat) to increase sales. In addition, he got a second job representing a meat distributor to maintain his income and health benefits;

> I also have a second job. I work for a protein distributor as their [city] rep part time. That's one I just needed something else to do, obviously. To say that, that does not provide a ton of income; but they were kind enough to give me full benefits.

The longer the COVID-19 pandemic lasted, the more difficult it was for restaurant owners to keep their doors open with existing business models. As the pandemic dragged on, both Food Network and Rebel discussed their fear of losing their businesses, even after they re-opened at 50 percent capacity. Environmental and organizational cues continued to send more negative signals about potential threats to their businesses—capacity restrictions, increased COVID-19 cases over the summer, the diminished profits, and depleted financial resources. It became clear by the second interview that these two restauranteurs were considering more radical changes. During my second round of interviews, Rebel said,

> It's very obvious we can't continue to do what we're doing and be successful. I want to keep doing this for the most part, but I'm not going to do it to the point where I'll deal with a bankruptcy lawyer and figure that out before I'll just deplete everything.

Food Network expressed his difficulties when the second rise in COVID cases hit during July of 2020:

> Revenues drop off and everybody is like, 'What the heck is going on?' and it's like, 'No, we're going to be great. We're going to be great.' And then I go back to my office and

> curl up and almost cry and it's [the virus] never going to go away ... I'm like, 'Man, this ship could sink. I mean, I've used up all my reserved cash, like this is getting real here, you know?

Although both restauranteurs took limited actions at the onset of the pandemic, they eventually began making more significant changes to their business models, especially expanding sales channels by integrating new services. Rebel described adding services (e.g., a private chef service—cooking at customers' houses—and online orders) that were new and began actively searching for the financial resources to change his business concept to a dinner-and-bar format. During the second phase, Rebel wanted to change his business, even if it meant failing. He explained,

> I could sell the business now and clear my debt almost just from an asset standpoint.… but I'm not willing to go down without a fight. It's one of those things, if we make this change and put a bar in, quite frankly that just increases my value of my business and if push comes to shove, … I have no idea, my wife does [a farm], so I guess I could shovel manure for the time being. She's always looking for help.

With his kitchens up and running, but with excess capacity, low financial resources, but capable staffs, Food Network began employing a "ghost kitchen" concept[2] and selling Mexican food via delivery and to-go services, and through neighborhood "pop up" stands. Because of the prolonged organizational challenges during the pandemic, both Rebel and Food Network saw the need to adapt, and they engaged in what we describe elsewhere as largely "temporary" innovations, but with some surprising results.

[2] Ghost kitchens are restaurants that exclusively serve delivery meals and have no physical storefronts or dining rooms (Cai, Leung, & Chi, 2022).

My third round of interviews revealed that both restauranteurs were employing new business concepts a year after the COVID-19 started, as both their environmental and organizational cues had changed (e.g., lifted restrictions, vaccines became available, and increased sales), as had their sensemaking frames. Externally, COVID restrictions were lifted, so dining rooms could seat at 100 percent capacity and there were no indoor mask mandates. Also, older and regular customers began to visit more often for dine-in services once vaccines became available. So, they began to make more sales and see the situation as returning to normal. Also, subsequent rounds of the Paycheck Protection Program (PPP)[3] and other grants helped Rebel cover the construction expenses for adding a bar. Rebel considered these cues as an opportunity. He had renovated his restaurant, added a bar and removed the underperforming bakery, and was starting to offer a dinner service while still maintaining his brunch-lunch service. He stated,

> The last PPP we got, which was just over $100,000, it was huge. I was starting to have another freak-out, to be honest. I've got some other applications in for grants right now too. I just was sitting there thinking, 'I don't know when the catering business is going to come back. Being a father is very important; so short story is if I can't generate more revenue, then I can't stay at home.' I just took a gamble [changing the concept].

Food Network also observed positive environmental and organizational changes for his business. In addition to the other changes, he found a significant increase in demand in the hospitality industry in the city where most of his restaurants were located. Food Network explained, "Everybody is saying, 'In our industry we feel like it's going to be the roaring 20s for about the next 18 months, so we want to take full advantage of that." Food Network also found a

[3] The first round of PPP loans only allowed business owners to use the money for employee compensation; subsequent rounds allowed them to use the money for other expenses such as rent and capital improvements.

significant redevelopment project in a district near his existing restaurants, highlighting the role of partners as a key part of his BMI change. He said,

> There is a group called [X], and they put about $200,000,000 into the redevelopment of the district. They are basically spending $1,000,000 a month on marketing, and we get to take advantage of it. We are not actually in the district there is marketing for, but the three new places I am doing are in the actual district that they redeveloped. I've been in [the area] for 21 years, and I didn't want anyone to take advantage of it without me being in the middle of it; so we are going for it.

Thus, in the third phase, he decided to enter various businesses other than restaurants and introduce to the market his projects that he had worked on during the pandemic. The new businesses Food Network described included a boutique hotel, a live-music venue attached to a restaurant, new restaurants with different cuisines, and developing prepared food items to sell through a retail business with whom he had a relationship. He was able to expand businesses and concepts by leveraging his celebrity chef reputation and financial resources, as well as converting many restaurant leases to straight percentage rent (i.e., paying rent as a percentage of sales) rather than ground rent (i.e., paying a fixed amount each month).

In addition, Food Network's most interesting BMI resulted from his "temporary" effort to make use of his excess kitchen capacity. Although his "ghost kitchen" business helped generate revenues during the middle phase of my study, he had to pull back from this because all his restaurants were operating at full capacity and no kitchen space was available for the 'ghost kitchen' services. Instead of "exorcising" the ghost kitchen from his business, he restructured the operations—from his staff working on all aspects of the process (i.e., cooking to selling) to only

preparing food items and selling them through an online marketplace (Goldbelly), while negotiating to all sell them through his retail partner.

To summarize, all four restauranteurs faced significant challenges in their existing business models and implemented significant business model innovations. They replaced or added new business concepts based on the restauranteurs' sensemaking of changing environmental and organizational cues, and in some cases shifts in their sensemaking frames from threats to opportunities, or vice versa. Traveler and Big Shoulder shifted their business models early on because they used opportunity sensemaking frames early in the pandemic and had sufficient resources (e.g., financial resources, physical spaces, knowledges about a new business concept) to carry out the BMI action. In contrast, Rebel and Food Network changed their business models later in the pandemic as compared to Traveler and Big Shoulder. These restauranteurs used opportunity sensemaking frames or obtained resources (e.g., financial resources, networks for getting business support, knowledges about a new business concept) later in the pandemic. In contrast, Big Shoulder's sensemaking frame shifted to a threat frame, and he reduced his ambitions as he focused on dealing with the labor challenges he (and many others) faced. As a result, restaurant owners who experienced significant challenges with their existing business models but had sufficient resources and interpreted cues as opportunities ended up replacing or adding new business concepts to their operations.

2) Expanding the Business's Physical Structure

Restauranteurs in the first BMI pattern saw changing concepts as opportunities. Restauranteurs in this pattern (i.e., Meditation, Musician, and Beaver Dam) pursued growth opportunities by expanding their businesses' physical spaces and structures while essentially maintaining their existing business practices (e.g., to-go, delivery, and dine-in) with only minor

changes to their business models. These restauranteurs all employed an opportunity sensemaking frame and believed that changes due to COVID-19 allowed them to expand their business.

In my interviews, these restauranteurs' emphasized the positive cues of growth opportunities resulting from environmental changes. While maintaining their pre-COVID business concepts, these restauranteurs expanded restaurant spaces and added new physical structures for increased sales and improved operations. For instance, Beaver Dam added coffee roasting in a separate warehouse because he planned to have it before the pandemic, found a good lease deal due to COVID, possessed enough financial resources, and had an employee who knew how to manage the operation. He also opened a new store with a drive-thru lane after being approached by well-known investors and entrepreneurs in the city. Beaver Dam realized the importance of drive-thru service even more during the pandemic, given that his existing locations lacked them. Meditation and Musician closed old restaurant locations and relocated to larger spaces to provide more services (e.g., outdoor dining, a bar) because they planned to relocate for business growth prior to the pandemic, had small restaurants, and COVID occupancy restrictions created challenges to generate enough revenues. Thus, these restauranteurs used an opportunity sensemaking frame to expand the business's physical structure. Figure 4.3 shows their BMI evolution over time.

As the figure illustrates, although all three firms increased their "footprint" through new spaces and new activities, their processes were different: Meditation and Musician had already committed to these expansion actions before the pandemic and accelerated the process, hence their faster start reflected in the graphic below. In contrast, Beaver Dam committed to his growth after the pandemic was underway, and thus had a delay before his BMIs occurred.

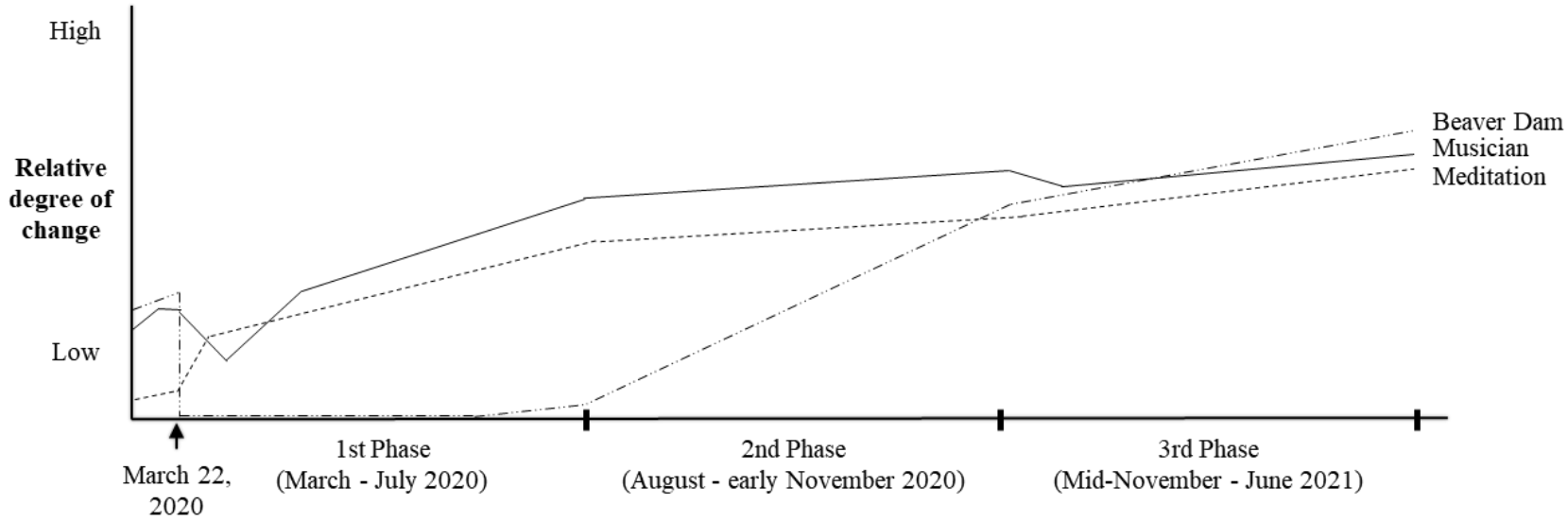


Figure 4.3. BMI Trajectories in the Expanding the Business's Physical Structure Pattern

Prior Commitment: Meditation and Musician. Meditation[4] and Musician had already signed leases for new locations before the pandemic; this was an important organizational cue that influenced their interpretation and BMI actions (see Appendices 5 and 6). Both restauranteurs mentioned in the first interview that they were working on opening new restaurants because larger spaces would allow them to do more business. Although they considered expanding their physical locations to be an opportunity, each restaurateur had different cues based on the environmental changes and organizational challenges, which led to different sensemaking processes.

Meditation had worked on opening a new restaurant location before the pandemic and considered transitioning one of their existing restaurant concepts to a to-go focused business—the current location was small, and it had a big window which they used to service to-go orders when indoor dining was shut down. Following the pandemic and the local government's sudden dine-in restrictions, challenges in sales, operations, and relocating a new restaurant arose. Meditation's restaurants were located on downtown side street where there were few customers early in the pandemic, and they lost sales when one of the area's major events was canceled, which was a huge economic driver for downtown restauranteurs. Moving to a new location was also slowed by sales challenges caused by major event cancellations near the restaurant. According to Meditation,

> COVID's main impact on that moving was delaying a little bit ... It's kind of a complex situation for us. We lost [a major event], which is a huge economic driver for downtown and downtown restaurants. That was something we were relying on a little bit to push us

[4] Meditation owned a second restaurant with larger indoor and outdoor spaces, and also operated an event space. I am not focusing on these businesses for parsimony, and because they didn't experience the same significant changes as the focal restaurant's operations.

> financially into that move …We were still going to pursue those plans to move because despite everything it was our only way to grow … and try to put a positive spin on it when we opened. At least our new spot has a really large outdoor space, which is something that's really valuable right now that [our current location] doesn't really have.

Meditation only offered to-go services during the shut-down phase, but the business generated enough profit because their overhead was extremely low. They were unable to open their doors when the 50 percent capacity restriction was implemented, however, because the restaurant's space was too small, with limited indoor and outdoor seating. For example, if they followed the six feet of social distancing guideline, only one or two tables could be served in the outdoor seating area, and only about three tables could be seated indoors. Providing enough social distancing and generating profits were almost impossible. They said, "we really can't reopen [the old location] unless we're at 100 percent capacity because … it's really small." Thus, Meditation considered moving to a new location with larger indoor, outdoor, and kitchen space as an opportunity, and keeping the current small restaurant for to-go business as another business opportunity. They stated,

> We made plans back in December [2019] to move [the restaurant's] current location, which we're still on track to do. We should be opening the new location in a couple of weeks. And then we plan to pivot the current location into a different concept, something more like a fast to-go concept.

Musician also signed a lease for a new restaurant space on March 10th, 2020. He stated, "In fact, we were in the process of trying to grow the business. I was about to sign a lease for a fourth location." The process was slowed down because of organizational challenges such as managing multiple locations (i.e., one downtown and one suburban) and businesses (i.e., a

catering business). Musician's fast-service business concept worked well at the downtown restaurant, which had a large parking lot surrounding it. However, it was difficult to operate and offer to-go and curbside services at the suburban restaurant because the location was relatively far from the city and difficult for customers to access.

Moreover, the catering business was challenged due to the complete cessation of social events, eventually leading Music to sell the catering building, although he intended to continue catering out of his new, larger location once the business returned. The catering space thus was a negative organizational condition that affected his BMI actions. In addition to closing the catering business, Music temporarily closed the suburban restaurant a few weeks into the pandemic. Managing multiple businesses and different locations created various challenges for him, so he focused on expanding the downtown restaurant's services, including offering pre-cooked meals using a vacuum sealer (from the catering business), providing additional services (e.g., online ordering and third-party delivery) and selling food to his friends' bars once in-door service was restored. However, his primary focus was on the opportunities the new restaurant location offered because the new restaurant could allow him to accommodate both catering and expanded restaurant services. Thus, Musician pushed to open a new restaurant and stated that,

> My mind was, "Okay, maybe we just need another location with a really big kitchen." There's ordering and all that stuff. When you have a restaurant, there's constantly food there so if somebody calls last minute, I can do it. At the catering kitchen, I made all my orders for the week's stuff. If somebody calls on a Thursday and wants something on a Friday, … all of my food is spoken for, you know …. Now I think the best model is to have a restaurant with a kitchen large enough to handle it. So my hope is we do get [the

> new location] restaurant open. The kitchen is big enough and when the catering comes back, I got the space.

These BMI decisions early in the pandemic influenced their future BMI actions. The decision to have larger spaces and relocate restaurants presented new challenges and opportunities later. Meditation moved to the new location, and when COVID restrictions were changed to a 50 percent capacity restriction, their sales were strong and even better than they were doing before the pandemic at the old restaurant. Having a large outdoor and indoor space made customers more comfortable dining out. A larger kitchen space also allowed cooks to offer a variety of menu items, as well as enough space to mount a large broiler on the wall and a charbroil grill in the kitchen's corner. However, the new space required additional changes to the restaurants' operations and layout. Meditation explained,

> Well, one big change is [that] we moved [one restaurant] into a bigger space into [a new location], which was a blessing because we gained a patio that seats 50+ people [outside only]. The old space pre-COVID inside and out only sat 48, so we had a net gain of seats, even with restricted seating; so that's helped.

During our second interview, the owners also noted,

> Moving into that building …. [The new restaurant] probably wasn't routinely maintained as much as it should have been, and it is an older building; so it comes with a host of issues that you get with older buildings …. We just didn't think that they would all bear fruit around the same time. Then we also had a positive COVID person in the restaurant that came into contact with one other employee, so it took them out for two weeks right in the middle of everything. I think it was like five COVID tests, and I had to tell these two guys to stay home for two weeks. Exhaust fans go out. A host of plumbing issues.

> Exhaust fans get fixed, fans go out again. So, it was a lot. I think I cried more just from sheer stress and exhaustion in August and the beginning of September than I ever have in my entire life, probably since I was maybe four.

While Meditation mentioned at this time that they still wanted to open a to-go concept business at the old location, they eventually dropped this plan. In the last interview, environmental and organizational cues were no longer interpreted as opportunities for Meditation, but rather as threats they needed to address. At this point their actions were focused on managing their businesses and revising business models rather than innovating them further; since our second interview they had added and changed services (e.g., third party delivery, integration of the other business, menu changes), remodeled restaurants (e.g., layout of dining area, new equipment, and kitchen space), and redesigned employees' pay and benefits. Therefore, Meditation said,

> We finally got overwhelmed enough, and there was enough going on; and we saw that the next year would still be challenging enough that we just personally didn't have the bandwidth for it. We decided maybe not to do anything else right now; so we just had to focus on the things that we did have.

In the second phase, Musician's previous BMI action created new cues that can be interpreted as challenges and opportunities. As more employees returned to work at downtown firms and local organizations held events, customers began to request catering services from his business. However, catering was difficult because he lacked dedicated catering space (he had sold the catering building) and furloughed catering employees. Thus, Musician changed catering buffets to providing boxed meals for customers' events. He said,

> I think we talked about how it really decimated my catering. Spring and fall are my two biggest seasons for catering. That is where I've lost the most revenue, but I am still doing some catering. We're doing some weddings. I've picked up a lot of corporate box lunches, something we had never done in the past. My corporate box lunches, 200 or 150 individually packed lunches that we drop off on a table. We don't see anybody.

Unlike Meditation, Musician waited to open a new restaurant until after the winter of 2021, because he reasoned that winter is generally a slow season for the restaurant industry. Although he interpreted opening a new restaurant as a promising opportunity, the timing was interpreted as a threat. Thus, while he was slowed down working on opening the restaurant, he used the time to plan new services and adapt the restaurant's layout based on his COVID experiences (e.g., a drive-thru lane, a to-go business-friendly layout, a separate bar menu, and a larger outdoor dining area).

In my last interview, Musician discussed organizational challenges such as the new location and labor shortages. Opening the large restaurant required more employees to operate the business, and this was the first time he had offered sit-down service at tables rather than fast casual counter service. Although he held a job fair at his new restaurant, advertised in the local news media, and spent eight hours waiting for potential employees outside, he only ended up hiring three people. "The job fair itself was a bit of a disaster," he said, and finding employees was difficult for many restauranteurs. At the same time, the suburban restaurant was having difficulty hiring, was not making enough money, and he was having disagreements with the landlord about renovating the restaurant.

Given these challenges, Musician shifted from an opportunity to a threat sensemaking frame. He decided to close the suburban restaurant and relocate employees from the restaurant to

the new location. He postponed or canceled previously planned services for the new restaurant and decided to forego putting in an outdoor eating area due to the overwhelming amount of work required to manage the new restaurant's operations, especially with limited employees. Nevertheless, overall, Musician interpreted cues during the pandemic as providing opportunities and positive reasons to make these changes:

> You know in some ways, at least for my company, the pandemic kind of helped us in some weird ways. We knew we were wanting to get out of [the suburban location], and we knew we wanted to come to [new location]; but it just forced our hand and showed us what was important to us, gave us a reason to get out of that. I don't know if it would have happened as quickly if it hadn't been for the pandemic. It really streamlined us.

Therefore, these restauranteurs' prior commitments and endeavors became opportunities to pursue during the pandemic to grow and evolve their existing business models.

Forward Commitment: Beaver Dam. Unlike Meditation and Musician, who acted on their growth plans early in the pandemic, Beaver Dam stopped planned growth (e.g., opening a new store and roasting coffee) early on because he experienced a decrease in sales early in March 2020 (see Appendix 7). Right after indoor dining was shut down Beaver Dam decided to completely close all his restaurants, even though their coffee and baked goods could be objectively viewed as suitable for to-go and delivery services. He undertook these actions because he had enough financial resources available from his savings and government programs—i.e., PPP and EIDL, his brother was his business partner, and also supported the temporary shutdown to ride out the pandemic, which some assumed would be over soon. He explained,

> We wanted a clean break, we just wanted a clean closure and clean opening; and I didn't want to play around with … half of our services or curbside, to-go, or anything like that. The businesses that needed to do that, of course, I don't blame them one bit, the businesses that really needed to keep some cash flow coming in; but I knew we were in a financial position to not have to do that.

After the local government lifted the shutdown order on May 1st, 2020, all the Beaver Dam restaurants were reopened at 50 percent capacity with new services (e.g., third-party delivery, dollar menu promotions) and minor operational changes. Beaver Dam considered proceeding with his growth plan after reopening the restaurants because sales were strong, and challenges were manageable. Thus, he slowly changed his frame from threat to opportunity.

During my second interview, Beaver Dam stated that the pandemic created an opportunity for growth:

> If a business is healthy and is willing to really look for growth opportunities right now, I think now is the time to grow, at least for us. It's amazing what's out there right now…. This is a little pessimistic way of viewing it, but it's kind of a transfer of assets and resources from those who are fearful and conservative and closing down to those who are aggressive and growing and hopeful about the future. That's the way it seems to me.

