

RESEARCH ARTICLE

Entrepreneurial Resilience and Innovation in Crisis: A Study of Effectuation, Causation, and Bricolage in Post-Pandemic Startups

Aliza Tabassam

Allama Iqbal Open University Islamabad, Pakistan

Corresponding Author: Aliza Tabassam. Email: alizatabassum@gmail.com

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Abstract

This study investigates how effectuation, causation, and bricolage help realize entrepreneurial resilience and innovation in startups during the COVID-19 pandemic. Many startups changed their approaches to constantly shifting market conditions, supply chain disruptions, and customer demand. Through a thematic analysis of qualitative data from interviews with startup founders, this study identifies five main resilience strategies: The first strategy is effectuation in decision-making; the second is causality in strategic planning; the third is bricolage in resource management; the fourth is resilience in crisis; and the fifth is innovation through effectuation and bricolage. At the same time, each primary strategy consists of sub-strategies, including real-time adaptation, flexible goal adjustment, supplier diversification, and process innovation. Research indicates that startups that adopt effective decision-making are capable of quickly adapting their undertakings to immediately emerging issues, unlike those that employ the causal approach to decision-making for their strategic goals. Furthermore, through the use of bricolage, startups were able to utilize as few resources as possible in a variety of ways to support their operations and innovation. Consequently, it addresses a crucial void in the current literature on crisis management and entrepreneurship, specifically focusing on the interplay between effectuation, causation, and bricolage as resilience factors. Therefore, its insight presents rich implications for venture creation, implying that formal planning tempered by creative flexibility is beneficial when struggling to overcome adversity and promote change.

Keywords: Bricolage; Causation; Effectuation; Entrepreneurial resilience; Innovation; Strategic adaptability

Introduction

This research explores how the COVID-19 pandemic affected the global startup ecosystems and exerted unprecedented pressure on small businesses and startups. These enterprises struggled with scarce resources, disrupted supply chains, and changing dynamic markets (Brown & Rocha, 2020; Varma & Dutta, 2023). The COVID-19 crisis was disruptive since it uncovered weak spots in conventional value chain architectures and stress-tested the importance of purposeful flexibility (Shepherd, 2020). The ability to recover strength after a shock and adapt has gained importance as a characteristic for all startups, as it signifies the ability to continue operations and foster innovation in uncertain times. Specifically, conflict metabolism resilience refers to an entrepreneur's capacity to establish and maintain stability in uncertain, complex, and dynamic environments

(Eggers, 2020). Researchers have now sought more theoretical perspectives on effectuation, causation, and bricolage to explain how startups can optimally position themselves in disruptive environments (J. Fisher, 2022). The concept of Effectuation (Sarasvathy, 2001) highlights the importance of basing decision-making on available resources, actively pursuing them, and generating new opportunities (Dew et al., 2009). In contrast, causation involves a highly structured process with long-term planning and goal setting, where entrepreneurs set clear targets and devise strategies to achieve them (Ruiz-Jiménez et al., 2021). The concept of causation remains crucial in assisting an enterprise to establish direction and continuity in stable conditions (Read et al., 2016). Nevertheless, best practices can negatively impact creativity during crises, limiting the suitability of implementation in managing crises (Bacq et al., 2020). According to Lévi-Strauss, as extended in the context of entrepreneurship, bricolage involves finding sustainable, heterogeneous, but available and affordable solutions to existing problems without incurring new costs (Musona et al., 2020). It is even more effective in resource-constrained organizations, which most startups often are, since it encourages innovativeness and business persistence in the face of constraints. The COVID crisis has shown the need to integrate effectuation, causation, and bricolage to develop a sound entrepreneurial approach (Cherbib, 2024). Harms et al. (2021) assert that effectuation allows startups to maintain flexibility, causation gives them structure, and bricolage fosters creativity, all of which contribute to their ability to thrive during disruptions. (Osiyevskyy et al., 2023) have established that startups using these approaches can improve innovation capability, organizational endurance, and crisis robustness. However, the operational application of these approaches may vary depending on the industry, resource availability, and market environment (Kozachenko et al., 2024). This paper proposes that an equal combination of effectuation and causation, along with occasional bricolage, fosters an integrated approach to resilience building, enhancing the innovative capability, and ensuring the sustainability of startups in challenging conditions (Simms et al., 2022).