Beaver Dam focused on positive environmental cues—low interest rates, good leasing opportunities, and ingredient deals. Also, his restaurants were a roaring success—his sales were soaring, and he was breaking records almost monthly, especially since some other coffee shops had been less aggressive in reopening. He was could not offer a reason for the great sales, he said, "I'm really, I've been trying to figure out what has been going on." After finding low-interest financing from a bank, an available warehouse lease, and an employee who could

manage roasting coffee and wholesale activities, he decided to roast his company's own coffee beans to expand the business and reduce the cost of his retail coffee products.

In the last interview, when no restrictions were in place, Beaver Dam was performing extremely well in sales. He stated, "Yeah, and we set another record in April and we're on track to set another record in May." Also, the new addition of warehousing provided positive cues, and Beaver Dam believed that roasting the restaurant's own coffee helped reduce costs for better margins and the ability to offer a subscription model. Despite challenges in managing the coffee-roasting business, he gave the employee in charge enough time and space to ramp up the business. He also signed a contract for the first drive-thru coffee shop in partnership with well-known local entrepreneurs and investors. Instead of paying rent on the retail store, he paid a percentage of revenue to the investors/partners. He said, "It didn't really have anything to do with the pandemic; it was just the right guys approaching us at the right time and making the right offer [laughter], a great offer." Thinking the deal was very positive because the partners handled very high construction costs that emerged during the pandemic, he added,

> And thank God I don't have to worry about that right now because of those outside partners who came in for the fourth store, they're handling it. I don't even want to know what they spent on that building; it's just … construction costs are just outrageous.

Thus, the COVID-19 environment aligned well with the owner's original plans of expanding the size and space of the restaurant during the pandemic.

To summarize, while existing business models served these three restauranteurs well during the pandemic, they were all actively engaged in business model innovation. Expanding the businesses' physical structures was based on the restauranteurs' interpretations of changing environmental and organizational cues, as well as a shift in their sensemaking frames from

threats to opportunities or vice versa. Because Meditation and Musician interpreted cues as opportunities early in the pandemic, they continued to pursue their prior growth plans. Beaver Dam, on the other hand, engaged in the BMI action later on as he used an opportunity sensemaking frame later in the pandemic. All these restauranteurs also had sufficient resources to engage in the BMI actions. Thus, I found that restauranteurs who experienced relatively low challenges with their existing business models; had sufficient resources (e.g., financial, employees, networks); and interpreted cues as opportunities ended up expanding the business's physical structure to their operations.

Making Sense through a Threat Frame

I have also identified two distinct actions (i.e., *improving operational efficiency* and *implementing temporary changes*) taken by restauranteurs who perceived their environment and organizational cues and used a threat sensemaking frame to take BMI actions. Although restauranteurs' environmental cues were similar, their organizational cues differed, so their sensemaking frames and BMI actions differed from those of other restauranteurs who interpreted their cues as opportunities. I discuss these restauranteurs' cues, sensemaking, and BMI actions in more detail below.

3) Improving Operational Efficiency

While some restauranteurs interpreted cues as opportunities to grow their businesses during the pandemic, others struggled to manage the situation, and focused on dealing with perceived threats from both inside and outside their businesses. In response to the COVID-19 crisis, Family, Polymath, and Special changed their business models by focusing on improving efficiency and reducing operating costs, rather than pursuing new opportunities to grow their businesses. Their business models and concepts were well-suited to the COVID-19

environment—i.e., their food traveled well and some services (e.g., to-go, delivery, and drive-thru) were already in place. Thus, these restauranteurs focused on reducing costs and waste, optimizing inventories, improving efficiency in taking and fulfilling orders, and improving their operating margins.

Their BMI actions reflected sensemaking using a threat frame to assess and respond to their environmental and organizational cues. The three restauranteurs believed that managing internal operations and changing the cost structure were the best ways to keep their business open. Thus, Family, Polymath, and Special undertook incremental changes in routines that did not necessitate a new business concept; but whereas Family and Special were more focused on improving operational efficiency (e.g., simplifying services, managing employees' tasks) to meet high demand, Polymath worked on lowering costs (e.g., managing inventory, owner worked long hours) due to limited sales. Figure 4.4 shows the trajectories of these restauranteurs' BMIs.

Operational Efficiency: Family and Special. When the government shut down indoor dining early in the pandemic, Family and Special moved seamlessly to manage their sales. They both owned buildings with large parking lots that they repurposed to provide additional services (e.g., curbside, online-order pick up, and delivery) to customers. Also, both restauranteurs benefited from having profitable businesses before the pandemic and maintained excellent reputations for serving quality food for over 30 years; these organizational features helped their early pandemic sales.

During the early pandemic months, customer demand was significantly higher because of Special's fast-food offerings; contactless services via drive-thru, to-go, curbside, and online ordering; and his access to information about successful fast-food restauranteurs' operations (see Appendix 8). He said, "I came to work during the valley of this epidemic, and there were more

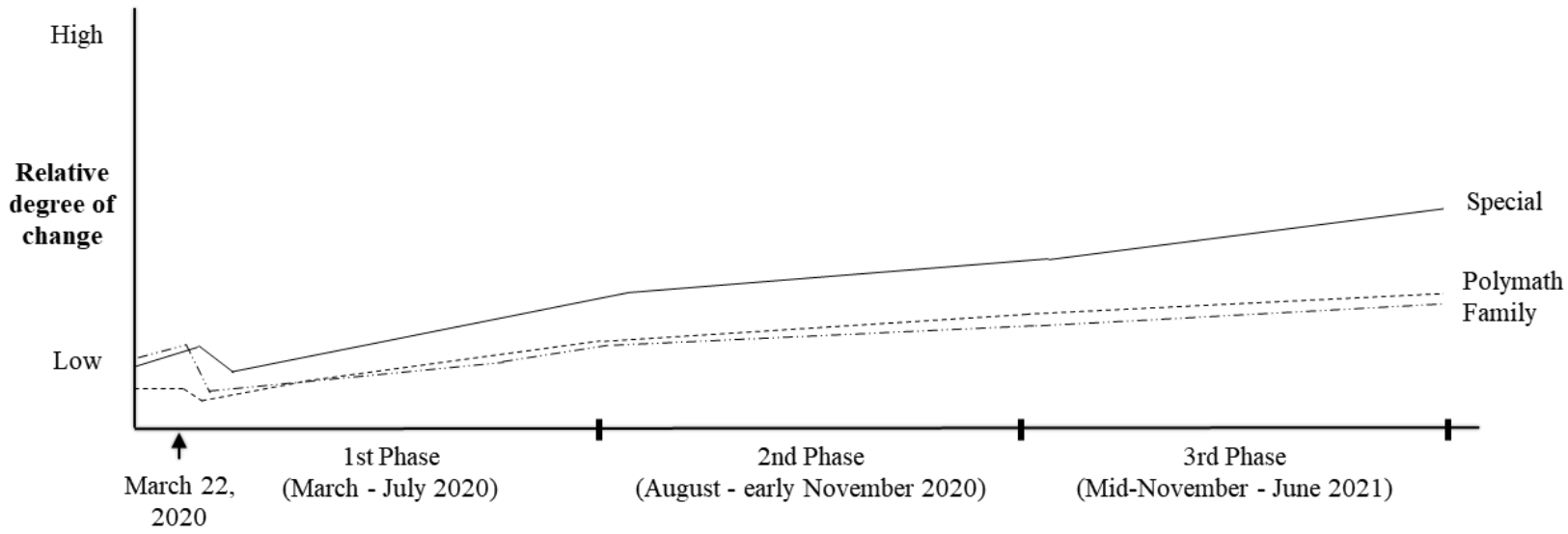


Figure 4.4. BMI Trajectories in the Improving Operational Efficiency Pattern

cars in my parking lot than there were on the interstate on the way to work. I mean, it was amazing."

The business was selling more food without having a dining room open and without offering catering services. Because of the high demand, Special did not pursue a governmental PPP loan. However, its main challenge was sourcing ingredients. One of his suppliers closed for several weeks due to a COVID-19 infection among employees, so Special described having to search for other sources of ingredients and driving a truck to different cities to get ingredients.

These restauranteurs interpreted environmental and organizational cues as threats they had to manage. As the pandemic started, Special was in the process of planning the tear-down and complete rebuilding of one of his restaurants because it was too small for its business volume. At the beginning of COVID-19, Special postponed the location's overhaul to take advantage of how well suited his business model was for pandemic demand. Also, focusing on the importance of operational efficiency, Special searched for answers to such questions as "What are we going to do facility-wise to meet the demands customers are putting on us to get them the food quicker?" By changing employees' tasks and positions and using the dining room space to help fulfill orders, he focused on enhancing the efficiency of the drive-thru and (new to him) curbside businesses. He noted,

> I have 32 spots in this parking lot that we carry food out to. Right now, as we speak, there are four people doing nothing but running back and forth with food going to cars. That was a big change in staffing and how we ran that. I went from three people outside in the drive-thru, and I think today there are 11 doing the business in a non-contact way.

Similar to Special, after the local government's shutdown order early in the pandemic, Family also closed his dining area and focused on curbside service (see Appendix 9). Although

his business was mostly focused on dine-in services before the pandemic, he leveraged the fact that his food travels well and is ready quickly after the order. “Within 15 minutes usually, we got the order ready,” he said. He had enough parking spaces to operate curbside service and experienced demand as soon as this service was set up. Family recognized early on the limits of the restaurant’s financial reserves, but government financial support (i.e., PPP), re-costing every menu item and increasing prices, and early strong sales allowed him to keep his staff employed and business profitable. Yet, offering only to-go and curbside services posed operational difficulties. At the beginning of the pandemic, Family did not have an online ordering system, and incoming orders over the phone were cumbersome. Family described that he struggled to take orders from the constantly ringing phone, to relay the orders to the kitchen, and to get orders staged for pick up. He explained,

> We had three phones going and we couldn’t get the orders in. I mean it was just bang, bang, bang. You know, you’d hang up and then there would be another…We got up to 45 minutes to an hour wait on coming to get your order.

From these environmental and organizational cues, he used a threat sensemaking frame to innovate and take actions. Family focused on increasing the efficiency of to-go and curbside businesses by changing employee tasks and positions constantly. He noted,

> We took all of our servers, and we went to the front, went to the phones; and we had three people answering the phone. We had our full kitchen, and we started delivering food in the parking lot to everyone that called.

Also, because the service was new to the servers, Family consistently revised internal processes to manage the curbside operations. He stated,

> What I did by managing, is for 12 hours a day, I would stand in the very front where the registers are at, on the phones; and I would make adjustments constantly. I wasn't always the nicest guy in the world doing that; but I would explain to my employees, 'Listen, we're having to learn this, the to-go.' It really was changing constantly.

In the second interview in early November 2020, Special and Family described how they gradually changed their restaurant spaces, processes, and structures to improve operations. Still, both restauranteurs interpreted the environmental and organizational conditions as threats. Externally, hiring employees was the main challenge, as was sourcing ingredients/materials and dealing with product/labor cost issues. Internally, both restauranteurs were generating enough sales, but were both challenged by managing newly added services and operations due to staffing issues. Thus, they still used threat sensemaking frames to improve operational efficiency.

Special complained about the labor market issue. His main environmental concern, among others, was staffing. Although he added a new drive-thru lane and mobile ordering stations to meet the demands and speed up sales, he had to change operations further to manage the sales volume because his business was at capacity. Also, at this time regulations permitted him to open up 50 percent capacity of the dining area. Because Special was selling more food without the dining room service, he decided to keep the dining room closed, continue to run efficient operations with fewer employees, and save costs by not offering in-store dining amenities (e.g., beverage refills, extra condiments or napkins, and not having to constantly clean the dining area). Indeed, Special noted that his margins increased 1.5 percent just by no longer offering drink refills.

Unlike Special, Family had loyal employees who had worked for his restaurant a long time before the pandemic. He stated, "We've got people who have been with us 20, 25, and 30

years," he said. However, because he added new services (to-go and curbside) and changed operations, he wanted to change the culture and operations by bringing in new people who had abilities suited to the new services being offered. Family worked on hiring people to assist with the new services and operations. He said,

> We've got employees that have been around for a long, long time. I'm going to have to kind of move them a little bit.… They're wearing out with it with the COVID and the age that they have and stuff. I do not want to get rid of them. They're what makes this restaurant, but we need to get a new set of new ones coming along with the different culture…. My baker is 74 …she's still here at 4:30 every morning. That's the kind of people I have…we're trying to hire a couple of people that can do stuff. Their [his employees] attitudes are pretty good. Some of them are just, they need a new challenge too…. We need to get a new breath.

A year after the pandemic began, vaccines were available, and restaurants were able to operate at 100 percent dining capacity. Environmental challenges for these restauranteurs shifted to managing customers for dine-in service along with to-go, curbside, drive-thru, and delivery, as well as the issue of hiring employees. Opening at full capacity while trying to maintain efficient to-go services, as well as dealing with the lack of staff, became strong negative organizational cues for Family and Special. Thus, both restauranteurs kept using threat sensemaking frames to take BMI actions—Family adopted more internal structuring efficiencies and Special relocated employees to the other store.

Even after the pandemic restrictions had waned, Special's dining room was closed for more than a year. The owner was hesitant to reopen the dining area because of the benefits (e.g., better margins and operations) and challenges in operations (e.g., staffing, dealing with mask

mandate restrictions). He did eventually open the dining room (at the end of May 2021) after seeing many other restaurants open up. He also decided to rebuild his second restaurant with a smaller dine-in footprint and relocate employees to the other restaurant to help with the operation while the renovation construction on the second restaurant was underway. In addition, based on his pandemic experience, Special decided to maintain certain structural changes he undertook during the pandemic (i.e., adding a new backdoor for walk-out delivery, dividing the parking lot into to-go and curbside services, changing the dining area's layout). Special explained,

> We had really two areas of meals being assembled, drive through and dining room. That is simple. The curbside added to the dining room. So, all of the sudden, that has become the harder ... because of the curbside demand ... the production area is feeling a lot of strain. It is being pushed. We took off some of the waiting area, the queueing as such for inside food, and created an 'exit only' back door for us to be able to get outdoors without fighting upstream as such with customers with these trays [in the dining room] with drinks and food.

With no restrictions on dine-in service, more customers dined in, while many customers continued to use to-go and curbside services. Family needed five more employees to keep the service running smoothly, though no staff members left or were furloughed during the pandemic. Given the labor market conditions, he was only able to hire two more employees. He interpreted these cues as a threat he needed to manage and solve. As a result, Family changed his operations even further by adapting a process he had learned at a large franchise restaurant. He explained,

> I learned this [efficiency] from [a Darden Restaurant franchise] years ago. They have what they call a ticket time, and your ticket time needs to be 10 to 12 minutes if you're on the fast food type of thing. You have to work that. All your cash registers tell you that

> sort of thing, you see? That's important because that keeps the level of your service up. Well, in order to do that, you've got to have someone that's in the window in front of that calling for the people to come and get it. You've got to take and separate the to-gos from the other. You've got to have everyone helping each other. We turn so fast, everybody has got to help everybody.

Therefore, during the pandemic, these restauranteurs fine-tuned their internal processes and focused on revenue generation and internal operational efficiency.

Cost Efficiency: Polymath. Polymath opened a new restaurant just before the pandemic; its 2020 goal was to make the new business profitable. The COVID-19 pandemic made it difficult to achieve this goal (see Appendix 10). Unlike organizational cues faced by other restaurants in this pattern (i.e., located in neighborhoods and shopping districts with plenty of parking spaces), many downtown restaurants such as Polymath's new restaurant struggled because of limited parking access; many people were working from home, resulting in a lack of customer foot traffic, and its entrance was located within another building, so it did not have direct street access. Although the food traveled well and was well suited for to-go, curbside, and delivery services, Polymath's downtown restaurant struggled with sales, while the other location (outside the downtown area but without drive-through service) performed better. Polymath interpreted these organizational cues as a threat, and prioritized cost reduction over operational optimization because his main challenge was lack of revenue. In our first interview, Polymath said,

> The first thing we did was we had to shut our [downtown] location down completely. I mean, the first problem with [downtown] was none of the offices, none of the employers

> had their employees coming in. All the restaurants around us were closed, all the theaters were closed; so during the week, you really had no available customers.

He decided to reduce business hours and open the downtown location only three days a week. Simultaneously at his other restaurant, he focused on reducing food waste; he implemented an inventory system (created by an employee, a supply chain management student at the local university) to determine how much of each item he was selling each day, so that he threw out less food at the end of the day. It also gave him a better sense of his costs, so that he discontinued items on which he made too little money. Polymath also worked extremely long hours to reduce labor costs, coming in at midnight to prepare the following day's inventory. Polymath explained,

> When COVID really sunk in and we knew what our sales were going to be for the next month or so, we had to reduce our labor costs; that was just it. That's the next thing I was going to get to, is that myself, my wife, and my partner had to start working a lot more… we pretty much do everything in the business.

Following the initial interview, he kept using a threat sensemaking frame and tried to reduce costs and obtain financial resources. When the local government relaxed COVID-19 regulations, and customers' consumption patterns (i.e., different sales patterns in time) changed again. Polymath had difficulty balancing shifting consumption patterns with his new inventory system: *"*It's hard to establish a pattern. I've been underproducing. I'm not producing at the same level I did this time last year. I've cut it back by about 20%." He tried to open his downtown store more days, but this failed to increase sales. With concerns about revenues, he needed more financial resources for his business. Thus, he applied for various government programs (e.g., U.S. Small Business Administration loan, state grants) in addition to PPP and

EIDL loans. Along with reducing costs and obtaining outside financial resources, he also worked a lot of hours in the kitchen and managed the company's finances. He was always looking for additional government financial support programs, so he applied whenever he came across new funding opportunities for his business. He stated,

> On October 7, I was in the kitchen. It was a Wednesday morning. At 5 a.m., the NPR National Broadcast comes on; so I always turn the radio on to listen to the news. At some point, they mentioned that day there was a new grant. It's [the state loan]; and businesses could qualify for up to $30,000, depending on how much lost revenue they can show. I thought, 'This is easy. All of our financials [are] ready.' Before I went to sleep [that day], I went online, I applied for the grant, I uploaded all my documents, hit send, and now I'm just waiting. I was one of the first ones to apply.

Finally, as various COVID-19 restrictions were lifted in early 2021, he still worked extremely long hours to reduce labor costs. "I worked from start to finish, starting December 3rd. I can't remember what day it was when I finally got a break, but I worked 103 nights straight in the kitchen. It was insane," he said. However, based on many organizational cues, Polymath used a threat sensemaking frame to manage his business by slowly opening his downtown store and focusing on operational efficiency by outsourcing managerial tasks. Again, he explained,

> We were able to take our accounting firm and hire them to be our full-time bookkeepers. So now all I do is I place kitchen orders, I run the kitchen, and I might spend five hours a week in the office and that's it; and they handle everything else … hire an accounting firm to take the burden off me so I can just stay focused on the kitchen. I think that's one of the reasons why we've seen our business get busier and grow over the last couple

> months—I'm solely focused on one thing instead of trying to wear many hats at the same time. It's worked out.

As a result, unlike restauranteurs following this pattern, Polymath faced revenue challenges due to geographical constraints (i.e., downtown). Thus, he was constantly lowering operating costs and seeking financial resources to ensure survival and profitability during the pandemic.

To summarize, while their existing business models served them well during the pandemic, all three restauranteurs worked on improving operational efficiency. Their BMI actions were based on using a threat sensemaking from to interpret environmental and organizational cues. Although Special and Family made enough sales to focus on operational efficiency during the pandemic, Polymath focused on cost reduction due to his reduced sales. Therefore, I found that restaurant owners who faced relatively few challenges with their existing business models but faced operational challenges and interpreted cues as threats ended up improving operational efficiency to increase profitability.

4) Implementing Temporary Changes

The pandemic posed severe challenges for restauranteurs who emphasized the dining experience as their restaurant's core focus. Four restauranteurs (i.e., Gladiator, Mathematician, Hospitality and Golfer) who highlighted dining services as their core business concept faced sales challenges during the pandemic. However, whereas two of these restauranteurs owned over twenty restaurants each (Gladiator and Mathematician), one (Gladiator) in multiple states, the other two (Hospitality and Golfer) were fine dining establishments with one and two locations, respectively. Although they varied greatly in size, and thus differed in the ease with which they could adapt, I found that unlike the other restaurateurs discussed thus far, many of the new services and modifications to their business models made during the early part of the pandemic

did not “stick,” and, soon after pandemic restrictions were lifted, these four restauranteurs reverted to their pre-pandemic business models focused on the dining experience.

These restauranteurs all employed a threat sensemaking frame and emphasized that their goal was survival rather than growth during the pandemic. Thus, they changed their business models to maintain sales, but only until they could revert back to “normal.” Their BMI decisions were more focused on changing sales methods and food offerings than on operational aspects. More specifically, these restauranteurs added delivery modes—e.g., to-go, curbside, third-party delivery, and online ordering—that were new to them, although commonly found in the restaurant industry. The fine-dining restaurants, in particular (Hospitality and Golfer), also modified their food offerings to work better with to-go (e.g., limiting their menu items to only food that traveled well) and to drum up interest (e.g., family style, meals or specials such as fried chicken night, or hamburger Tuesdays). The big restaurant groups (Gladiator and Mathematician), in contrast, added new services rather than changing menu items. Figure 4.5 maps these restauranteurs’ BMIs over time.

Giants Running in Circles: Gladiator and Mathematician. Gladiator and Mathematician are big restaurant groups, each with over 20 restaurants. Because of the high operating costs associated with managing a large restaurant chain, these restaurants’ owners found that their cash reserves and savings were depleted early in the pandemic, with not enough sales to sustain commitments to employees (see Appendices 11 and 12). Also, prior to the pandemic, both restauranteurs operated dine-in focused establishments, which were their main revenue source, and employed hundreds of wait staff to offer the service. Thus, soon after local governments prohibited in-person dining (on March 20, 2020), these restauranteurs interpreted the environmental and organizational cues as a threat and took BMI actions to survive. Both

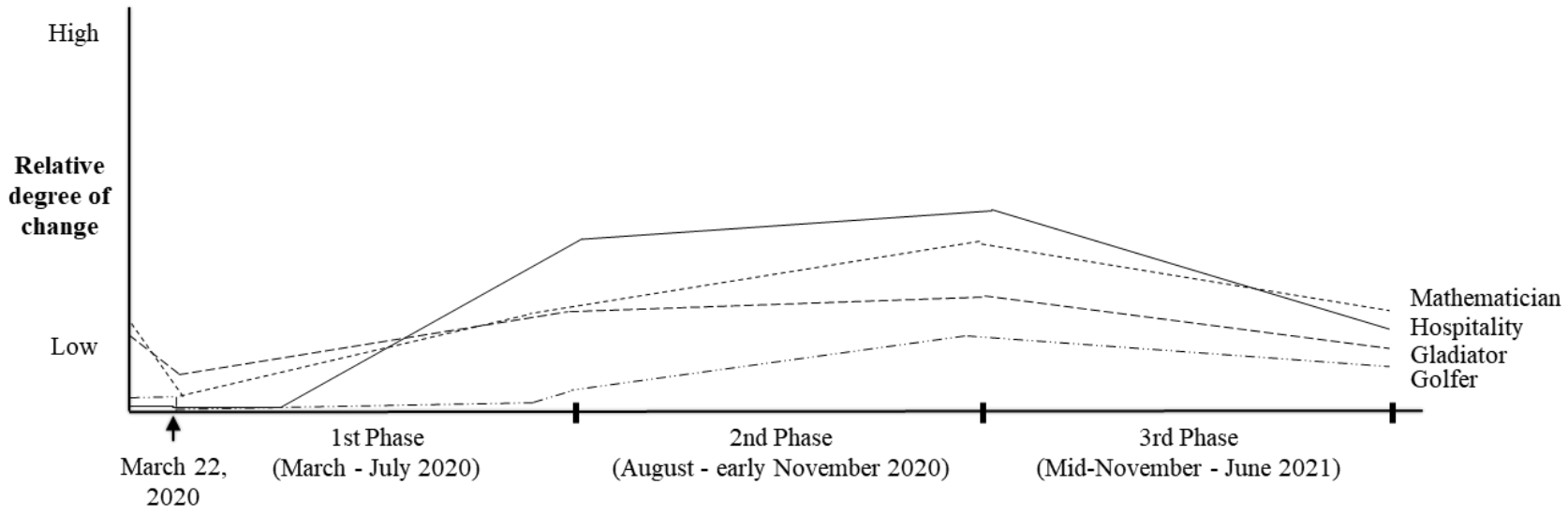


Figure 4.5. BMI Trajectories in the Implementing Temporary Changes Pattern

restauranteurs cut expenses by furloughing most of their employees and closing some restaurants with no or marginal profitability, while increasing sales by introducing new services (e.g., curbside, delivery) in their open restaurants. Also, both restauranteurs reduced menu items due to sourcing issues and travel issues with some of their food items. I discuss each restauranteur in detail below.

Mathematician was unable to respond quickly enough to the pandemic. He said,

> We were up for every restaurant and very, very, very positive until Monday, March 9th, when the first scare started. By Sunday, the 15th, the restaurants were completely empty. We were looking at the biggest year in the history of the company; and then, like a light switch, it was gone. It was almost so fast you couldn't react fast enough.

Mathematician was unable to keep all his restaurants open because nearly half of them did not have enough sales to cover the pay of their cooks and staff. Therefore, he had to furlough about 85 percent of his over 1,000 employees. With half of the restaurants open and with the remaining employees working, he started focusing on services that the government allowed (i.e., to-go, delivery, and curbside). He installed curbside tents in the parking lots, promoted online ordering, provided in-house delivery, reduced menu items due to food travel and sourcing issues, and sold to-go alcohol (recently allowed by the local governments).

Similarly, Gladiator experienced a significant sales drop in the early pandemic. His company had many partners and managers who worked with him from different locations, so they had weekly online meetings to discuss solutions. During the meeting, they exchanged ideas and brainstormed potential solutions together. He explained,

> One of our guys in [a location], when it first started... he was kind of depressed when they were just closing down, having to do to-go; and he started thinking about it, and he

> said that then he got mad. And he said, 'I'm not going to let this happen. I'm going to fight like hell' We coined the term … #FLH.

They even made "#FLH" (i.e., fight like hell) wristbands that they distributed to their staff (See Figure 4.6). They also had to furlough most of their employees to reduce operating costs. With the remaining employees and managers, they provided new offerings—such as 20% off items for to-go and curbside, family meal promotions (i.e., inexpensive meals for large groups), in-house and third-party delivery services (e.g., Uber Eats, Grub Hub), and selling raw meat and seafood—to expand sales channels to reach as many customers as possible. They also erected curbside tents at building entrances.

To-go, curbside, in-house deliveries, third-party deliveries, and online orders generated revenue and helped keep the doors open. However, adding new services and transitioning from primarily dine-in services to a mix of dine-in and to-go based services was challenging. For instance, Gladiator said,

> We had some of our restaurants going to free home delivery. That went over well, so it wasn't a clear victory for that versus the 20 percent off.... I think that with the free home delivery, it is also something that we may continue going forward, potentially. There are lots of issues with that. Sometimes, it is uncomfortable to go to a certain area of town in some places where we have restaurants. How do you do that? We don't deliver to that part of town; we only deliver to this part of town. That's problematic.

Mathematician also noted,

> The biggest problem is when [we] opened back up at 50 percent. The majority of our business was still to-go business; but at the same time, you're also having to go back and do everything that you used to do. And the kitchen lines, I would call them the

Figure 4.6. Example Picture of Gladiator's Action

> manufacturing plant of the restaurant. They were not set up to have to-go lines going at the same time.

By the second interview the restaurants were open at fifty percent capacity, and more customers visited them. However, the main challenges were staffing and managing newly introduced services. After both restauranteurs furloughed many employees due to offering only certain services during the early pandemic and the availability of generous unemployment benefits, they found that bringing employees back to the business was challenging. Their previous decisions undoubtedly changed organizational conditions (i.e., more new services, but fewer staff). Both restauranteurs believed that external factors such as unemployment benefits and inflation made hiring more employees difficult. Gladiator noted, *"*In fact, it was a battle against unemployment, right? They were getting their check [unemployment benefits]; and they realized, 'Hey, this is a pretty good gig here,' so we did [have a] challenge with that." Mathematician also stated, "We don't have a lot of employees. Employee tensions are very, very high right now ... especially back of the house, kitchen labor... that's where our inflation is. We've had to give out raises [to attract them back]." Thus, both restauranteurs still interpreted environmental and organizational cues as a threat to manage for their businesses.

To respond to the challenge, Gladiator added an online order system for to-go, curbside, and delivery businesses to enhance sales with limited employees by making operations easy for staff. He said,

> That [new online order system] takes a person away from being on the phone for a long time, it also eliminates the error that a server might make from what she writes down and hears from the guest, and in terms of ringing it into a POS system and maybe not even doing it correctly, whereas the guest is doing their order, reviewing their order

> themselves online, and all of a sudden the check pops up in the kitchen. That's how that works. Then, we simply just need to get it, bag it, and have it ready for DoorDash or for the curbside, when they pick it up, so we'll see what that does for our sales volume. It could be significant.

Mathematician, on the other hand, had to turn off their online-order capability at times so that they could sustain operations at a manageable level. He stated,

> We've had a few Friday and Saturday nights where we've had to turn ChowNow off. We have to call ChowNow and just say we're down for the next three hours. We've had that. The bigger restaurants...[one of Mathematician's large restaurants] is the perfect example. They've got two lines coming in and they got ChowNow coming in. They're coming in so fast we can't get them rang up fast enough, and so we do have to turn it off.…we have to accept the order and until we accept the order…the order is pending.

A year after the pandemic began (March 2021), people were getting vaccinated, dining areas were completely open, and masks were no longer mandatory. More customers visited their restaurants and sales improved. However, labor shortages continued to be a major environmental and organizational issue. Both restaurant owners observed similar challenges within their businesses, such as managing newly added services, preventing employee burnout, and rapidly increasing labor, ingredient, and material costs.

Thus, Gladiator and Mathematician quickly discontinued the new services they added during the pandemic but were no longer profitable. Gladiator achieved higher sales and profitability from online orders (i.e., to-go and third party delivery) and dine-in services during the final phase compared to pre-pandemic. Therefore, he kept the services while discontinuing

others (e.g., in-house delivery, 20 percent off promotion, family meal promotion) that were unprofitable, he said,

> We had Marketplace [where they sold raw meat and seafood] and we also had some family packages that we were doing …. We stopped that, it was really a good deal for the guest …. We did also give 20 percent off [for to-go and curbside orders] …. We had free delivery in some restaurants and then we also did 20 percent if you did curbside but tried to really kick it and then try to have an attitude of 'Hey, we know this is hurting everybody, this whole thing.' So … we cut it off at some point. We said, 'We can no longer do it.' Once the dine-in happened we pretty much cut that off.

Mathematician interpreted the labor shortage issue as a serious threat for his business, he said,

> We don't have any extra labor around, everybody is doing their job and want to go home …. We are truly experiencing the fact that we are, at this time, very beat up; our people are very tired. We lost a kitchen manager this morning in [Location A], because of stress and working too much. All of our people are very stressed right now.

Thus, he reduced business hours for some of his restaurants and actively relocated employees if some restaurants required assistance. Indeed, when we conducted our last video interview with Mathematician, he was taking a shift as a floor manager at one of his restaurants because of his manager shortage. Also, he removed some services added during the pandemic (e.g., curbside, in-house and third-party deliveries) to make the operation run more efficiently. However, he kept the other services that help with sales (e.g., online to-go ordering services). He said,

> During the first two months of COVID, whenever we were take-out only or delivery, we did it… but we are not a part of their programs…. We try to [use different lines in the

> kitchen]. It's just right now, you don't have enough people to do all those things, so you've just got to mix it all together. I mean, if you could have seen Mother's Day at 6:00 at night, and this is where it goes back to at 6:00 on Mother's Day night, you have a restaurant that is relatively full, but the take-out is such a big part of it that it dominates the situation.

Therefore, these restauranteurs' prior actions (i.e., furloughing many employees) and business models (e.g., dine-in focused business, large restaurants with multiple locations) were interpreted as threats to manage, along with environmental changes. Some early changes (but not all) were abandoned to return to their in-dining experience.

The Party is Over: Golfer and Hospitality. Golfer and Hospitality run chef-driven restaurants that are smaller (i.e., number of restaurants and employees) compared to the two restaurant groups discussed above. Before they started their own businesses downtown, these restauranteurs had worked as chefs for a high-end resort and learned to provide customers with excellent dining experiences and higher-end cuisine. With their experiences, their business models focused mainly on dine-in services for dinner only. Prior to the pandemic neither restauranteur offered online ordering, to-go, or delivery services.

Due to changes resulting from the pandemic (e.g., shutdown orders and limited-capacity rules), Golfer's and Hospitality's business models faced significant and early sales pressure, resulting in having to create new revenue streams to survive (see Appendices 13 and 14). Similar to the larger restaurant groups described above, these restaurants used some of the industry's service solutions, such as delivery, online ordering, and to-go menus. However, their actions compared to those of Gladiator and Mathematician were more adaptable and flexible.

Just before the government's shutdown order, Hospitality was on vacation and was alarmed by how quickly COVID-19 was progressing and how rapidly sales were declining. His business model did not fit with the shutdown restrictions imposed; his food did not travel well, and it took time to prepare after the order because his business was mostly focused on dine-in services and offered high-end cuisine primarily prepared at the time of the order. However, he anticipated a recession in 2020 and had saved sufficient financial resources to retain most of his employees early in the pandemic, using his own savings and government financial support. When Hospitality returned from his vacation, he immediately closed the doors and started brainstorming with his team to find possible solutions based on the environmental and organizational cues and his threat sensemaking frame.

After several weeks, he used ideas from his employees and his external network of restauranteurs (who had worked at the resort with him) to develop a to-go menu, including alcohol, and delivery services. He said, "Before that, we never did to-go food, so to speak. We were considered a dine-in only type of restaurant. We had to completely change our mindset, our model, the type of food we cook in a day." To provide the new services, he had to change the menu items to maintain food quality during transportation. Hospitality began serving sandwiches, hamburgers, fried chicken, and even house-made ice cream, some of which had not previously been on his menu. Also, he began offering lunch service, which he had not done before. Hospitality explained, "It was anything that we could do to make a couple of bucks, we were doing it." Early in the pandemic, he actively changed business concepts and models. Thus, during the first round of interviews he appeared to be one of the most innovative restauranteurs making the biggest changes.

As pandemic restrictions eased before the second interview, customers started returning for dine-in service. Sales increased slightly more than they had earlier in the pandemic, but hospitality still employed a threat sensemaking frame. Because he faced various environmental challenges, such as increased food costs and limited customers in the downtown area, he actively managed food waste and inventory. Hospitality found that managing both to-go and dine-in services added significant complexity to the business because it required extensive planning in food inventory. Because they were a reservation-only restaurant prior to the pandemic, the changes entailed more inventory work. Therefore, he focused on smoothing operations by offering a common *prix fixe* menu (i.e., a four course menu at a fixed price) for both dine-in and to-go customers. Discussing the *prix fixe* menu, he said,

> [It] helps us streamline what we're doing from a food cost and from a labor cost. Across the board, it just streamlines everything. We kind of know how much food to order because we're trying to do by reservation only for the most part. On the weekends, we can guesstimate how many walk-ins we're going to do.

By the last interview, instead of always offering the same menu items, Hospitality frequently added and changed menu items for to-go and dine-in services to capture revenue. However, when the restaurants were fully open and more people began dining out after vaccinations became available, Hospitality dropped or limited most of the new services (e.g., prix fixe, to-go, and lunch business), added a hefty fee to to-go orders, and tried to return to pre-pandemic offerings. He removed the majority of their BMI actions due to difficulties in managing new services and food items, since he could now offer full dine-in services. Thus, Hospitality interpreted new environmental and organizational cues as a threat to their business to operate and generate revenues. He commented,

> I think people were just ready to get out and eat. So we saw a huge uptake. We had switched. We were doing the prix-fixe menu, and then right after Valentine's Day we switched back to kind of our somewhat regular menu where there are multiple choices; so there is more of kind of our full menu. In essence, it was kind of back to what we were doing before.

Unlike Hospitality, who made immediate changes, Golfer slowly altered his business model. Early in the pandemic, Golfer did not aspire to do more business because he believed that the restaurants located downtown were well-established and that sales were promising. Rather, he wanted to take a break, he commented, "2020 was going to be where I take some time off. Luckily, my hand was forced. I had to take some time off. I kind of decided everything was going so well."

When the pandemic hit, he employed a threat sensemaking frame to interpret environmental and organizational cues. He had no debt and had amassed reserves for unexpected business challenges, so when restaurants were shut down in March of 2020 Golfer believed that he would be able to get through the pandemic. He explained, "We were financially prepared to weather a storm, especially if we had to close down for good. Our fixed costs are manageable with the funds that we had set aside." Thus, he closed his restaurants while furloughing employees, and he explained,

> At that point, we can't operate. There's no point of trying to operate with less than 10 people or whatever. We made the call on Monday that we're done for the time being. We had reservations later in the week. We had to call those people and explain to them what was going on. We did nothing. We did no takeout. We did nothing. We donated food to

> United Way and cleaned out our walk-in and just kind of hunkered down to see what's next.

Golfer closed the doors for several months. He did not want to open his restaurants at 50 percent capacity. Yet, one restaurant was in a hotel and in partnership with the hotel, so he kept that restaurant open to maintain the partnership. Soon after he re-opened the hotel restaurant Golfer re-opened his second restaurant, but he experienced low sales in both. He started providing services (e.g., online to-go orders and lunch) that were new to his business. He also made menu changes because some of the food did not travel well. However, the restaurants' locations and structures made offering those services challenging because neither location offered parking. As Golfer described:

> The physical spaces that we're in, I found it to be a little bit of a hurdle towards any sort of to-go type of thing. It took a while for me to wrap my brain around how we were going to do it.

Finally, as various COVID-19 restrictions were lifted, he noticed customers' needs changed. However, serving customers' needs were challenging because of the labor shortage problem. Golfer's business did not have enough employees. He also discovered that he had a restaurant manager who was hurting business sales by limiting reservations and undertaking other ways to ensure the restaurant was not busy, he said,

> We discovered there were some things being done that were just… would prevent us from being busy … like limiting reservations on Open Table, and just really strange, bizarre things. I think my general manager was afraid to be busy (laughter), so he made sure that we weren't (laughter).

In addition to firing the manager, given his threat sensemaking frame he decided to drop some services and considered discontinuing more later. In the last interview, he described his current thinking and how he might cut services in the future:

> Our system works pretty well for us, so we'll probably continue with it unless [new services] ... get overwhelming for the kitchen, once we ramp up because, you know, on a busy Friday or Saturday night if we're doing, you know, 200 in the dining room, it doesn't make sense to like overwhelm them with a, you know, four orders to go, or something like that. So, we'll have to play that by ear, but it's not a huge driver.

After our interview, Golfer discontinued online to-go orders.

Therefore, Hospitality's and Golfer's new business models required changes in many areas such as menu items, layout, and delivery, but they only served as temporary measures until they could re-open their dining rooms at full capacity. Although these BMIs helped these restauranteurs survive, they discontinued them when pandemic restrictions were lifted, rather than using them to create new revenue streams.

In summary, all four restauranteurs faced significant challenges to their existing business models but implemented BMIs as temporary solutions. Their temporary changes were based on employing threat sensemaking frames to interpret their changing environmental and organizational cues. Gladiator and Mathematician actively added new services while reducing operating costs because their businesses were too big to continue staying open, given their financial resources. Although these restauranteurs removed many services, they did integrate successful services (primarily online ordering systems used to facilitate carry-out orders into their business model after my final interviews. On the other hand, Hospitality and Golfer also added new services and changed menu items because they also interpreted cues as threats.

Although both restaurants were small (compared to the two big restaurant groups), providing flexibility, the speed with which they responded was affected by their cash reserves. However, they never really modified their view of themselves as dine-in only establishments, and removed (or planned to remove) all the new services they offered when environmental conditions normalized. Therefore, because they employed threat frames and never really modified their self-concepts as dine-in restaurants, these restaurateurs ended up implementing temporary changes until the crisis had passed.

Making Limited Sense through Low-level Sensemaking

Finally, I have identified one action (i.e., *using the same old business models*) taken by restauranteurs who did not actively engage in sensemaking to interpret their environmental and organizational cues, and thus seeing them as providing neither serious threats nor promising opportunities, which led to taking no or very minimal BMI actions.

5) Using the Same Old Business Model

While fourteen of the restauranteurs innovated their business models to varying degrees during the pandemic, the other three restauranteurs (i.e., Happy, Steady, and Unconventional) engaged in minimal or no BMI. They attempted to maintain the status quo and made minor changes at the margin to mitigate the pandemic's negative effects. Restaurants in this pattern did not experience a significant performance change compared to the restaurants in the other patterns. Two of the restaurants even outperformed their previous performance levels without any business model changes during the pandemic.

The lack of BMIs was due to several factors. First, all three restauranteurs expressed a lack of concern about their businesses' profitability because their business models were suitable during the pandemic. Second, all three owners described personal attention to other issues (e.g.,

retirement, relationships with customers and employees, another business venture) rather than pandemic-related business issues. Although these restauranteurs had different business models, cuisines, and faced different organizational conditions, their lack of interest in BMI was similar. Figure 4.7 maps of these restauranteurs' BMI actions over time.

Not about Money. Happy owned a restaurant that provide dine-in, to-go, and delivery services before the pandemic (see Appendix 15). Her sales were slightly reduced after the shutdown was issued, but she still made enough to keep the business running. Rather than her business, Happy was more concerned about her health and her employees. In the first interview, Happy stated, "The main important thing is to protect your employees and protect yourself and take good care of yourself and to make sure everybody's all right." Thus, to the extent she employed a threat frame, it was with respect to her own and her employees' health, not her business. Therefore, rather than taking active BMI actions, she mainly followed government orders and CDC guidelines to minimize personal contact in operations. She added a new online order system and created a physical to-go space on a counter in the restaurant. Otherwise, she mostly maintained the existing business model. She explained,

> Number one is relationship loyalty, number one, yes.... I want my product in a good quality. I'm willing to pay more and make sure it's the same and the customer is happy. Sell more, make less is all right as long I survive. That's my philosophy.

In the second interview, she kept everything the same and did not make any changes in her business model. However, before the last interview, Happy retired from actively managing the restaurant and formed a profit-sharing partnership with the restaurant's cooks. She said, "You see the boy in the kitchen? He's been with me for so long .... Now that I'm not working I told him, 'We'll share the profits'…. I am retired."

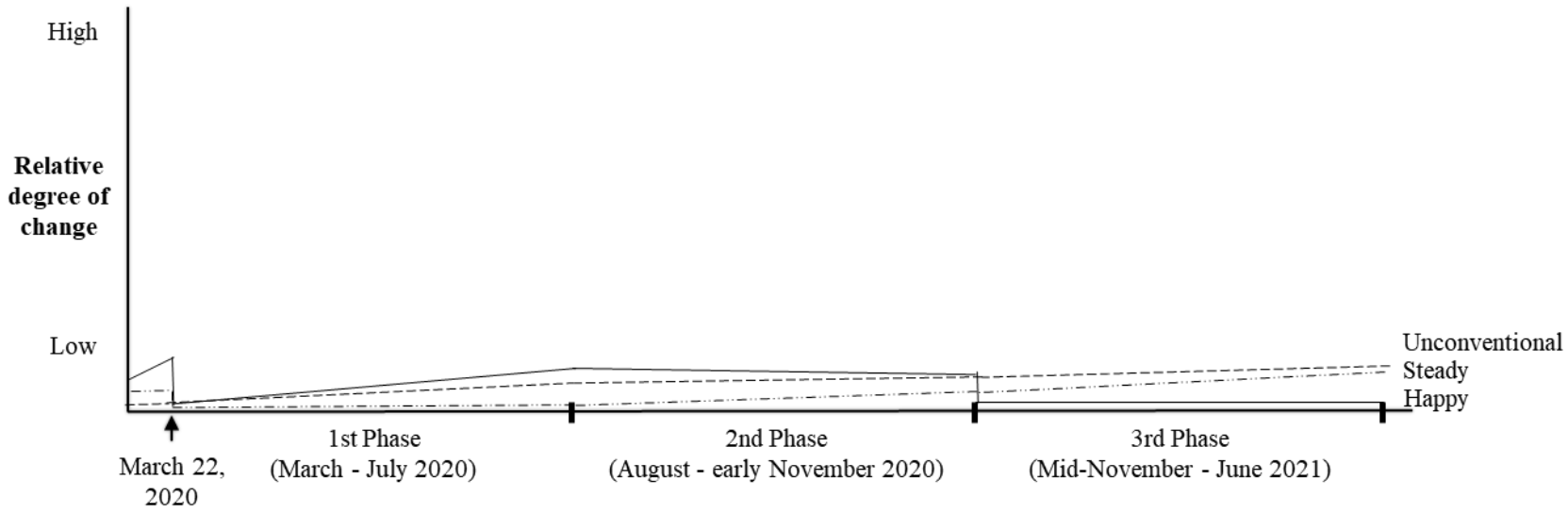


Figure 4.7. BMI Trajectories in the Using the Same Old Business Model Pattern

Steady owned a restaurant that also provide dine-in, to-go, and delivery services (see Appendix 16). His sales were significantly improved after the dining shutdown was issued. Steady did not want to grow his business because he was considering retirement and his children did not want to take over the business. “I’m getting ready to retire pretty soon, so I’m not that ambitious,” he said. Thus, he also considered environmental and organizational cues as neither opportunities nor threats because he did not even want to keep the business open when COVID-19 first started. He said,

> I talked to my employees … and most of them don’t agree with me to close. They said, ‘Why don’t we try and see what happens?’ So I did. I immediately took off all the dine-in service. I took out the delivery service, just doing take-out.

Thus, he offered only to-go service because the process was easy to manage given his existing business model, which largely revolved around take-out already. Also, given his age (a high risk group for COVID-19), he believed that doing to-go only business was a safer way to operate business because it limited contact. Although dine-in service was permitted after May 1, 2020, he refused to provide it for more than a year because the restaurant was already overwhelmed with to-go orders. He noted,

> It’s crazy. I have people from everywhere who call me. You know, I have customers from [West part of city A], [South part of city A], and now somebody even from [City B] came to visit us. They haven’t been to our store before. A lot of [Asian food] restaurants, they closed. I’m the only one … open and doing carry-out.

Adding more services would require more of the owner’s time to work at Steady. At the time of the second interview, Steady refused to reintroduce dine-in and delivery. He said,

> I would just try to maintain this kind of situation, so I don't have to work that hard … I don't want to overload myself that much. Yeah, I think I'm happy with steady business so I can plan instead of going back and working overtime and try to make sure I have enough food to sell. This is not what I want to do. I just like to make it easier.

In the spring of 2021, customers kept complaining about the lack of dine-in services. Steady finally opened his dining room, but he was not enthusiastic about this action.

Unconventional started a gourmet dessert business as a second job because she enjoyed feeding people (see Appendix 17). She wanted to keep the business small, explaining, "I have really always been totally a lifestyle business with no aspirations to do anything other than just make a living for myself and enjoy the work that I do and enjoy connections with people." Her business model consisted primarily of selling the desserts via an online marketplace (Goldbelly) as well as in regularly scheduled pop-up shops in the local market. Early in the pandemic, business was busy because people ordered more comfort food items via online stores. However, because she was uninterested in business growth and unworried about survival, she did not consider the cues as an opportunity or a threat. Unconventional added some services (i.e., selling from the restaurant's website, contactless pick-up, in-house delivery service) during the pandemic, but she expressed relief that the business's sales slowly waned. In my last interview, she explained,

> If I was operating at the pace that I was operating at during the peak of the pandemic, shipping out, you know, 50-60 boxes of [desserts] a week, I mean that would be just really hard for me to keep up with as I'm reopening [another business]…I don't know; but for now, it's kind of been this very nice and convenient, like slowly ramping down of [desserts] shipments as [her other businesses] are kind of ramping up. So I haven't been

[going] crazy, and I haven't gone broke. So that's been really nice, how that's all sort of panned out.

She was more focused on an event space she owned that was contiguous to the kitchen where she made the desserts and local restauranteurs operated ghost kitchen services. Thus, unlike the other restauranteurs actively engaging in BMI, these restauranteurs maintained the status quo and did not perceive either significant opportunities or threats from the pandemic. Rather, their ambitions were to limit their efforts to the extent possible.

In sum, I found that many restauranteurs actively engaged in BMI, but some did not. Restauranteurs' sensemaking frames shape whether they interpret environmental changes and organizational circumstances as opportunities or threats, and thus influence their BMI decisions and actions. In all, I identified five BMI patterns: (1) replacing or adding new business concepts, (2) expanding the physical structure of businesses, (3) increasing operational efficiency (4) implementing temporary changes, and (5) using the same old business model. However, I interviewed restauranteurs located in one city in the Southeastern United States, where the environmental changes were the same for all restauranteurs. Restauranteurs' BMI actions may differ when faced with different environment conditions. For instance, having cold winter weather and more restricted and prolonged regulations (e.g., capacity restrictions and mask mandates) may create different environments for restauranteurs to operate their businesses. Thus, using news media data, I employed topic modeling to capture how restauranteurs' BMI actions were discussed in various environmental conditions. In the next chapter, I use this large-scale data collection to identify patterns in BMI changes in restaurants throughout the United States.

CHAPTER 5

TOPIC MODELING METHODS

In my comparative case study, I interviewed 17 restauranteurs located in a city in the Southeastern United States. From this study, I identified several important features of their business model innovation changes over the course of the pandemic. I recognize that the resulting model and BMI changes are from one city and that conditions and resulting BMI for restaurants may differ in other places U.S. regions during the pandemic.

While COVID-19 permeated the entire United States, the reactions to this pandemic by different localities, seasonal conditions, and severity of the virus varied from place to place. The severity of the restrictions and attitudes towards fighting the coronavirus via mask mandates, business shutdown orders, and stay-at-home orders have differed by cities and regions (Lee et al., 2020). In addition, relatively mild winter weather conditions in the South and West allow restaurants to offer more outdoor dining compared to Northern states, where average temperatures often fall below zero degrees (Fahrenheit) during the winter. Even though the pandemic was the main external change, the particular environmental contingencies that a restaurant faces varied across geographic and political regions. Therefore, I undertook a large-scale investigation of restaurants across the United States to determine if patterns uncovered from my qualitative analysis generalized to other regions. Specifically, I extended my understanding of BMI across the United States by applying topic modeling to a large textual dataset of restaurant media reports from March 2020 to September 2021. Bringing together insights from my case study with a large-scale topic modeling analysis is a novel methodological combination that allows me to increase the trustworthiness of my case study findings by comparing them to national BMI patterns over the pandemic.

In addition, a longitudinal multiple case study of companies allowed me to explore in detail, and over time, restaurant owners' decisions and actions during the COVID-19 pandemic period. However, although multiple case study designs can be highly accurate due to the rich, in-depth data on each case, this approach typically yields more complex findings that are harder to generalize (Langley, 1999). Therefore, using these two process studies (multiple case and topic modeling methods) together can uniquely address the trade-offs (i.e., accuracy, simplicity, and generality) involved in process research (Langley, 1999). Building on the work of Thorngate (1976) and Weick (1979), Langley (1999) identified tradeoffs in process research among (a) accuracy—levels of explanations (abstracts or details) from the original data, (b) simplicity—the number of theoretical factors and/or relationships, and (c) generality—theoretical ranges of applicable situations. Langley (1999: 706) stated that "accuracy tends to conflict with both simplicity and generality…simplicity and generality tend to be more compatible." Many scholars have argued for different methods and approaches to understand a phenomenon due to these trade-offs (Langley, 1999; Lê & Schmid, 2022; Lerman, Mmbaga, & Smith, 2022). Thus, I conducted an approach that emphasizes accuracy (case research, what Langley refers to as a synthetic approach) and another approach that is associated with simplicity and generalization (which Langley labels quantification of data).

Using a large textual dataset, I used topic modeling to examine broad patterns (Sonpar & Golden-Biddle, 2008) and assess whether different business models have emerged in different areas in the United States as a function of the differences in environmental opportunities and constraints (Croidieu & Kim, 2018; Hannigan et al., 2019; Steyvers & Griffiths, 2007). I compared different regional conditions (e.g., East North Central, South Atlantic, and Mountain) and their effect on BMI decisions and actions. Thus, from both studies, I provide a rich account

of different BMI decisions and actions over time in one industry. Next, I will introduce the media sources selected, explain the topic modeling approach I used to assess BMI patterns found in my qualitative analysis, and discuss my findings.

Data Sources

I compiled a large textual dataset comprised of public press articles about restaurants from national media sources, including (1) national newspapers, such as *USA Today* and *The New York Times*; (2) metropolitan area news media, such as *The Chicago Tribune* and *The Washington Post*; and (3) regional and local news media, such as the *St. Louis Post-Dispatch* and *Tampa Bay Times*. Specifically, I pulled articles using Nexis Uni data—using keywords, such as *restaurant, pandemic, COVID-19, business model,* and *innovation*—from the beginning of the pandemic in March 2020 to the end of my qualitative interviews in September 2021. Table 5.1 summarizes the data sources.

I collected over 110,000 news articles and captured each news article's publication date and location (i.e., state), but many of the articles discussed COVID-19 situations in different countries and multiple states together in the United States rather than in just one state. Because I needed to isolate local conditions, having data from multiple states would not allow me to identify the local conditions. I then removed public press articles that were not linked to a particular location, leaving 36,592 news articles discussing restauranteurs' actions related to their BMI during the pandemic.

To complement the media data collection, I also collected data related to each state's political party strength (i.e., Democrats, Republicans). As a criterion, I used 2020 presidential election results by state. I chose 2020 presidential election results because states that voted for

Table 5.1. Summary of Data Sources

Data Source	Database	Time Period
Public press articles about the U.S. restaurant and food-service industry	Nexus Uni database - Search Terms: restaurant, pandemic, COVID-19, business model, and innovation - Sources in the U.S.: (1) Major national news media such as The New York Times, USA Today, The Wall Street Journal, and many others; (2) Metropolitan area news media such as The Chicago Tribune, Los Angeles Times, New York Post, The Washington Post, and many others; (3) Local news media such as Arizona Daily Sun, Detroit news, Tampa Bay Times, and many others.	March 2020 – September 2021
Political party strength	Presidential Elections Results (Andre et al., 2020)	November 2020

President Donald Trump had fewer COVID-19 restrictions compared to blue states (e.g., Armstrong 2020; Goodkind, 2020).

LDA Topic Modeling

Given the substantial media data collected, I used topic modeling to determine if BMI actions found in my qualitative analysis could be identified in a broader sample. Topic modeling is well suited for this type of analysis because it allows researchers to identify topics within large amounts of textual data and to track topics over time (e.g., Croidieu & Kim, 2018; Wang, Bendle, Mai, & Cotte, 2015). Thus, I identified topics related to the four BMI actions found in the qualitative study and how those topics changed over time in different environmental conditions (e.g., geographic locale and restriction levels) across the United States.

Among the various topic modeling approaches, I selected the Latent Dirichlet Allocation (LDA) topic modeling approach (Blei et al., 2003), which is widely used and well accepted in management studies (Hannigan et al., 2019; Kaplan & Vakili, 2015). LDA topic modeling is an algorithm that inductively identifies groups of word lists as topics from documents (Blei et al., 2003; Schmiedel et al., 2019). The basic assumption of the LDA algorithm is that words appearing in similar contexts are prone to have similar meanings (Schmiedel et al., 2019; Turney & Pantel, 2010). LDA topic modeling assumes that a word's meaning is defined by co-occurrences with other words and their relationships in the text (DiMaggio, Nag, & Blei, 2013). For instance, the co-occurrence of *bank, water,* and *stream* from a set of articles are interpreted as a river-related topic. In contrast, the co-occurrence of *bank, money,* and *finance,* reflect a financial institution topic.

In using LDA topic modeling, researchers make several decisions. First, researchers decide how many topics to extract from the textual data (Croidieu & Kim, 2018; Kaplan &

Vakili, 2015; Schmiedel et al., 2019). Depending on the researcher's topic specification and the amount of textual data, the topic modeling algorithm may create abstract and partial topics (e.g., extract small numbers from a large set of documents) or overlapping topics (e.g., extract large numbers from a small set of documents). Researchers also have to decide how to assess the identified topics' construct validity. To address these issues, multiple researchers can work together and use quantitative and qualitative evaluation approaches to identify the appropriate number of topics by extracting various numbers of topics and evaluating them together (e.g., Schmiedel et al., 2019; Wallach, Mimno, & McCallum, 2009), and determine reliability and face validity by having in-depth discussions about the extracted topics (Antons, Joshi, & Salge, 2019; Kaplan & Vakili, 2015). Because "topic modeling does not automatically yield new valid constructs or extract significant relationships at the push of a button" (Schmiedel et al., 2019: 960), researchers need a deeper understanding of how to evaluate extracted topics for capturing reliable insights. Next, I examine in detail the analysis and findings.

Data Analysis

My goal for this large-scale media study was to determine (1) whether the four BMI patterns—i.e., replacing or adding new business concepts, expanding the business's physical structure, improving operational efficiency, and implementing temporary changes—from the interview study were found across the United States and (2) if these actions' emergence patterns differed across regions and states. I excluded the last pattern from the case study (i.e., those using the same old business model) because they engaged in minimal or no BMI. Applying topic modeling to an entire article creates substantial noise—i.e., lots of text unrelated to BMI actions. Before applying the LDA algorithm to the 36,592 articles, I took a series of data-cleaning steps.

Data Cleaning. LDA topic modeling's biggest challenge may be that researchers do not know what topics they will discover and whether the topics will be relevant to the researchers' interests. Topic modeling produces a plethora of topics, many of which are irrelevant to the construct or patterns of interest to the researcher.

For instance, Kaplan and Vakili (2015) conducted topic modeling with nanotechnology patent abstracts to examine the relationship between innovative knowledge (i.e., originating new areas) and the realization of economic value (i.e., the number of citations). To capture innovative knowledge, the authors extracted 100 topics and stated that "A series of topics focused on production processes such as chemical functionalization of nanotubes …. Other topics covered applications into such areas as neural networks, reinforced golf balls, optical devices .... A third category included topics related to the equipment, primarily scanning probe microscopes, used for visualizing and manipulating nanoscale matter" (Kaplan & Vakili, 2015: 1443). These researchers' topic modeling results, which cover a wide range of topics, suggest that using full texts for topic modeling analyses may not be the best way to find particular constructs or topics related to the researchers' interest. Obtaining an excessive number of topics can cause researchers to struggle to find insights from piles of word lists.

One solution to avoiding irrelevant topics is to parse the data around text segments related to the researcher's interests (Jung, Zhou, & Smith, working paper). Therefore, I selected text within each media document that addressed restauranteurs' BMI actions by identifying keywords closely related to BMI, expanding this list of keywords with synonyms, and using these keywords and synonyms to parse public press articles.

First, I identified the representative keywords for each BMI action from the interview study. Using manual codes developed with my interview data, I looked for frequent words that

were used to explain each BMI action. I reviewed word lists based on frequency counts from the interview data and carefully selected the words associated with four BMI patterns while removing general words, such as types of food, location, and restaurant names. For instance, I found such words as *style, concept, model,* and *rebrand,* which I considered to be related to the first BMI pattern (replacing or adding new business concepts). I also identified such words as *system, costs, easier, efficient, operation, quickly,* and *simple,* which I considered indicative of the third BMI pattern (i.e., improving operational efficiency).

Second, I expanded the keywords by adding synonyms because they can be used to explain these BMI actions (Short et al., 2010). By extending the word lists, I expected to capture more discussion of the four BMI actions in the news media data. To develop synonyms, I used word2vec, which is a machine learning technique to identify words with similar meaning and to search for word pairs with similar relationships (Mikolov, Sutskever, Chen, Corrado, & Dean, 2013; Lee et al., 2020). For instance, if the word2vec algorithm repeatedly notices such patterns as "experiencing the financial challenges" and "experiencing the organizational challenges," the algorithm representing the words *financial* and *organizational* will be identified as similar. Because these words are frequently used in comparable word contexts, researchers can consider the words related.

In creating the synonym list with word2vec, I had to decide whether to develop my own customized model or to use an existing (i.e., pre-trained) model. Developing a customized word2vec model is useful when documents contain a certain language style or vocabulary (e.g., social media). I did not need this customization for this study because my news media data fit well with one of Google's pre-trained models based on a large set of news media data. Also, as found in prior studies, the Google word2vec model is generally robust across many contexts

(e.g., Khatua, Khatua, & Cambria, 2019; Teofili & Chhaya, 2019). Therefore, I searched for synonyms of keywords that represented the four BMI patterns from the first step. After I obtained the synonyms, I evaluated the word lists for their face validity with the four BMI actions. Table 5.2 presents keywords related to four BMI patterns (i.e., word2vec input) and these words' synonyms (i.e., word2vec outcome).

Once all the keywords were identified, I conducted a collocation approach to capture words only near keywords. This collocation process was used by Gephart (1997: 587), who suggested that the context-based words provide "evidence of 'meaningful linkages' among keywords in subjects' discourse as well as to establish linkages among these keywords and the concepts." Gephart (1997) selected four words on either side of his study's keywords. Following his approach and logic with my new media documents, I created a parsed set of textual material consisting of four words on either side of the keywords.

Finally, before I conducted topic modeling, I cleaned the parsed textual data using R. Using the "stopwords" package, I removed non-meaningful words (e.g., determiners, prepositions). I also transformed all parsed text into lowercase and removed all numbers and punctuation marks to obtain reliable results (Short et al., 2010). Then I used "tokenization," which splits sentences into individual words (e.g., "hello world" to "hello" and "world"). These cleaning steps are common in natural language processing and practice (Schmiedel et al., 2019).

Applying LDA Topic Modeling. After the above steps were completed, I conducted LDA topic modeling. Although the LDA topic model is an automated algorithm for extracting topics (Blei et al., 2003), researchers must decide the number of topics to generate. According to Wallach et al. (2009: 7), "Selecting the number of topics... is one of the most problematic modeling choices in finite topic modeling." The research objectives and context drive the

Table 5.2. All BMI Terms from Word2vec Process

Four Patterns of BMI Keywords (Input to word2vec)	concept, cost, costs, easier, efficiencies, efficient, expense, expenses, items, menu, menus, model, open, operation, option, price, prices, pricing, quickly, rebrand, reduce, service, simple, style, system,
Four Patterns of BMI Synonyms (Output from word2vec)	alternative, alternatives, automating, automation, better, branding, cheaper, choice, concepts, conceptually, continuous_improvement, convenient, cost_avoidances, cost_effective, costing, defrays, demand, dishes, easiest, easily, easy, economical, effective, efficiency, efficient, efficiently, eliminate_duplication, eliminate_duplications, entrees, entrees, expenditure, expenditures, expensed, fast, faster, fees, finesse, flair, full_adaptivity, goods, gradually, idea, idea, immediately, incidentals, inexpensive, instantly, item, market, market, mechanism, menuing, neater, nicer, notion, opened, opening, opens, operational_excellence, operations, optimize, optimizing, options, overexpenditures, overhead, overheads, paradigm, practical, priced, pricetag, pricier, productivities, productivity, promptly, quicker, rapidly, readily, rebranded, rebranding, rebrands, reduced, reinvent, reinvigorate, relaunch, reposition, repositioning, revamp, safer, scalability, services, simpler, simplest, simplistic, smarter, smarter, smoother, speedily, straightforward, streamline, streamline, streamlined, streamlining, styled, styles, stylings, swiftly, systems, time_savings, uncomplicated

Note: Input words were from the interview study.

decision (e.g., Giorgi et al., 2019; Schmiedel et al., 2019). Researchers may generate very general topics if the number of topics selected is too small; conversely, if too many topics are selected, the resulting set of topics is too numerous to be meaningful (Giorgi, Maoret, & Zajac, 2019; Marshall, 2013). There are no clear methods for choosing the right number of topics (Giorgi et al., 2019). To select the number of topics in this study, I conducted a log-likelihood analysis of the full dataset that I parsed. A high log-likelihood score represents a well-fitting model (e.g., Wallach et al., 2009). My analysis indicated that extracting 53 topics yielded the highest log-likelihood score. However, I acknowledge that "there is no statistical test for the optimal number of topics or for the quality of solution" (DiMaggio et al., 2013: 582). Thus, based on that score, I extracted between 40 and 60 LDA topic models to qualitatively compare their differences. I invited management researchers to review these extracted topics and discuss their interpretability. From this discussion, we settled on 53 topics because these topics had better face validity and many of the topics related to all four BMI actions.

Although I extracted 53 topics, I only used 18 topics to classify the four BMI patterns because the other topics were unrelated to the four actions. These excluded topics were interpreted as market challenges (e.g., supply chain issues, higher costs of goods, labor market), the government's response to COVID-19 (e.g., restrictions and financial support), and COVID-19 health issues (e.g., vaccinations and health care system). Table 5.3 shows how relevant topics were classified into each BMI pattern.

First, I found three topics (32, 34, and 42) related to the ideas of replacing or adding new business concepts. These topics included such words as *alternative*, *better*, *concept*, *idea*, *model*, *new*, and *system*, all of which I interpreted as changes in business concepts. Second, three topics (10, 19, and 45) were related to expanding the business's physical structure; I interpreted these

Table 5.3. LDA Topic Modeling Results and BMI Type Categorizations

Themes	Percentage of occurrences	Topics words
Replacing or adding New business concepts related topics	1.79%	Topic #32: choice, option, options, open, cost, idea, learning, alternative, system, model
	2.25%	Topic #34: menu, dishes, items, options, menus, new, choice, restaurant, include, dinner
	1.58%	Topic #42: fast, concept, new, restaurant, food, concepts, menu, restaurants, casual, better
Expanding the business's physical Structure related topics	2.01%	Topic #10: opened, open, restaurant, menu, opening, new, location, kitchen, bar, concept
	2.22%	Topic #19: open, opening, opened, new, opens, first, grand, restaurant, plans, location
	1.82%	Topic #45: opened, idea, open, style, said, week, quickly, years, opening, last
Improving operational efficiency related topics	2.09%	Topic #6: better, much, back, make, get, easier, even, can, cost, people
	1.75%	Topic #13: service, reduced, workers, hours, work, cost, system, employees, said, better
	2.17%	Topic #14: services, service, operations, automation, customers, technology, help, system, digital, systems
	2.27%	Topic #24: idea, better, easy, simple, good, one, just, choice, think, like
	2.48%	Topic #30: expenses, costs, cover, payroll, businesses, cost, help, business, rent, operating
	2.40%	Topic #39: better, quickly, said, get, fast, going, can, easy, idea, just
	1.93%	Topic #46: operations, operation, business, resume, normal, reduced, hours, immediately, businesses, continue
Implementing temporary changes related topics	1.72%	Topic #12: fees, license, businesses, liquor, late, city, permit, cost, restaurants, process
	1.83%	Topic #22: options, dining, option, services, campus, said, available, food, outdoor, new
	2.21%	Topic #35: open, service, delivery, takeout, curbside, options, pickup, restaurants, dinein, services
	2.71%	Topic #37: service, restaurants, indoor, dining, outdoor, bars, dinein, open, bar, restaurant
	1.54%	Topic #47: delivery, services, service, restaurants, online, food, fees, thirdparty, order, use

topics as opening new locations, grand openings, and commenting on opened businesses. Third, seven topics (6, 13, 14, 24, 30, 39, and 46) with such words as *better*, *cost*, *easier*, *hour*, *simple*, *operations*, *quickly*, *reduced*, and *systems* are related to improving operational efficiency. Finally, five topics (12, 22, 35, 37, and 47) contain words like *available*, *curbside*, *delivery*, *dine-in*, *dining*, *liquor*, *options*, *pickup*, *services*, and *takeout*, which from the interview study refer to implementing temporary changes.

With the categorized topics, I then analyzed the four BMI patterns over time (Croidieu & Kim, 2018), specifically how those actions varied by month from March 2020 through September 2021 and across different geographical regions. I also compared the BMI actions based on an area's political party to understand restaurants' BMI actions in response to different external environments and regulations. In sum, I determined the overall patterns of BMI actions in various regions of the United States as well as the pattern differences based on areas' political party strength (i.e., Democrats, Republicans).

CHAPTER 6

TOPIC MODELING FINDINGS

Business Model Innovations in Different Environmental Conditions

My analysis revealed that the four BMI patterns found in my interview study were also found in the topic modeling of news media across the United States. Table 6.1 shows how much each type of BMI action has been discussed in the media data over time. The monthly discussion trends about each BMI action reveal patterns of restauranteurs' BMI actions across the United States. As shown in Table 6.1, the first two BMI patterns— (1) *replacing or adding new business concepts* and (2) *expanding the business's physical structure*—were discussed more frequently over time. The patterns indicate that restauranteurs have been gradually engaging in these BMI actions over time. However, BMI actions related to (3) *improving operational efficiency* remained stable and were frequently discussed at a higher level, whereas discussions about BMI actions associated with (4) *implementing temporary changes* declined over time. These patterns suggest that restaurateurs actively modified internal processes throughout the pandemic, whereas the addition of new services and products occurred more at certain times of the pandemic. Overall patterns, however, may be presented differently in different regions due to environmental differences. Thus, I examined the discussion patterns of four BMI patterns in different regions and with political party strengths to understand how different environments relate to these BMI actions.

Replacing or Adding New Business Concepts. An article from *Crain's Chicago Business*, a weekly business newspaper, stated, "The sudden closure is also a reminder that a well-diversified business with different concepts, market segments and locations is better suited to handle an economic downturn" (Barker, 2020). Some restauranteurs believed that having new concepts helped them survive during the pandemic.

Table 6.1. Discussion Proportions of BMI in the United States

Time	(1) Replacing or adding new business concepts	(2) Expanding the business's physical structure	(3) Improving operational efficiency	(4) Implementing temporary changes
2020-03	3.78%	3.78%	14.10%	14.25%
2020-04	4.38%	4.00%	15.22%	10.35%
2020-05	4.21%	4.51%	13.82%	9.90%
2020-06	5.08%	5.62%	14.17%	10.43%
2020-07	5.21%	5.92%	15.03%	9.84%
2020-08	6.79%	6.90%	15.48%	9.63%
2020-09	6.58%	7.50%	14.81%	10.31%
2020-10	6.29%	6.77%	15.65%	11.19%
2020-11	6.23%	5.93%	13.84%	11.55%
2020-12	5.59%	5.44%	15.14%	11.84%
2021-01	5.50%	7.03%	15.70%	10.14%
2021-02	7.20%	6.74%	16.52%	8.91%
2021-03	5.71%	6.67%	15.26%	7.93%
2021-04	6.05%	7.53%	16.53%	7.80%
2021-05	6.22%	7.23%	16.26%	6.95%
2021-06	6.51%	7.60%	15.67%	7.62%
2021-07	6.64%	8.69%	16.23%	7.43%
2021-08	6.61%	7.53%	14.06%	7.03%
2021-09	7.85%	8.64%	17.45%	7.59%

Note: These numbers represent the proportions of topics discussed in documents each month.

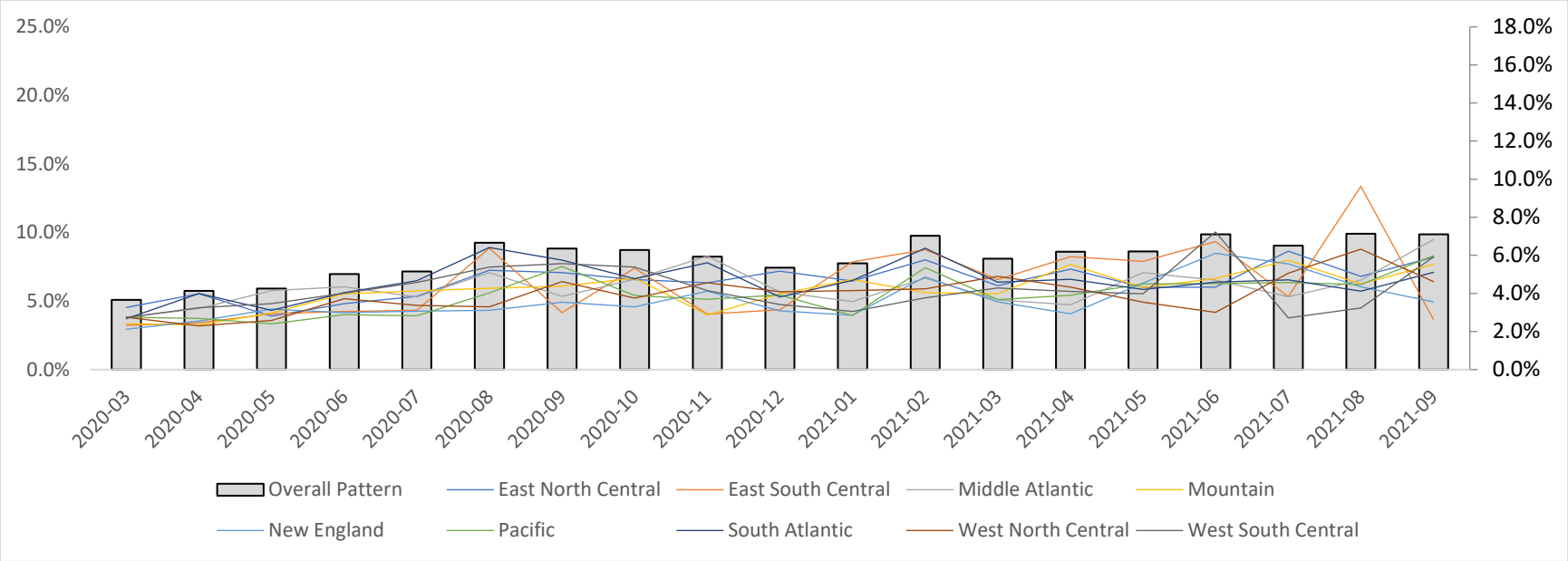
For instance, one restaurant owner in North Dakota closed a previous restaurant and opened a new concept BBQ restaurant in August 2020. The *Grand Forks Herald*, a daily newspaper in Northeast North Dakota, detailed this restaurant owners' story during the pandemic:

> After a short time of being open, the business [a restaurant] closed at the end of April when the coronavirus pandemic shuttered stores in the mall and everywhere else. Not ready to give up, the partners came up with a new concept, Bigfoot BBQ, and ran a food truck for two weeks before finding a permanent location. (Kurtz, 2020)

BBQ restaurant owners in Florida extended their restaurant concept into a dual concept as a bar and restaurant in March 2021. The *Tampa Bay Times* in Florida reported on the restaurant's BMI actions:

> The new concept is essentially a rebranding of the second floor bar at the popular barbecue restaurant. The idea for the new 'sub-concept,' bar - hatched by Dr. BBQ and Datz Restaurant Group co-owners … was to bring some of the tiki cocktail culture they'd discovered in other cities closer to home … Last year, shortly before the pandemic, the couple had plans to open a stand-alone tiki bar. But as restaurateurs, they felt a little unsure of getting into the bar business. And once Covid-19 caused the widespread shutter of bars and nightclubs for several months, the Perrys [the restaurant owners] said that they were happy they waited ... 'This is actually not a new idea for us—to use one space for more than one concept,' Suzanne Perry said. (Freund, 2020)

Figure 6.1 shows the amount of discussion about the first set of BMI actions based on the news media data. I discuss the patterns of the BMI action across the U.S. and different regions below.



Note: The left Y-axis reflects the values for the line chart (BMI discussion in each region), while the right Y-axis indicates the values for the bar chart (BMI discussion in the United States).

Figure 6.1. Patterns of Replacing or Adding New Business Concepts, U.S. Regions

Based on the Figure 6.1, these restauranteurs' BMI actions in different locations were similar to some of the restauranteurs in my interview study. I analyzed how much the media discussed the BMI action (i.e., the proportion of discussion) in nine regions and across the United States. The discussion was relatively low—with the average discussion proportion being 5.61 percent, compared to the other three BMI actions. The proportion may result from more restauranteurs using threat sensemaking frames rather than opportunity sensemaking frames. Also, replacing or adding new business concepts are the most aggressive BMI actions that I identified, which not many restauranteurs may be capable of or willing to do. In addition, the pattern of discussion increased slightly over time but generally remained stable across regions. Regional differences in the BMI discussion were small, but I noticed that the Southern United States (e.g., the South Atlantic, East South Central, and West South Central regions) discussed the topics more than other regions during the pandemic. Since these states had weaker restrictions (Goodkind, 2020), changing the concepts or expanding business with a new concept during the pandemic may be easier and less risky for restauranteurs in the Southern United States compared to other regions.

In addition, the overall patterns were similar to the interview study's findings because only a few restauranteurs substantially changed their business concepts. The restaurants in my interview study also took actions that emerged at various times, rather than happening earlier or later in the pandemic; two restauranteurs (Traveler and Big Shoulder) acted early in the pandemic, while the other two (Food Network and Rebel) acted later.

Expanding the Business's Physical Structure. According to the news media data, some restauranteurs moved to a larger location to offer new services. For instance, in August 2020,

The *St. Louis Post-Dispatch* in Missouri reported on a restauranteur who relocated to a larger space to offer new services:

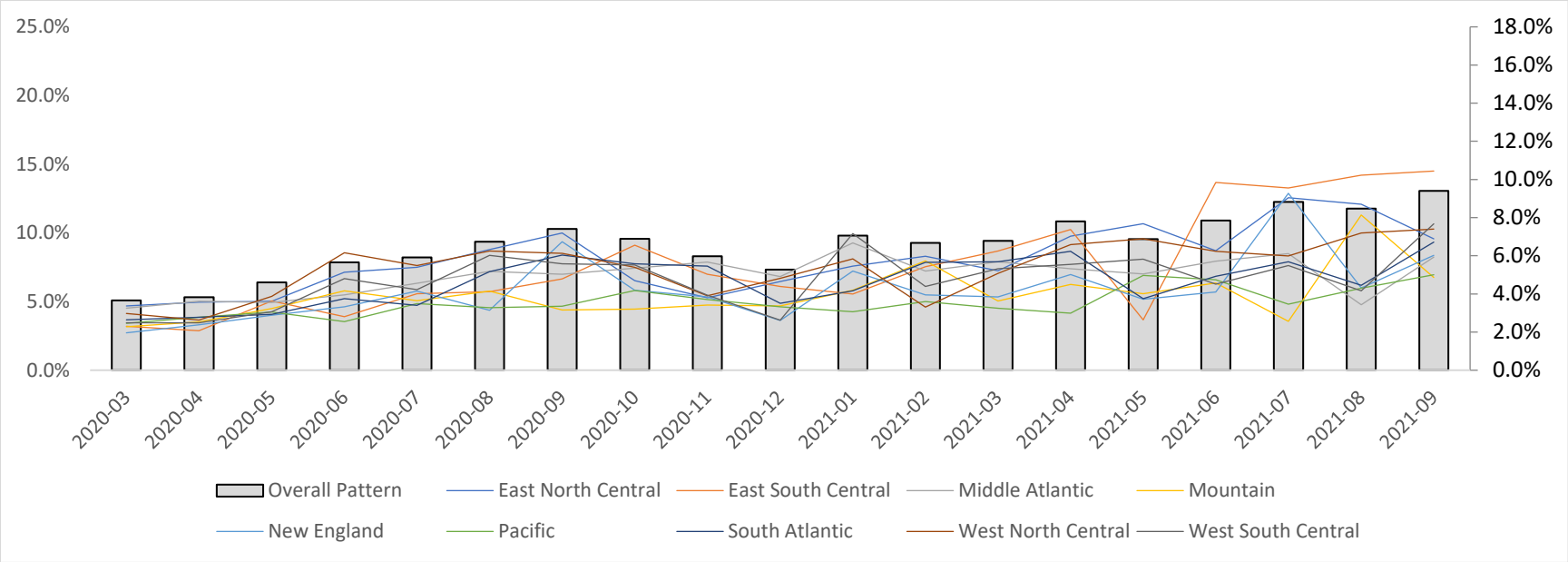
> West End Bistro is moving to bigger digs in the same neighborhood…. The size of the space at 255 Union (about 7,000 square feet) is a prime reason for the move, Green says. … In addition to rooms for private parties, the new location also features patio seating. Green says he also wants to put a pool table and dartboard inside the new location. The New West End Bistro will feature the same menu as the original, … with a few additions …. (Froeb, 2020)

Moreover, after the restrictions were lifted, an increasing number of businesses opened. Texas A&M University's student newspaper, the *Battalion*, introduced business conditions in a Texas community and explained,

> As COVID-19 restrictions lift and the economy rebounds …, business owners said they are optimistic about reopening this year. Vacant locations are being backfilled by new restaurants … the city's economic development coordinator, said, … we're getting calls saying, 'We're interested; we're ready.' The popular Dutch Bros. Coffee is opening at least three other locations in the city after seeing great success on Wellborn Road. (Varnell, 2021)

Figure 6.2 shows the amount of discussion about the second set of BMI actions based on the news media data. I discuss the patterns of the BMI action below.

Discussion about expanding was initially low but increased over time, except during the winter season. This pattern was related to my interview study's findings because many restauranteurs expanded their restaurants' physical structures later in the pandemic. For instance, Meditation relocated to a new site early in the pandemic, but Beaver Dam and Musician opened



Note: The left Y-axis reflects the values for the line chart (BMI discussion in each region), while the right Y-axis indicates the values for the bar chart (BMI discussion in the United States).

Figure 6.2. Patterns of Expanding the Business's Physical Structure, U.S. Regions

new restaurants later. Therefore, more restauranteurs invested in growing their business later in the pandemic, perhaps in conjunction with PPP loans. In addition, the winter is generally a slow season in the restaurant industry; thus, discussion about this BMI action also decreased during the winter (November and December 2020). However, when most restrictions in many regions were lifted after May and June 2021, there was more discussion about the BMI actions across all U.S. news media. The East South Central region, in particular discussed more of the topics compared to any other regions after June 2020.

Improving Operational Efficiency. The operational efficiency BMI actions discussed by the media were similar to the actions taken by the restauranteurs in the improving operational efficiency pattern. For instance, big restaurant chains changed building designs and their operations. The *Cable News Network* (CNN) introduced these practices and explained,

> Taco Bell is cutting back on dining room seating and adding a second drive-thru lane dedicated to pick-up orders made on its app. The design, unveiled in August, also includes adding curbside pick-up for contactless pickups and 'bellhops'—masked employees stationed outside taking customers' orders on digital tablets…. [The] Owner [of] Yum! Brands said that demand for its drive-thru 'skyrocketed' during its most recent quarter. (Valinsky, 2020)

Also, others attempted to reduce operating costs by furloughing employees and temporarily closing because of the restrictions and cold winter weather. An article from the *Wisconsin State Journal* in Madison, Wisconsin, introduced local restaurants' actions in reducing costs:

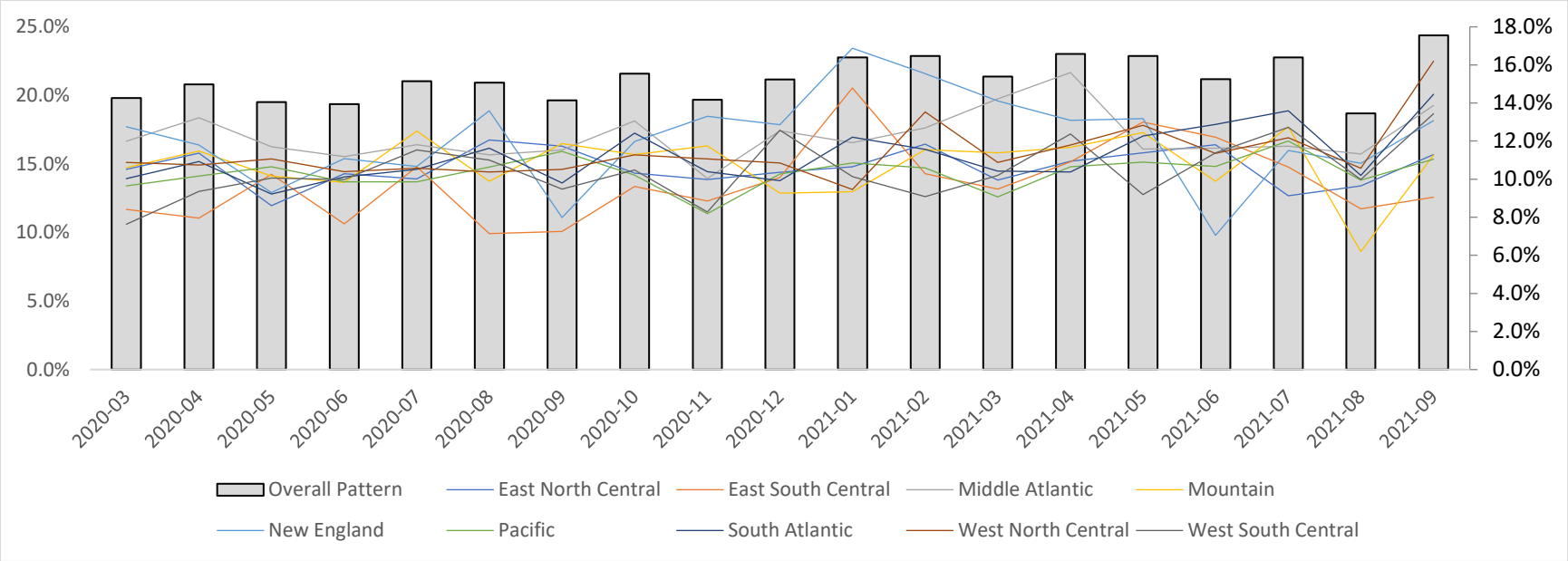
> Johnny Delmonico's and The Avenue Club temporarily closed as of Oct. 30 .... With a city-county mandated limit on indoor dining at 25% capacity, and fewer customers opting to eat inside, sales haven't been covering expenses at those locations .... On March 17,

> Gov. Tony Evers's administration ordered bars and restaurants to close and banned gatherings of 10 or more…. Food Fight restaurants furloughed close to 700 …. When the stay-at-home orders were eased somewhat, Food Fight restaurants brought back or hired 650 employees …. But, once the outdoor dining season ended …, Food Fight restaurants now employ about 425. (Derby, 2020)

Figure 6.3 shows the amount of discussion about improving operational efficiency—across the United States and in different regions.

Operational efficiency discussions were relatively stable across the United States. Compared to other patterns of BMI, the discussion levels were higher—the average proportion of discussions was 15.29 percent—because of operational changes and alignments required by any type of BMI action (e.g., changing concepts, expanding businesses, enhancing operations, offering new services). The topic modeling findings are consistent with the case study findings because many restauranteurs may use threat sensemaking frames, and reduce operational costs by furloughing employees and reducing services/business hours due to reduced dine-in customers during the pandemic. However, with increasing customer demand for to-go, curbside, and delivery services, restauranteurs may be focusing on improving operational efficiency with a smaller number of employees. Thus, entrepreneurs' business operations were continually altered to respond to challenges introduced by their environments or organizations. Although operational efficiency discussion levels varied in some regions over time, most regions maintained similar levels.

However, during the winter the New England and Middle Atlantic regions discussed these topics more heavily than other regions (November 2020 to April 2021). COVID-19 was spreading rapidly in the United States in late 2020, and states in these two regions responded to a



Note: The left Y-axis reflects the values for the line chart (BMI discussion in each region), while the right Y-axis indicates the values for the bar chart (BMI discussion in the United States).

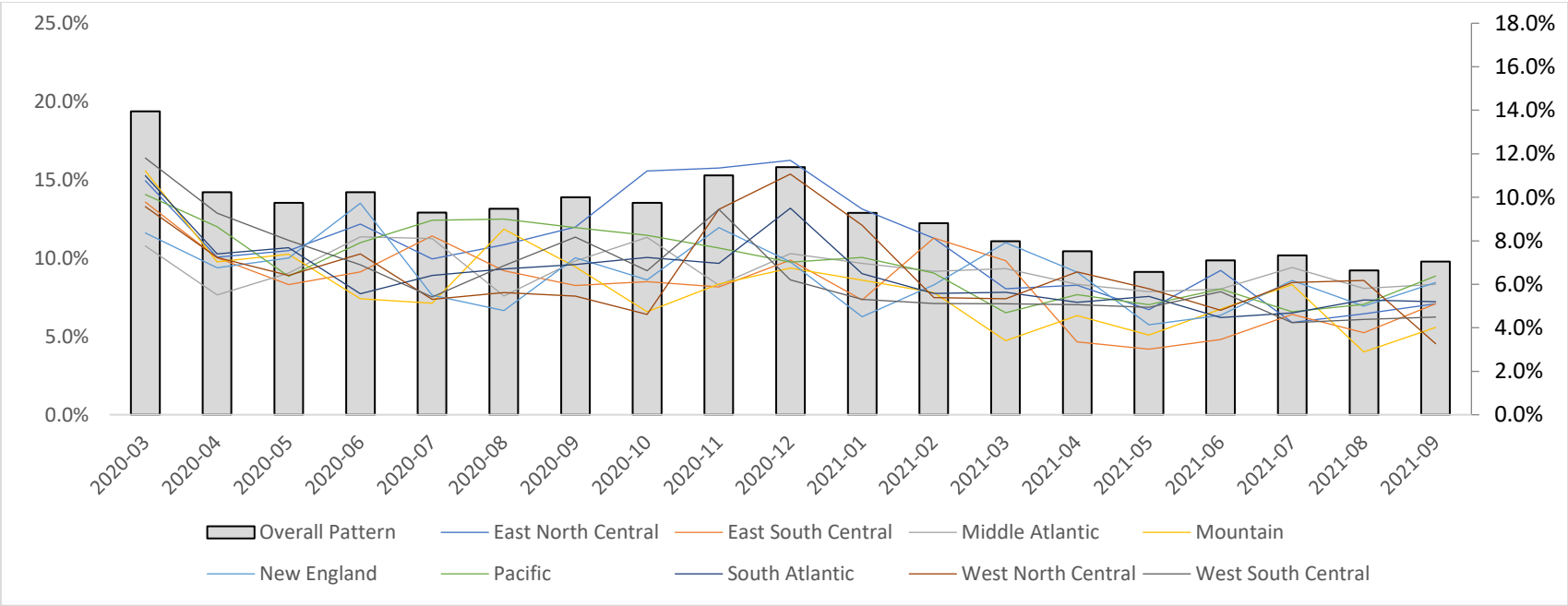
Figure 6.3. Patterns of Improving Operational Efficiency, U.S. Regions

higher level of restrictions than other states in different regions—for example, Rhode Island restaurants closed November 30 to December 13, 2020, and indoor dining was reduced to 33 percent; Massachusetts implemented a 25 percent capacity limit; and New York, Maine, and Massachusetts restaurants had to close from 9:00 p.m. to 10:00 p.m. (Blumenthal, 2020; Hauck & Woodyard, 2020). Also, because winter weather in these areas can be colder than in other regions, operating outdoor dining can be challenging (Miller, Hauck, & Tyko, 2020). Thus, restauranteurs in the colder regions faced additional operational challenges.

Implementing Temporary Changes. The news media also discussed implementing temporary changes. For instance, a restauranteur in Washington state changed menu items for to-go business early in the pandemic. A news article from the *Skagit Valley Herald* stated,

> As a farm-to-table restaurant, Seeds Bistro & Bar in La Conner usually features lots of seasonal dishes and fresh produce on its menu. Nowadays … [the] owner… said she has to tell them [customers] those dishes are no longer available. Instead, the restaurant is offering macaroni and cheese, sandwiches, fish and chips, burgers, soups, a wedge salad —a take-out friendly menu with reduced prices. (Allison, 2020)

Also, in a *Bakersfield Californian* news article, a California restauranteur stated, "The constant change in how restaurants operate is frustrating … because of the pandemic, [his] restaurant has put more emphasis on improving its takeout service, including expanding family meal options, advertising specials on Facebook" (Shepard, 2020). Thus, many restauranteurs in different regions also promoted new services and changed menu items in reaction to COVID-19. Figure 6.4 shows the amount of discussion about implementing temporary changes across different U.S. regions.



Note: The left Y-axis reflects the values for the line chart (BMI discussion in each region), while the right Y-axis indicates the values for the bar chart (BMI discussion in the United States).

Figure 6.4. Patterns of Implementing Temporary Changes, U.S. Regions

In contrast to expanding the business's physical structure, where the discussion increased over time, here there was a great deal of discussion at the beginning of the pandemic and during the winter of 2020, but it then dwindled over time. As in my case study, many restauranteurs actively added new services regardless of their major BMI actions. For instance, many restauranteurs added delivery services (in-house or third party) early in the pandemic; however, many subsequently dropped these services because concerns about food quality and their steep costs emerged. Thus, many restauranteurs experimented with various services and products—such as offering family-style meals—to deal with the pandemic early on, but they dropped them later in the pandemic. COVID-19 threats decreased after vaccines were introduced (March and April of 2021) and restrictions were lifted (May and June of 2021), giving restauranteurs fewer reasons to add new services.

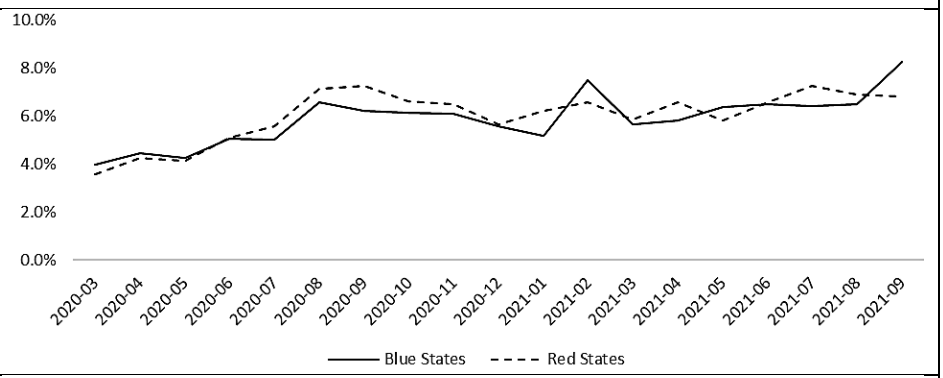
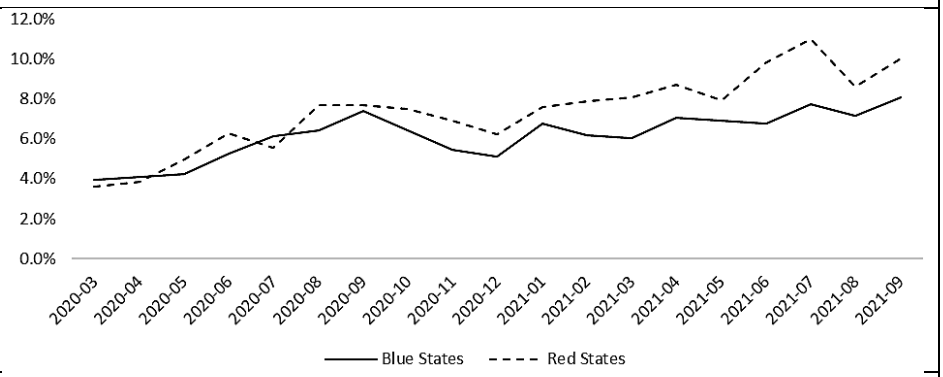
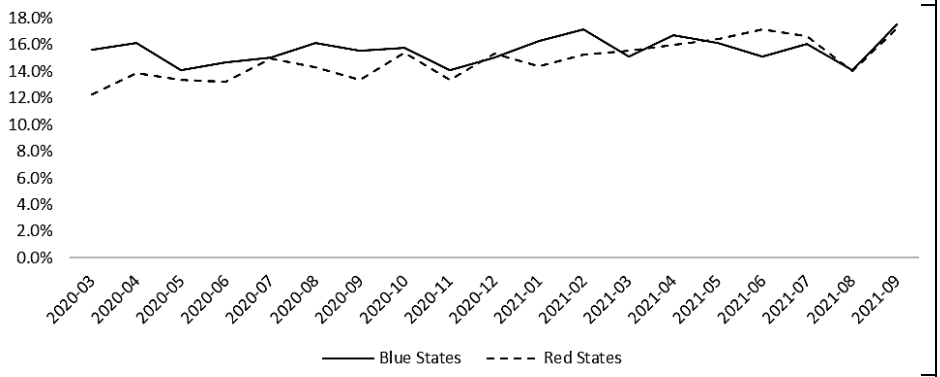
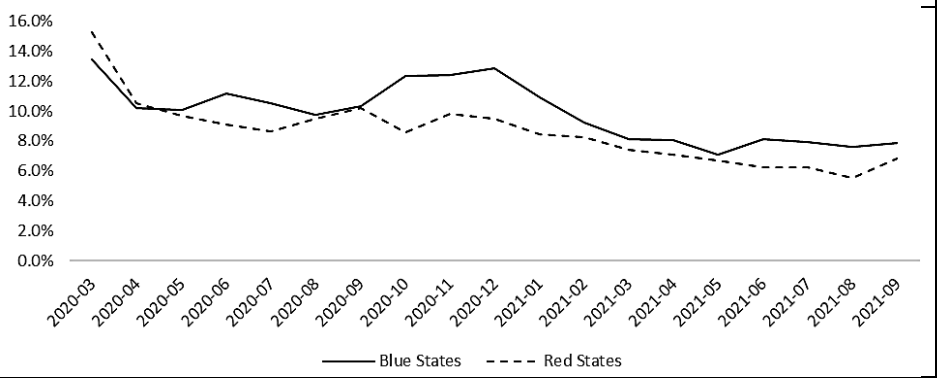
In addition, outdoor dining was considered a safer option due to better air circulation, but offering the service was hard for restauranteurs in some regions due to the cold weather. To make up for lost sales, restaurant owners introduced more new services during the winter months. According to Figure 6.4, the East and West North Central regions had more discussion about implementing temporary changes. Furthermore, due to the rapid spread of COVID-19 during the winter, these regions experienced greater restrictions (e.g., 25 percent capacity limit, reduced business hours) than other regions during the winter (Hauck & Woodyard, 2020).

In summary, the discussions about each BMI approach in different regions are similar to the single-city interview study's findings. Some BMI actions fluctuated as environmental conditions changed based on region and time of year, while other BMI actions were more stable regardless of those conditions. In particular, I noticed that different restriction levels appeared closely related to restauranteurs' BMI actions. Since the COVID-19 restrictions differed

depending on each state's political party strength (i.e., Democrats, Republicans), and the restrictions directly affected the restaurant industry's business operations (Bartik et al., 2020; Grossman, Kim, Rexer, & Thirumurthy, 2020; Gursoy & Chi, 2020). Next, I examine the relationship between four BMI actions and each state's political orientation.

Different Levels of BMI Actions Based on Political Party Strength. The differences in political parties' strength created different restrictions in the restaurant industry during the pandemic (Armstrong 2020; Goodkind, 2020). Generally, blue states had tougher restrictions than red states, and various restrictions (e.g., no dine-in, capacity limitations) were among the main challenges, and reasons for business model changes (Brizek, Frash, McLeod, & Patience, 2021; Norris et al., 2021). I conducted my comparative case study in a red state where the COVID-19 restrictions were less severe for restauranteurs than in blue states, in general. Figure 6.5 shows the news media's amount of discussion about four BMI patterns in both blue and red states. Also, Table 6.2 shows the average discussion proportions of each BMI action based on the political party strength in different states.

As shown in Figure 6.5 and Table 6.2, I found that replacing or adding new business concepts were similarly discussed in both blue states (5.63 percent) and red states (5.57 percent) overall. However, the frequency with which the other three BMI actions were discussed varied between red and blue states. Red states discussed more topics related to expanding the business's physical structure, especially later in the pandemic. In contrast, BMI actions related to improving operational efficiency and implementing temporary changes were discussed more in blue states. These findings could imply that restauranteurs in red states viewed situations through more of an opportunity lens than those in blue states. Restauranteurs in blue states, on the other hand, who faced more restrictions, employed a threat lens more.

BMI Patterns	Patterns in Blue and Red States
Replacing or adding new business concepts	
Expanding the business's physical structure	
Improving operational efficiency	
Implementing temporary changes	

Note: Based on the 2020 presidential election, each state was classified as either blue or red.

Figure 6.5. BMI Discussion Patterns in Blue and Red States

Table 6.2. Mean discussion proportions of BMI actions in Blue and Red States

BMI Pattern	Number of topics	Average % of occurrences	Average % of occurrences by political party strength		*t (df) = t-statistic*	Effect size (Cohen's d)
			Blue states (Democrats)	Red states (Republican)		
Replacing or adding new business concepts	3	5.61	5.63	5.57	*t* (36,590) = -0.48	-0.01
Expanding the business's physical structure	3	6.07	5.84***	6.50***	*t* (36,590) = 5.29	0.06
Improving operational efficiency	7	15.08	15.46***	14.35***	*t* (36,590) = -6.27	-0.07
Implementing temporary changes	5	10.02	10.32***	9.43***	*t* (36,590) = -5.81	-0.06

Note: *** $p < 0.001$ (two-sample t-test).

However, as Table 6.2 shows, the effect sizes (Cohen's d) of these differences were small (Cohen's d < 0.2). Thus, the differences may not be meaningful; even if they are statistically significant, and I conclude that these four BMI actions appeared across the United States rather than in a certain region or state. Therefore, the findings of my comparative case study were generalizable in various locations.

In conclusion, my topic modeling study confirmed the four BMI patterns. Based on my analysis, I found that different BMI actions emerged as environmental conditions evolved. Three BMI actions (i.e., replacing or adding new business concepts; expanding the business's physical structure; and improving operational efficiency) were continually or gradually discussed among restauranteurs over time, while the fourth BMI action (i.e., implementing temporary changes) was discussed more at certain times but decreased over time during the pandemic. The results indicate that not all BMI actions are long-term or permanent changes for their businesses. Some BMI actions may only be used as temporary tactics.

Moreover, BMI actions may be connected to environmental changes—some environmental condition differences (e.g., restrictions) can either strengthen or weaken restauranteurs' involvement in certain BMI patterns. However, from the analysis with the political party strength, I found that BMI discussions had no differences or had only small effects (i.e., minimal and practically insignificant differences) based on the political environment. Therefore, I found entrepreneurs' BMI actions cannot be explained by environmental differences alone. In the following section, I will summarize my findings and discuss contributions.

CHAPTER 7

DISCUSSION

From my interviews, I found that business model innovation (BMI) is a continuous process and that multiple BMI actions can emerge and disappear over time based on entrepreneurs' sensemaking processes. My model (See Figure 4.1) shows that entrepreneurs' sensemaking processes begin with noticing cues from various environmental and organizational factors, and entrepreneurs apply either an opportunity or threat sensemaking frame to interpret them, resulting taking different BMI actions based on these interpretations. Their BMI changes then create new organizational cues for the next round of sensemaking, which is often stimulated by changing environmental cues. Thus, the framework answers the following questions: (1) *What are decision-makers' business model innovations (BMI) in response to the COVID-19 crisis and (2) how and why have their BMIs unfolded differently over time given the same exogenous change?*

Prior BMI studies using rational, evolutionary, and cognitive lenses have provided important insights about entrepreneurs' BMI actions, such as identifying key environmental or organizational factors that influence entrepreneurs' BMIs, the process of creating and developing business models, and how they find suitable business models. However, they do not explain how and why different BMIs emerge in response to the same environmental changes. BMI researchers have attempted to understand BMI actions as the result of specific causes, such as environmental changes (e.g., Amit & Zott, 2001; Osiyevskyy & Dewald, 2015; Saebi et al., 2017); market underperformance (e.g., Aspara et al., 2013; Sosna et al., 2010); or decision-makers' cognition, such as knowledge, thinking style, and different decision making approaches (i.e., centralized or de-centralized) (Martins et al., 2015; Snihur & Zott, 2020). However, these

studies have presented a simple one-way process model without explaining how a firm's new business models continue to change as a function of prior changes.

For instance, using the rational lens, Zott and Amit (2015) drew linear and static connections between antecedents (i.e., environmental constraints) and new business model outcomes (i.e., novel BMIs). McDonald and Eisenhardt (2020) proposed an evolutionary lens framework called *parallel play* (i.e., a child plays independently near others but often mimics them), which explains a firm’s borrowing a business model idea from others, testing it, and pausing to adjust before applying the model to the firm. Martins and colleagues (2015) employed the cognitive lens and explained how entrepreneurs adapt other firms' business models to change their own. They proposed that entrepreneurs identify differences in business models, decide which elements of the business models to apply, and integrate the elements into their existing business models (Martins et al., 2015).

However, these studies simplified the three lenses' causes and processes; examined processes and provided sources for potential BMI actions while still emphasizing the outcomes of BMI actions; and provided limited explanations from a longitudinal perspective. I found that prior process studies employing these lenses are limited to explaining varying BMI actions during a crisis where the different firms experienced similar environmental conditions. Specifically, these models could not explain why some entrepreneurs take radical and incremental BMI actions, permanent and temporary BMI actions, or do not engage in BMI at all.

Theoretical Contributions: Understanding BMI Processes through a Sensemaking Frame

BMI as sensemaking. My dissertation extends BMI research by introducing different BMI patterns and dynamic BMI processes using a sensemaking frame, which has received little attention in the BMI literature. First, I highlight how entrepreneurs' interpretations of an overall

situation with an opportunity frame, a threat frame, or engaging in only low-level sensemaking result in varying BMI actions over time. Some BMI researchers noted that prior BMI research focused on the performance implications of using BMI rather than understanding the causes or antecedents leading to BMI's emergence (Foss & Saebi, 2017; Snihur & Zott, 2020). These researchers called for more studies to understand different factors causing BMI actions. Although I agree that understanding various factors related to entrepreneurs' BMI decisions and actions is an important area that BMI research has not actively explored, examining certain factors (e.g., exogenous changes, organizational challenges, and business-model knowledge) may be insufficient to comprehend the big picture of the BMI process.

External and organizational factors may generate new information that entrepreneurs interpret; however, how they interpret the cues and what influences why they use a particular frame may be the main drivers of BMI actions, rather than the information itself. Because decision-makers "often rely on subtle perceptions (e.g., opportunity and threat)" (Osiyevskyy & Dewald, 2015: 72), the perceptions can result in different interpretations of the same environmental and organizational conditions. For instance, entrepreneurs may face a variety of external environmental and internal organizational cues during a crisis, including regulatory changes, supply chain problems, new customer needs, employees' reactions, and sales channel losses. Whether they interpret these challenges as a threat (e.g., lost access to key ingredients, or a revenue stream they will have to replace) or an opportunity (e.g., the chance to innovate and employ new inputs or techniques; experiment with a new sales channel) will affect the BMI actions they take.

Further, my study also suggested that entrepreneurs do not necessarily employ the same sensemaking frame over time; they may switch from a threat to an opportunity frame, or vice

versa. Noticing and updating all the information creates also challenges for entrepreneurs focusing on a specific factor (Christianson & Barton, 2020); therefore, they may make sense of multiple cues rather than just paying attention to certain areas. Of course, certain factors can receive more attention than others, but many (if not all) elements can be uniquely formed or arranged into configurations (Fiss, 2007; Furnari et al., 2021) that entrepreneurs can interpret in multiple ways. Thus, an analysis of different BMI actions based on certain factors misses dynamic explanations; consequently, I suggest that BMI researchers should further understand how entrepreneurs perceive and interpret cue configurations to explore BMI.

Duration of BMI actions. I found that some BMIs become a long-term piece of organizations' routines, while others only last for a short time. Previous studies have presented different perspectives on business models' persistence. For example, Doz and Kosonen (2010) argued that business models are inherently stable and difficult to change due to embedded organizational routines, various contracts, and collective understandings of a firm (e.g., governance, value creation, structure) among stakeholders. However, other BMI researchers argue that a firm's business model is constantly changing to avoid competitors who replicate that firm's BMIs (Zott & Amit, 2015; Snihur, Zott, & Amit, 2021). My study suggests both permanent and temporary BMIs are employed, and explains when and why entrepreneurs employ various types and levels of BMI actions.

Some BMIs are closely related to core values or strategies that are difficult to change, whereas others are used as short-term tactics. For instance, as the business environment normalized, some restauranteurs discontinued new services and products because they were used as short-term survival tactics, whereas others who expanded physical structures and changed business concepts stuck with the changes because either they were aligned with core values that

would have been costly to reverse, or the restauranteurs realized the "temporary" changes generated profitable new revenue streams and made them permanent.

Furthermore, my findings regarding the temporal aspects of BMI actions revealed insights that differed from the previous BMI literature because many of these short-term tactics resulted from using existing industry "templates" (Amit & Zott, 2015). Amit and Zott (2015: 339) stated, "A business model designer can draw inspiration (i.e., borrow) by observing existing firms, or ways of organizing activities and exchanges, and by talking to investors, mentors, or colleagues who might be able to offer advice." During the pandemic, restauranteurs actively used available business model templates (e.g., to-go services, new menu items, online orders, and third-party deliveries) (Norris et al., 2021). Although many BMI researchers argued that entrepreneurs could develop effective business models by adapting templates (i.e., copying other firms' business models) (e.g., Martins et al., 2015; McDonald & Eisenhardt, 2020; Zott & Amit, 2015), I found that adapting the templates often resulted in their being easily removed from businesses when environmental and organizational conditions changed.

The differences in results could be due to differences in contexts. Because environmental and organizational conditions change quickly during a crisis (e.g., Smart & Vertinsky, 1984; Wan & Yiu, 2009), modifying an existing template by "pausing"—that is, stopping to customize it so that it is suitable for their existing business models (McDonald & Eisenhardt, 2020)—can be difficult. Therefore, profound considerations about templates and existing business models may be required to integrate them for long-term BMI (Amit & Zott, 2015), whereas using templates with shallow considerations about their existing business models or concepts may result in using templates as short-term tactics.

BMI as an ongoing process. Third, a firm's initial BMI action is not the end of a BMI process; rather, it can be a new starting point for another round of BMI. Organizational changes occur because a new business model is introduced, and environmental factors change constantly. These changes create new information by changing the interactions among environmental and organizational cues, creating new consequences, and forcing entrepreneurs to engage in a new sensemaking process. As a result of these changed cues, entrepreneurs' interpretive frames, as well as their BMI actions, can shift over time; and entrepreneurs' BMI actions can be re-innovated, reorganized, and removed at some point, regardless of how well-developed and well-thought-out new business models are.

As BMI researchers have argued, scholars have not fully explored how the BMI process evolves over time (Amit & Zott, 2015; Berends et al., 2016). For instance, although some BMI studies investigated the relationships between entrepreneurs' BMI actions and their interpretation of environmental changes as opportunities or threats (e.g., Kim & Min, 2015; Osiyevskyy & Dewald, 2015), these studies did not fully recognize the mechanism of interpretation shifts, detailed differences in organizational conditions, and the outcomes of changes in entrepreneurs' BMI actions. Also, many other studies discussed how entrepreneurs engage in the BMI process over time, but their explanations either ended after BMI actions were taken (e.g., Bohnsack et al., 2014; Frankenberger et al., 2013) or concluded broadly as a fine-tuning process after BMI (e.g., Demil & Lecocq, 2010; McGrath, 2010; Sjödin et al., 2020). In contrast, my dissertation offers insights into how the BMI process evolves over time. Entrepreneurs' BMI is an ongoing process, rather than an outcome; this process is episodic and dynamic, rather than static and cross-sectional; and it can yield both long-term and short-term innovations.

Factors inhibiting sensemaking. My dissertation also contributes to BMI research by identifying factors that inhibit entrepreneurs' beginning the sensemaking process during a crisis—that is, by explaining why entrepreneurs may not engage in sensemaking that leads to BMI during a crisis. I found that organizational, personal, and emotional factors can inhibit entrepreneurs' initiating sensemaking, leading them to no BMI during a crisis. Prior sensemaking researchers discussed how sensemaking occurs after an unexpected event (e.g., Meyer, 1982), when environmental changes are perceived (e.g., Milliken, 1990), and when one's identity is not confirmed (e.g., Pratt, Rockmann, & Kaufmann, 2006). Thus, these researchers argue that "sensemaking begins when people experience a violation of their expectations, or when they encounter an ambiguous event or issue that is of some significance to them" (Maitlis & Christianson, 2014: 77). However, not all individuals who experience these events necessarily engage in sensemaking. These sensemaking studies offer limited explanations for why some people make sense during a crisis while others do not (Christianson & Barton, 2020). Based on my study, certain organizational, personal, and emotional factors can delay or completely inhibit entrepreneurs' starting the sensemaking process.

For example, organizational conditions, especially slack financial resources, can delay the sensemaking process. Slack resources are often considered a cushion that allows a firm to adapt to external or organizational challenges, and firms can use slack resources to better perform in a crisis by taking risks and seeking solutions (Bourgeois, 1981; Cyert & March, 1963; Wan & Yiu, 2009). This finding is consistent with my findings. However, having slack resources also allows entrepreneurs to step back and wait as a crisis unfolds, rather than actively responding to a crisis; that is, at least until they begin to run out of slack resources, and are forced to take action. Thus, my study showed that slack resources can lead to actively engaging

in sensemaking using an opportunity frame, or doing nothing at all until uncertainty is reduced, or the crisis ends.

Personal interests can also inhibit initiating the sensemaking process. Personal interests that are unrelated to taking innovative actions in response to a crisis may lead entrepreneurs to avoid engaging in sensemaking because taking an innovative action is a choice (Ford, 1996; Shin, Yuan, & Zhou, 2017). I found that some restauranteurs were more interested in personal issues (e.g., retirement, relationships with customers or employees) than in adapting their businesses during the pandemic. They felt little urgency to change and took no BMI actions.

Finally, entrepreneurs' emotional fatigue can inhibit starting another round of sensemaking. Prolonged innovative actions to manage and change organizations amid a crisis can be extremely stressful. Thus, entrepreneurs may tire of constantly updating cues, sensemaking, and taking actions. I found that some entrepreneurs who were actively and heavily involved in BMI early on decided not to pursue any further changes over the course of my study because they were simply exhausted and overwhelmed with implementing the changes they had made thus far. They thus abandoned, or indefinitely delayed additional innovations to concentrate on digesting the innovations they had already implemented.

Methodological Contribution

My dissertation also makes methodological contributions. I combined both the multiple case study (Eisenhardt, 1989, 2021) and Langley's (1999) process study approaches to understand entrepreneurs' BMI actions during the pandemic. Using these qualitative approaches provided me a clear understanding of BMI actions and patterns that emerged in my data. I then used LDA topic modeling, which fit well with my qualitative study because both approaches identify historical patterns (e.g., Croidieu & Kim, 2018; Langley, 1999), to confirm my findings

using a nationally representative body of textual data. Qualitative approaches can identify patterns by focusing on specific firms, industries, and locations; topic modeling can capture patterns in a larger context and identify similarities or differences in patterns, enhancing the trustworthiness of my initial findings. Thus, my mixed-method approach (i.e., qualitative and topic modeling studies) can help attain generalizability by analyzing a small number of organizations and comparing them to a larger context. Therefore, using a mixed-method of qualitative and topic modeling approaches can increase confidence in the findings.

Avenues for Future Research

Applying a sensemaking frame to BMI provides opportunities for future research. First, quantitative studies can test the relationship between four patterns of BMI actions—replacing or adding new business concepts, expanding a business's physical structure, improving operational efficiency, and implementing temporary changes—and organizational performances during or after a crisis. By looking at these patterns, future researchers can identify the most effective BMI actions that create more value for firms.

Second, entrepreneurs' BMI sensemaking process can influence other stakeholders' sensemaking processes, which is known as *sensegiving* (e.g., Gioia & Chittipeddi, 1991; Maitlis & Lawrence, 2007). Because these two theoretical concepts (i.e., sensemaking and sensegiving) are considered complementary and mutual processes (Rouleau, 2005), BMI researchers can investigate how others—such as employees, customers, and business partners—interpret entrepreneurs' BMI actions and what consequences this has for future BMI actions.

Third, my research focused on the restaurant industry in the United States, where the government's financial support (e.g., PPP, EIDL, and the Restaurant Revitalization Fund) to businesses was more generous than in other countries. These funds were extremely helpful to

most of the restauranteurs I interviewed. Without this support, entrepreneurs might have been more likely to employ a threat sensemaking frame, and taken alternative routes to engage in BMI—such as fewer business concept changes and business expansions but more operational and service changes—because changing business concepts and expanding business require more financial resources. Thus, understanding resource availability's impact on BMI actions can be further developed by studying different contexts.

Fourth, BMI researchers can also further investigate what factors inhibit sensemaking that can lead to BMI. Prior studies suggested that entrepreneurs may engage in sensemaking in response to environmental changes, uncertainty, and disruptive experiences in organizational routines, identity, and strategic goals (e.g., Balogun & Johnson, 2004; Corley & Gioia, 2004; Weick, 2005). However, I found that other factors (e.g., resource availability, personal interests, and sensemaking fatigue) inhibit engaging in sensemaking that leads to BMI. Thus, engaging in sensemaking may not always begin with one's experiences with environmental or organizational disruptions. BMI researchers can continue to explore factors that stimulate or inhibit sensemaking that leads to BMI.

Finally, I found that some restauranteurs engaged in BMI actions that resulted in long-term organizational changes, while others engaged in short-term changes they soon abandoned. These BMI outcomes were related to various factors such employing different sensemaking frames to interpret cues, existing business model fit with the environment, objectives, and resource availability. However, I encourage BMI researchers to find more explanations for entrepreneurs' temporary or permanent organization and business model changes. For instance, some BMI actions may create various problems in sales, costs, operations, and organizational culture. Some entrepreneurs may revise or develop the BMI actions, while others may simply

remove them. Exploring the factors associated with temporary BMI actions, as well as the process of whether entrepreneurs further develop new business models, could provide new theoretical insights into the nature and underpinnings of BMI.

Limitations

This study has several limitations. Because it focuses on the restaurant industry during the COVID-19 crisis, an important consideration is whether the BMIs developed through the sensemaking process are applicable in different crisis and non-crisis situations, and in different industries. Depending on the context, different types of BMI actions and processes may evolve. Thus, I was unable to draw generalizable conclusions about the BMI actions and processes that apply to broader contexts.

However, entrepreneurs may follow the sensemaking process of understanding and synthesizing information in any crisis situation, and any industry, because external changes and organizational conditions can provide a variety of information that entrepreneurs will assess and respond to. Thus, entrepreneurs' BMI in response to perceived opportunities and threats can be universal, even if the particular patterns of actions are context-specific. Also, by studying BMI in different industries, researchers found that firms continue to expand business models (e.g., Kim & Min, 2015; Sohl et al., 2020), enter new markets (e.g., Anderson & Kupp, 2008), enhance operational efficiency and cost reductions (e.g., Sorescu et al., 2011; Thorgren & Williams, 2020), and change services and products (e.g., Visnjic et al., 2013; Zott & Amit, 2008). As a result, BMIs can take various forms depending on the industry or type of business, but the underlying ideas of BMI actions may share similarities.

This study’s final limitation is that I was unable to trace restaurants that had permanently closed. All my interviewees’ restaurants survived, and some even thrived during the pandemic,

which is wonderful. After my data collection, some restauranteurs shut down a few locations, but most businesses remained open. The lack of samples from businesses that failed during the pandemic prevents me from telling a story about which BMI actions they did or did not use; what cues they had; how they interpreted those cues; and how and why their BMI actions could not prevent them from failing. That story might differ from my interviewees' experiences. Thus, my sample may not represent the full range of restauranteurs' experiences during the pandemic. However, I was also conducting a process rather than a variance study. Future research that specifically adopts a variance approach to their research design can continue to explore factors that lead to BMI success or failure.

Conclusion

King Saul felt his chest tighten as he saw Goliath walking down to the valley of Elah and heard him shout, "Send out your warrior." Israelites looked at each other with fear in their eyes as Saul lowered his head and stared at the ground, hiding his fear. There was silence for a few moments as the Israelites paused until the shepherd boy David yelled, "I will kill him!" Saul denied this possibility but was also terrified—Goliath was the champion warrior; his soldiers had already been discouraged and terrified by the enormous champion; and the king struggled to find a solution. Pleading with Saul, David explained how he used slingshots to kill bears and lions to protect his flock of sheep. Possibly interpreting David's experiences as a chance to win the battle, Saul sent the shepherd boy to battle the giant.

Just as Goliath challenged King Saul, COVID-19 challenged entrepreneurs, who, like King Saul, noticed cues around them, interpreted the cues, and took action. Their BMI actions were difficult to explain using only a few environmental or organizational cues and with a static process. However, understanding how entrepreneurs' lived experiences and the frames they used

to make sense of various cues provides insight into processes driving or inhibiting BMI. BMI researchers, I believe, have tremendous opportunities to pursue a more in-depth understanding of BMI actions and processes to advance the field if they explore BMI from the entrepreneur's perspective, rather than imposing frameworks from without. I hope that my dissertation will serve as a cornerstone for identifying BMI processes and actions through a sensemaking frame.

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APPENDICES

Appendix 1. Traveler's Organizational Conditions, Sensemaking Frames, and BMI Actions Over Time

Time	1st Phase (March – July 2020)	2nd Phase (August – early November 2020)	3rd Phase (Mid-November – June 2021)	After the final interview
Prior organizational condition	• One restaurant (downtown) • Casual dining • Dine-in focused • Italian food	• One restaurant (downtown) • Casual dining • Dine-in and ***to-go*** • Italian food - **different food styles**	• One restaurant (downtown), **working on opening a new concept restaurant** • Casual dining • Dine-in and ***to-go*** • Italian food- **different food styles**	• One restaurant (downtown), **working on opening a new concept restaurant** • Casual dining • Dine-in and ***to-go*** • Italian food
Interpretation	Opportunity frame	Opportunity frame	Opportunity frame	
Interpretation quotes	"We had the information, we already spent some money on it, and we just chose to take the time to do it, and since we thought the concept might work in the future, we just figured what a good time to test it out, because people are really patient right now."	"The next concept is going to be very different and with a different name. It's going to be the yin to this as yang. And while this concept is dinner only, high-end experience, wine list, reservations, indoor dining, no delivery, the other concept will really be the opposite of all that.."	"We have decided on the concept, yes. We just haven't gone public with it. This isn't public information, and so these pop-up dinners that we're having will tease it, will tease the concept. People may make assumptions based off of that, but we won't actually release that until we have more of a firm timeline with construction and design, and we have to get the tenant out, so there are a lot of moving pieces."	
Major BMI actions	Changing concept of restaurant by changing food style	Developing the new business concept	Testing the new business concept	
Minor BMI actions	Hiring new employees Changing employees' tasks Receiving PPP/ IDEL Changing space layout (inside and outside of the restaurant) Changing business hours Adding curbside service Adding to-go Changing menu items Adding an online order service Changing POS (point-of-sale) system Starting reservation only service	Starting partnership with breweries Changing online reservation system Adding price tag on merchandise Changing employees' pay Changing business hours (7 days a week)	Adding new menu items Designing merchandise with employees (e.g., t-shirts)	

Appendix 2. Big Shoulder's Organizational Conditions, Sensemaking Frames, and BMI Actions Over Time

Time	1st Phase (March – July 2020)	2nd Phase (August – early November 2020)	3rd Phase (Mid-November – June 2021)	After the final interview
Prior organizational condition	• One restaurant (downtown) • Casual dining • Dine-in and to-go • Vegan food	• ***Two restaurants*** (downtown) • Casual dining • Dine-in, to-go, third-party delivery • Vegan food	• ***Two restaurants*** (downtown) • Casual dining • Dine-in, to-go, third-party delivery • ***Vegan and Meat***	• ***Two restaurants*** (downtown) • Casual dining • Dine-in, to-go, third-party delivery • ***Vegan and Meat***
Interpretation	Opportunity frame	Opportunity frame	Threat frame	
Interpretation quotes	"I think the corona helped me to take it [new restaurant store] over. The feel-good thing that happened since the corona."	"The owner of the [A] Hotel came to me, eat the food, and he said, listen, I got 2,000 square feet in one of the hotel in [City A] and I want to open the same concept. I want you to come and open over there. I told him, listen, let's wait three months, four months. Let's see what's going on. Waiting to do it."	"I said, 'No, I cannot do it…I can control everything. I don't think that I'm going to go there because I can't.' I am not 21 years old. I'm tired…I can't. I'm on the edge of retirement. I don't need to work so fast and so hard, so I don't think so."	
Major BMI actions	Working on a new concept restaurant (Meat)	Opened the new concept restaurant (Meat)	None	
Minor BMI actions	Hiring new employees Receiving PPP/ IDEL Changing business hours Adding third party delivery	Installing air filtration (kills virus) Adding new menu items	Changing business hours for the new restaurant (open only four days) Receiving PPP Adding outside patio	

Appendix 3. Food Network's Organizational Conditions, Sensemaking Frames, and BMI Actions Over Time

Time	1st Phase (March – July 2020)	2nd Phase (August – early November 2020)	3rd Phase (Mid-November – June 2021)	After the final interview
Prior organizational condition	• Fifteen restaurants (downtown, shopping district) • Mixed (casual and fine dining) • Dine-in focused • American food	• Fifteen restaurants (downtown, shopping district) • Mixed (casual and fine dining) • ***Dine-in and to-go (one restaurant)*** • American food	• Fifteen restaurants (downtown, shopping district), ***ghost kitchen*** • Mixed (casual and fine dining) • ***Dine-in, to-go, delivery, curbside*** • American and Mexican foods	• Fifteen restaurants (downtown, shopping district), ***ghost kitchen, a hotel, and working on adding different concept restaurants*** • Mixed (casual, fine dining) • ***Dine-in, to-go, delivery*** • American, Mexican foods
Interpretation	Threat frame	Threat frame	Opportunity frame	
Interpretation quotes	"It's just so crazy…I keep telling my team, as entrepreneur, that this is the hardest thing you'll face…where there are so many different factors that really go into play. The biggest thing you can do is stand up and be a leader and say, 'This is what we're going to do,' and stay focused. As the bullets come at you, you just have to take them and stay as much as you can on the path that you choose to do, at least for a little while."	"There was about two or three weeks there that I was definitely thumb in my mouth in the fetal position underneath my desk every day, and rocking back and forth. I mean, I'm not kidding you. There was a point where … and I've got to stay positive for the team. Revenues drop off and everybody is like, 'What the heck is going on?' and it's like, 'No, we're going to be great. We're going to be great,' and then I go back to my office and curl up and almost cry, and then go back out, 'Everything is going to be great,' you know.	"We are kind of pushing all the chips in. We want to take advantage of the fact that we feel like it's going to be…as everybody is saying, in our industry we feel like it's going to be the roaring 20's for about the next 18 months, so we want to take full advantage of that"	
Major BMI actions	None	None	Opened a boutique hotel Opened new restaurants with different menu Partner up with a corporation	
Minor BMI actions	Receiving PPP Furloughing employees Offering to-go (one restaurant) Food donations Promoting gift card sales	Starting ghost kitchen concept (to-go, delivery, and curb-side) Adding blankets and Igloos in outdoor space Offering a wellness program for employees Promoting additional gift card sales	Receiving PPP Changing rent agreements Changing ghost kitchen business through only an online marketplace	

Appendix 4. Rebel's Organizational Conditions, Sensemaking Frames, and BMI Actions Over Time

Time	1st Phase (March – July 2020)	2nd Phase (August – early November 2020)	3rd Phase (Mid-November – June 2021)	After the final interview
Prior organizational condition	• One restaurant (neighborhood) • Casual dining – breakfast, brunch, and lunch • Dine-in focused • American food	• One restaurant (neighborhood) • Casual dining - ***brunch and lunch*** • Dine-in, to-go, curbside • American food	• One restaurant (neighborhood) • Casual dining – ***brunch and lunch*** • Dine-in, to-go, curbside • American food	• One restaurant (neighborhood) • Casual dining – ***brunch, lunch, Dinner, and bar*** • Dine-in, to-go, curbside • American food
Interpretation	Threat frame	Threat frame	Opportunity frame	
Interpretation quotes	"Now that COVID has come into play, you take that mindset of okay, can we move forward with this and still gain ground trying to do that? For me personally, we just got to figure out how to get our feet back under us. Quite frankly, the hell with everything else. I got a mortgage to pay, I've got kids to put food on the table, but I'm also a hustler. With me, if I have to shut down the business and file for bankruptcy, I'll do that and figure out life."	I love what I do, but we have to generate more revenue to keep afloat. Dinner is where money is at, and I may just flip the switch. I haven't decided, but I may just end the [Rebel] completely and rebrand...If we do dinner, I will make some more changes to the dining room.	After the last PPP we got, which was just over $100,000. It was huge. I was starting to have another freak-out, to be honest, to see if I could pull it off. I've got some other applications in for grants right now too, because that covers my payroll…I just was sitting there thinking… I just finally made it to the point to where if we're going to do this [a dinner and bar business].	
Major BMI actions	None	None	Concept changed to a dinner and bar focused business Changed menu	
Minor BMI actions	Receiving PPP/ IDEL Furloughing employees Reducing food costs Closing business (two weeks) Changing business hours (no breakfast) Removing bakery service Adding curbside, family style meal, raw meat	Changing business hours (Tues - Sun to Wed - Sun) Increasing employees' pay Removing new services (family style meal, raw meat) Adding online order service	Receiving PPP/other grants Changing business hour (9-2:00PM again) Obtaining a liquor license Increasing menu price	

Appendix 5. Meditation's Organizational Conditions, Sensemaking Frames, and BMI Actions Over Time

Time	1st Phase (March – July 2020)	2nd Phase (August – early November 2020)	3rd Phase (Mid-November – June 2021)	After the final interview
Prior organizational condition	• Two restaurants (downtown), one small and one medium in size • Casual dining • Dine-in, to-go • Mexican and Asian food	• Two restaurants (downtown), ***working on relocating to a larger space (small restaurant)*** • Casual dining • Dine-in, to-go • Mexican and Asian food	• Two restaurants (downtown), **one *large*** and one medium in size • Casual dining • Dine-in, to-go • Mexican and Asian food	• Two restaurants (downtown), **one *large*** and one medium in size, a***dded more space to a large restaurant*** • Casual dining • Dine-in, to-go, **third-party delivery** • Mexican and Asian food
Interpretation	Opportunity frame	Threat frame	Threat frame	
Interpretation quotes	"We made plans back in December to move…We should be opening the new location in a couple of weeks. And then we plan to pivot the current location into a different concept, something more like a fast to-go concept...That's a plan we want to try and make it on volume… At least our new spot has a really large outdoor space which is something that's really valuable right now that [Meditation's Asian restaurant] currently doesn't really have."	"The lesson right now is we are just getting started and so it's my attitude of I'm all in to whatever I have to do to figure out business. It's like I still need to do that and there's an immense pressure, but also everyone has had hard few months. It's not necessarily going to get any better right away, so we've got to help everyone find some balance in that."	"We finally got overwhelmed enough, and there was enough going on; and we saw that the next year would still be challenging enough…so we just had to focus on the things that we did have."	
Major BMI actions	In the process of relocate to a larger restaurant	Opened the larger restaurant	None	
Minor BMI actions	Furloughing employees Receiving PPP Changing menu price Adding reservation system Adding new menu items Adding a new online order service Adding New POS (point-of-sale) system	Adding new menu items Considering a new concept business for the small restaurant (to-go only concept)	Improving outside seating Adding storage in the kitchen Changing employees' pay and benefits Opening bar area Adding more tables (indoor) Installing heaters (outdoor) Adding third party delivery Working with other businesses Renting out more kitchen space Changing menu price Receiving PPP/ State grant	

Appendix 6. Musician's Organizational Conditions, Sensemaking Frames, and BMI Actions Over Time

Time	1st Phase (March – July 2020)	2nd Phase (August – early November 2020)	3rd Phase (Mid-November – June 2021)	After the final interview
Prior organizational condition	• Two restaurants (downtown, neighborhood) and a catering store • Fast service and casual dining • Dine-in, to-go • American food	• ***Two restaurants*** (downtown, neighborhood), ***working on opening a new restaurant*** • Fast service and casual dining • Dine-in, to-go, third-party delivery • American food	• ***Two restaurants*** (downtown, neighborhood), ***working on opening a new restaurant*** • Fast service and casual dining • Dine-in, to-go, third-party delivery • American food	• ***One restaurant (downtown) and one larger restaurant (shopping district), integrating restaurant and catering business together*** • Fast and full services, casual dining • Dine-in, to-go, third-party delivery • American food
Interpretation	Opportunity frame	Opportunity frame	Threat frame	
Interpretation quotes	"My mind was okay, maybe we just need another location with a really big kitchen. There's ordering and all that stuff…Now I think the best model is to have a restaurant with a kitchen large enough to handle it. So my hope is we do get [a new] restaurant open. The kitchen is big enough and the catering comes back, I got the space."	"In [a city] specifically, they've got a tun of restaurants. Ninety percent of them are fast food and quick service restaurants. [The city] has got [A restaurant]. It has got [B restaurant]. We wanted to make a good sit-down restaurant, full bar. We've never had that before. That's another thing [the city] doesn't really have is bars, a place to go watch the game or something. We just thought that's what [the city] needed. Yeah, change it up."	"I used to hate the word "no," and now I like the word "no" a lot. (laughter)…our brand is good; we will have plenty of money coming in once we are up and running. Let's just focus on doing what we do well, and not stress ourselves out."	
Major BMI actions	In the process of opening a larger restaurant	In the process of opening a larger restaurant	Opened a new larger restaurant	
Minor BMI actions	Receiving PPP Selling catering building Furloughing employees Changing restaurants' layout Offering third party delivery services, curbside, and to-go Changing menu price New online order service New POS (point-of-sale) system Using vacuum sealer to offer pre-cooked meals Partnership with bars	Offering boxed meals Recruiting employees Considering new services for the new restaurant (e.g., drive-thru window, separate menu for a bar business, outside patio)	Purchasing new equipment Relocating management team Redesigning employees' pay Increasing menu price Working on the patio Receiving PPP Closing a restaurant permanently (suburb) Changing menu items	

Appendix 7. Beaver Dam's Organizational Conditions, Sensemaking Frames, and BMI Actions Over Time

Time	1st Phase (March – July 2020)	2nd Phase (August – early November 2020)	3rd Phase (Mid-November – June 2021)	After the final interview
Prior organizational condition	• Three restaurants (downtown, shopping district) • Casual coffee shop • Dine-in, to-go • Coffee and baked goods	• Three restaurants (downtown, shopping district) • Casual coffee shop • Dine-in, to-go, ***third-party delivery*** • Coffee and baked goods	• Three restaurants (downtown, shopping district), and ***coffee roasting wholesale business*** • Casual coffee shop • Dine-in, to-go • Coffee and baked goods	• ***Four restaurants*** (downtown, shopping district) and ***coffee roasting wholesale business*** • Casual coffee shop • Dine-in, to-go, ***drive-thru*** • Coffee and baked goods
Interpretation	Threat frame	Opportunity frame	Opportunity frame	
Interpretation quotes	"My brother [partner] said, 'Hey, I've been following this virus. This might be the real deal.' We almost immediately began to just shore every expenditure up that we needed to, and then we were just kind of operating for about a month. We weren't making any moves, weren't making any big purchases."	"And then just the whole thing has caused me to think bigger and to just kind of say yes to opportunity. There's a thing -- there's something about it that's made me less fearless or more fearless. That's a good way of saying it. Just more fearless."	"It didn't really have anything to do with the pandemic, it was just the right guys approaching us at the right time and making the right offer (laughter), a great offer."	
Major BMI actions	None	Started roasting own coffee – wholesale	Open a new restaurant – with a drive-thru	
Minor BMI actions	Furloughing employees Receiving PPP/EIDL Changing business hours Adding third party delivery	Changing business hours Adding happy hours Adding a new online order service Changing POS (point-of-sale) system Receiving state grants Reducing food costs	Receiving PPP Hiring HR consultant Adding subscription model to online order service	

Appendix 8. Special's Organizational Conditions, Sensemaking Frames, and BMI Actions Over Time

Time	1st Phase (March – July 2020)	2nd Phase (August – early November 2020)	3rd Phase (Mid-November – June 2021)	After the final interview
Prior organizational condition	• Two restaurants (shopping district) • Casual dining • Dine-in, to-go, drive-thru • Fast-food	• Two restaurants (shopping district) • Casual dining • To-go, ***curbside, third-party delivery,*** drive-thru • Fast-food	• Two restaurants (shopping district) ***with an additional drive-thru lane*** • Casual dining • To-go, ***curbside, third-party delivery,*** drive-thru • Fast-food	• Two restaurants (shopping district): ***one has additional drive-thru lanes, and the other is being renovated*** • Casual dining • ***Dine-in***, to-go, third-party delivery, drive-thru • Fast-food
Interpretation	Threat frame	Threat frame	Threat frame	
Interpretation quotes	"Oh gosh… Due to our volume, we get deliveries every single day. It went down to two and 3 days. That became a nightmare…It was horrible. It almost got to a point where it would say, "Well, you're just lucky to have what you got." So, it was very, very stressful. We stressed the supply chain, as I referenced earlier, we have really stressed that whole process due to our demand."	"We've just got some fatigue, COVID fatigue, which leads to possibly dropping guards and not being quite as efficient or as good as we were."	"The employees are so demanding that we are unable to promote our business right now. And I feel that is horrible."	
Major BMI actions	Working on rebuilding a restaurant (changing blueprint)	Rebuilding a restaurant suspended (changing blueprint)	Rebuilding a restaurant started	
Minor BMI actions	Changing structure of process (orders, prepare foods, deliver to customers) Removing dine-in service Adding third party delivery service, curbside, to-go Changing parking lot for new services (delivery, curbside)	Adding a drive-thru lane Changing set up indoor dining room for mobile order Receiving ERC (Employment Retention Credit)	Adding dine-in Relocating employees (from renovating store to a different location) Increasing price of food Reducing costs (provide condiments and napkins only requested) Adding a new door for curbside operation Re-organizing parking lot for curbside	

Appendix 9. Family's Organizational Conditions, Sensemaking Frames, and BMI Actions Over Time

Time	1st Phase (March – July 2020)	2nd Phase (August – early November 2020)	3rd Phase (Mid-November – June 2021)	After the final interview
Prior organizational condition	• One restaurant (shopping district) • Casual dining • Dine-in and shipping (bakery) • American food	• One restaurant (shopping district) • Casual dining • Dine-in, shipping (bakery), **to-go, curbside** • American food	• One restaurant (shopping district) • Casual dining • Dine-in, **to-go, curbside** • American food	• One restaurant (shopping district) • Casual dining • Dine-in, **to-go, curbside** • American food
Interpretation	Threat frame	Threat frame	Threat frame	
Interpretation quotes	"My God, the company that we were getting cracker crumbs from, they closed up. We've had to now start trying to get out of four to five companies out there a cracker meal that will bread and stay on there to the consistency and the taste that we had before. There are a lot of challenges now. It's not like you're completely out of product, but the product when it changes, it changes the taste profile."	"It [managing operation] was very challenging, because I was having to change gears multiple times every, single day. It was like a football coach on the sideline, and it was like practice for 10 hours all the way through that."	"COVID pushed us into doing that [operational efficiency]. COVID pushed us into activating things that we already knew to do. Over the years, we had gotten complacent in doing a lot of things like that because we didn't have to do that. We were able to get plenty of people to serve the food. We allowed that just to kind of be a process, you know? COVID changed that. It put a different perspective out there. It made us do what we should have been doing before anyway as survival."	
Major BMI actions	None	None	None	
Minor BMI actions	Changing operation - focusing on curbside and to-go Receiving PPP Adding promotion (20% off) Removing menu items (sourcing issue) Changing business hours Increasing menu price	Removing shipping business on bakery items Increasing menu price	Closing banquet business Increasing employees' pay Doing tip-pool Changing operation (ticket times - learned from a franchise restaurant) Changing ingredients (in-expensive) for some food items Increasing menu price	

Appendix 10. Polymath's Organizational Conditions, Sensemaking Frames, and BMI Actions Over Time

Time	1st Phase (March – July 2020)	2nd Phase (August – early November 2020)	3rd Phase (Mid-November – June 2021)	After the final interview
Prior organizational condition	• Three restaurants (downtown, shopping district) • Casual coffee shop • Dine-in, to-go, third-party delivery • Coffee and baked goods focused	• Three restaurants (downtown, shopping district) • Casual coffee shop • To-go, **curbside,** third-party delivery • Coffee and baked goods focused	• Three restaurants (downtown, shopping district) • Casual coffee shop • To-go, third-party delivery • Coffee and baked goods focused	• Three restaurants (downtown, shopping district) • Casual coffee shop • **Dine-in,** To-go, third-party delivery • Coffee and baked goods focused
Interpretation	Threat frame	Threat frame	Threat frame	
Interpretation quotes	"Obviously because of COVID, it hasn't really, I mean, we're keeping our heads above water and we're keeping the business going, but as far as doing anything else right now, we're only focused on just keeping the doors open."	"I think that speaks more than just showing a high...a lot of organizations...unfortunately are not going to make it. But that's the reality of the situation. With that being said, we just want to stay alive. We just want to stay in it."	"At one point, we thought we might have to either close the [one of store] for a little bit of time, or maybe look at relocating it, but I'm starting to see signs of life in our neighborhood, and I think if we can just hold on until the end of the summer, we're going to be fine."	
Major BMI actions	None	None	None	
Minor BMI actions	Reducing operating costs (managing waste, owner working long hours) Receiving PPP/EIDL Adding a new inventory system Adding multiple third-party delivery services Adding curbside Removing menu items (sourcing issue) Changing business hours (downtown- 3 days a week) Removing dine-in service	Removing menu items (cost concern) Receiving SBA 7A Loan/ A state grants Reducing food waste - making product about 20% less Starting wholesale	Changing business hours (open more hours) Kosher certified Receiving PPP Hiring accounting firm Adding dine-in service	

Appendix 11. Mathematician's Organizational Conditions, Sensemaking Frames, and BMI Actions Over Time

Time	1st Phase (March – July 2020)	2nd Phase (August – early November 2020)	3rd Phase (Mid-November – June 2021)	After the final interview
Prior organizational condition	• 20+ restaurants (downtown, shopping district) • Fine and casual dining • Dine-in focused • American and Italian food	• 20+ restaurants (downtown and shopping district) • Fine and casual dining • Dine-in, **to-go, curbside, in-house delivery** • American and Italian food	• 20+ restaurants (downtown and shopping district), **catering business** • Fine and casual dining • Dine-in, **to-go, in-house delivery** • American and Italian food	• 20+ restaurants (downtown and shopping district), **catering business** • Fine and casual dining • Dine-in, **to-go** • American and Italian food
Interpretation	Threat frame	Threat frame	Threat frame	
Interpretation quotes	"Our cash situation was so good sitting at March 1st. On the 15th of March, sales went away so fast, nobody expected your cash is disappearing quickly."	"Restaurants are being blamed, and we're having to be at 50%, but my people are not sick. Restaurants are not spreading the virus. Restaurants are not the hotbed for the virus… Restaurants are not the reason for this so therefore I would ask why we are still at 50% for our restaurants."	"We don't have any extra labor around, everybody is doing their job and want to go home…we are truly experiencing the fact that we are, at this time, very beat up; our people are very tired. We lost a kitchen manager this morning because of stress and working too much. All of our people are very stressed right now."	
Major BMI actions	None	None	None	
Minor BMI actions	Receiving PPP Furloughing employees Closing half of restaurants Only to-go business Adding to-go tent (using outside parking lot) Removing menu items Adding in-house delivery Adding alcohol to-go Renovating old restaurants (a new roof and beer system)	Increasing employees' pay Starting catering business Changing to-go box	Receiving PPP Changing business hours Increasing menu price Removing curbside and in-house delivery	

Appendix 12. Gladiator's Organizational Conditions, Sensemaking Frames, and BMI Actions Over Time

Time	1st Phase (March – July 2020)	2nd Phase (August – early November 2020)	3rd Phase (Mid-November – June 2021)	After the final interview
Prior organizational condition	• 20+ restaurants (shopping district) • Fine and casual dining • Dine-in focused • American food	• 20+ restaurants (downtown and shopping district) • Fine and casual dining • Dine-in, **to-go**, **curbside**, **in-house and third party deliveries** • American food	• 20+ restaurants (downtown and shopping district) • Fine and casual dining • Dine-in, **to-go**, **curbside**, **in-house and third party deliveries** • American food	• 20+ restaurants (downtown and shopping district) • Fine and casual dining • Dine-in, **to-go**, **third party delivery** • American food
Interpretation	Threat frame	Threat frame	Threat frame	
Interpretation quotes	"One of our guys in [a location], when it first started... he was kind of depressed when they were just closing down, having to do to-go; and he started thinking about it, and he said that then he got mad. And he said, 'I'm not going to let this happen. I'm going to fight like hell' We coined the term … #FLH… Everyone has those on and the plan is we all fight like hell and we've had that all along. That's been the sentiment for everybody."	"We are feeling like we're able to start seating more tables, but do we have the staff to handle that? You know, what do you put first, the horse or the cart, right? We've been trying to keep a staff of people happy, and giving them full sections and staffing a certain number of people. Now that the restrictions are loosened, we don't have people who are just sitting out there not getting shifts."	"Yeah, the whole challenge of not having a staff is somewhat critical in some areas. I'm going to talk to [a partner] today about potentially even closing a day in one location and we hate to do that but it's one of those things where if you can't get enough people to work on the days you're open, it's better to be better staffed to on the days that you are open, so, and we will maybe even do more sales that way too."	
Major BMI actions	None	None	None	
Minor BMI actions	Receiving PPP Furloughing employees Changing payroll system Adding a curbside booth Adding family packs (new menu) Adding promotion (20% off) Adding in-house delivery (some places not all) Adding third party delivery Adding market fresh (row meat and seafood)	Adding online order though own website Managing food waste - changing inventory level	Receiving PPP Increasing employees' pay Removing marketplace, curbside, family pack, 20 % off, and in-house delivery	

Appendix 13. Hospitality's Organizational Conditions, Sensemaking Frames, and BMI Actions Over Time

Time	1st Phase (March – July 2020)	2nd Phase (August – early November 2020)	3rd Phase (Mid-November – June 2021)	After the final interview
Prior organizational condition	• One restaurant (downtown) • Fine dining – dinner only • Dine-in focused • American food	• One restaurant (downtown) • Fine dining– **lunch** and dinner, **new menu items for to-go** • Dine-in, **to-go, in-house delivery** • American food	• One restaurant (downtown) • Fine dining– **lunch** and dinner, **new menu items for to-go** • Dine-in, **to-go** • American food	• One restaurant (downtown) • Fine dining • **Dine-in focused** • American food
Interpretation	Threat frame	Threat frame	Threat frame	
Interpretation quotes	"I was buying a blender at Kmart and just stuff like that. I was sitting there thinking, we've totally had to switch to that. We're just making it happen. But I think that's what the entrepreneurial side of a restaurant owner does that…I don't have another choice. This is everything I've worked my entire life to get to and it's like closing is not an option for me… the last thing I want to do is close my business."	"I think the biggest challenge for us is not being able to have our bar open, and I think that's our biggest decline is our liquor sales. I was looking at our September numbers this morning, and the wine is off, and the food is off, just a smaller percentage, but liquor is off by the most, and I think that's directly affected by the bar being closed…We're missing out on revenue by that, but I think it's not worth the fight of telling people you can't sit there because people don't want to be told "no" in a restaurant."	"Our biggest issue is finding people that have just any kind of skill level at the level we need has been a challenge. I think the disruption of all this during COVID, I think I read some statistic that over a million people aren't returning to the food service industry or hospitality industry as a whole."	
Major BMI actions	None	None	None	
Minor BMI actions	Adding new air filtration system Adding new POS system Doing tip-pool Furloughing employees Adding online order system Changing business hours (5days to 7 days, open for lunch: to-go) Adding promotion Changing menu items Adding alcohol to-go Adding in-house delivery service Adding lunch business	Changing menu items (prix-fixe menu, to-go menu) Managing food costs Removing in-house delivery service	Changing from prix-fixe menu to full menu Changing employees' pay system (401K for part-time employees) Removing lunch service Receiving PPP Planning to change or drop to-go service	

Appendix 14. Golfer's Organizational Conditions, Sensemaking Frames, and BMI Actions Over Time

Time	1st Phase (March – July 2020)	2nd Phase (August – early November 2020)	3rd Phase (Mid-November – June 2021)	After the final interview
Prior organizational condition	• Two restaurants (downtown) • Fine and casual dining – dinner only • Dine-in focused • American and Italian food	• Two restaurants (downtown) • Fine and casual dining– **lunch** and dinner • Dine-in focused • American and Italian food	• Two restaurants (downtown) • Fine and casual dining– **lunch** and dinner • Dine-in, **to-go** • American and Italian food	• Two restaurants (downtown) • Fine and casual dining– **dinner only** • **Dine-in focused** • American and Italian food
Interpretation	Threat frame	Threat frame	Threat frame	
Interpretation quotes	"It was scary. I mean the prospect of just seeing our bank account just dwindle and dwindle and dwindle and dwindle. It was like no end in sight."	"We are trying to be creative. We've never run specials before, so we're trying to make it work …it's very unlikely [his business] is profitable at the moment."	"We're tight [on staff] but we're like, you know, last week one of my cooks called out sick for two days and it was hard, you know, it was hard…You know, it's like running a marathon, at the end of the weekend everyone just like, you know, collapses, you know?"	
Major BMI actions	None	None	None	
Minor BMI actions	Receiving PPP Closing two restaurants several months Furloughing employees Removing menu items (travel concern - to-go service) Adding to-go Changing business hours Adding lunch business	Adding online order service Adding promotions Changing menu items Increasing menu price Doing tip-pool	Changing business hours (6 days to 4 days a week) Adding outside patio Receiving PPP/Restaurant Revitalization Fund (RRF) Removing promotions Considering removing to-go	

Appendix 15. Happy's Organizational Conditions, Sensemaking Frames, and BMI Actions Over Time

Time	1st Phase (March – July 2020)	2nd Phase (August – early November 2020)	3rd Phase (Mid-November – June 2021)	After the final interview
Prior organizational condition	• One restaurant (neighborhood) • Casual dining • Dine-in, to-go • Asian food	• One restaurant (neighborhood) • Casual dining • Dine-in, to-go, **in-house delivery** • Asian food	• One restaurant (neighborhood) • Casual dining • Dine-in, to-go • Asian food	• One restaurant (neighborhood) • Casual dining • Dine-in, to-go • Asian food
Interpretation	Low-level sensemaking	Low-level sensemaking	Low-level sensemaking	
Interpretation quotes	"Normally my kids at the store, they work, and I stay home because I'm too old to go back to work…They are working really well…The customers, they are still happy to come. That's why nothing changed."	"I want to live simple. Yeah, I don't want to [change services and menu]"	"I'm retired. I don't have to work and then don't have to put any penny in the business. "	
Major BMI actions	None	None	None	
Minor BMI actions	Receiving EIDL Furloughing employees Adding to-go countertop Adding in-house delivery service Adding an online order system	Removing in-house delivery service	Partnership with employees - share profits	

Appendix 16. Steady's Organizational Conditions, Sensemaking Frames, and BMI Actions Over Time

Time	1st Phase (March – July 2020)	2nd Phase (August – early November 2020)	3rd Phase (Mid-November – June 2021)	After the final interview
Prior organizational condition	• One restaurant (shopping district) • Casual dining • Dine-in, to-go, and in-house delivery • Asian food	• One restaurant (shopping district) • Casual dining • To-go • Asian food	• One restaurant (shopping district) • Casual dining • To-go • Asian food	• One restaurant (shopping district) • Casual dining • **Dine-in**, to-go, **third-party delivery** • Asian food
Interpretation	Low-level sensemaking	Low-level sensemaking	Low-level sensemaking	
Interpretation quotes	"I'm getting ready to retire pretty soon, so I'm not that ambitious."	"I'm happy with steady business so I can plan instead going back and working overtime and try to make sure I have enough food to sell. This is not what I want to do. I just like to make it easier."	"I have no more plan…I'm looking forward to retirement (laughter). It's just I've been working so many years and had so much stress, just quite a lot of stress."	
Major BMI actions	None	None	None	
Minor BMI actions	Furloughing employees Only To-go service (no dine-in, no delivery) Increasing menu prices	None	Adding third party delivery Increasing menu price Opened Dine-in service	

Appendix 17. Unconventional's Organizational Conditions, Sensemaking Frames, and BMI Actions Over Time

Time	1st Phase (March – July 2020)	2nd Phase (August – early November 2020)	3rd Phase (Mid-November – June 2021)	After the final interview
Prior organizational condition	• One restaurant (Neighborhood) • Pop-up food stand, online marketplace • To-go, third-party shipping • Desserts	• One restaurant (Neighborhood) • Pop-up food stand, online marketplace • To-go, third-party shipping • Desserts	• One restaurant (Neighborhood) • Pop-up food stand, online marketplace • To-go, third-party shipping, **in-house delivery** • Desserts	• One restaurant (Neighborhood) • Pop-up food stand, online marketplace • To-go, third-party shipping, **in-house delivery** • Desserts
Interpretation	Low-level sensemaking	Low-level sensemaking	Low-level sensemaking	
Interpretation quotes	"I have been thinking for a long time that may it's time to stop the [desserts] business. This [other business] is taking up so much of my time and for the hours that I put in, it's a higher return for sure."	"I think like I said, it [not promoting the business] is because it [desserts business] had come as such a side thing for us for a long time."	"[Dessert business] now has also been slowly decreasing, which for me, has worked out great, because I need time now that we're doing all [the other business] again."	
Major BMI actions	None	None	None	
Minor BMI actions	Receiving local government grants Adding own website's online order system Removing pop-up service	Adding in-house delivery service Finding a new supplier	Receiving PPP	

VITA

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