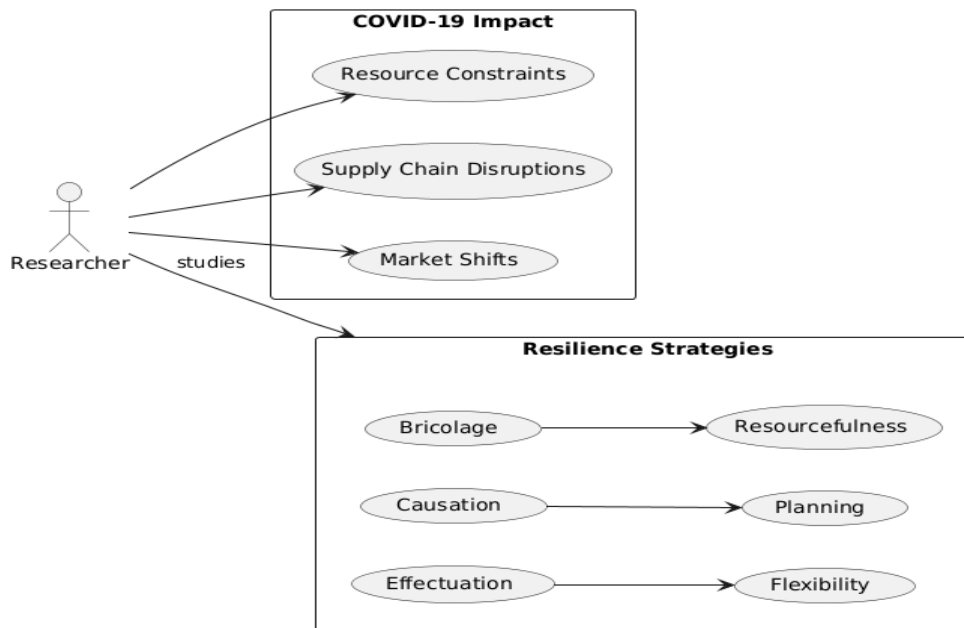


Figure 1: Framework for Entrepreneurial Resilience in Response to COVID-19 Challenges.

According to Figure 1, this study contributes to the literature on resilience frameworks in entrepreneurship by exploring startups' strategic responses to the COVID-19 outbreak. The study's findings aim to educate entrepreneurs and business professionals on how to utilize flexibility, robust planning, and creativity in resource

deployment to lessen the impact of future shocks. This research will also contribute to the academic literature on entrepreneurial resilience by analyzing startups' post-pandemic practices. It will illustrate that flexibility and creativity are required to manage a constantly changing environment.

Resilience

High uncertainty and risks forced many changes during the COVID-19 pandemic (Ali et al., 2021; Amankwah-Amoah et al., 2021). The meaning of resiliency is an organization's competency to address a range of disturbances (Burnard et al., 2018). At the organizational level, disruptions trigger a variety of resilience responses (Sutcliffe & Vogus, 2003), manifesting as survival, stability, or sustained performance (Battisti et al., 2019). Disruption management invariably calls for organizational structure and process changes, especially in SMEs. Such resilience-building endeavors may encompass owner-manager engagement in strategic activities, commitment to innovation, strategic planning, customer relations, and constant focus on innovations and employee training (Demmer et al., 2011). The study by Billington et al. demonstrates the significant role of owner-managers in elevating the current levels of resilience by challenging established business practices. Owner-managers, as primary decision-makers in resilience strategies (Piperopoulos, 2010), have the potential to foster increased employee engagement when they develop and communicate a firm's strategic vision (Sadler-Smith et al., 2003). Their involvement is therefore crucial in fostering organizational adaptability and restructuring in times of crisis. Some researchers have questioned organizational resilience's understanding and boundaries (Linnenluecke, 2017). This perspective views resilience as (a) a state, (b) a transition, and (c) a strength (G. Fisher, 2012). Some studies have looked at resilience as a process (Duchek et al., 2019), but this paper shows that it can be broken down into stages: anticipatory adaptation, exposure, recovery, restoration, and post-disruption recalibration of resilience (Burnard & Bhamra, 2011; Goll & Rasheed, 2011; Linnenluecke, 2017; Ortiz-de-Mandojana & Bansal, 2016). Other studies have suggested that the process-based model also has stages of detection, activation of response, and learning in order to build resilience. (Bonanno, 2004; Monllor et al., 2020) include it as a dynamic and malleable process that shapes an organization's physical and emotional well-being. In this context, we conceptualize resilience as a process that employs adaptive processes to test and reflect on various resilience constellations (Billington et al., 2018).

Resources are crucial in times of adversity, particularly for Small and Medium Enterprises (SMEs). Because of poor working capital, strategies for improving capacity and creating a sustainable SME are difficult to come by the availability of reliable financing is thus essential in building up this cSmall and medium-sized businesses (SMEs) are thought to be more vulnerable to risks and changes in the environment because they don't have as many resources (Ahuja et al., 2019; De Matteis et al., 2023; Steen et al., 2024; Verreynne et al., 2023) but resilience theory says that SME owner-managers are likely to be better able to deal with problems because they know more about specific business situations (Chang et al., 2022; Helgeson et al., 2022). Extreme events directly and indirectly affect SMEs due to their limited resources, which hinder their ability to plan, respond, and recover (Verreynne et al., 2023). (Wishart, 2018) suggests that SMEs bolster their readiness by investing in adaptability and learning, despite encountering virtually every type of adversity and high uncertainty. In this environment, SMEs stay and thrive by learning and adapting to make the business better and more flexible (Sawaeen & Ali, 2020). This active engagement affirms the contention that learning builds robustness during episodes of disruption (Andersen, 2020). Organizational learning (OL) is a key performance enabler, primarily in organizations operating in volatile contexts (Zhou et al., 2018). According to Altinay et al. (2016), OL is an organization's ability to develop, transfer, and use knowledge for effective performance, leading to better resource orchestration and less organizational stifle. Strategic learning in SMEs is conducted by owner-

managers where proactive positioning, learning goals orientation, and knowledge acquisition mechanisms are crucial (Zámborský et al., 2022). Specifically, a proactive mentality helps businesses respond to alterations both within and outside the organization at an earlier stage (Chen et al., 2021), and an objective-driven learning goal orientation facilitates adaptability in staff (Kragt & Day, 2020). SMEs may gain knowledge from nearby sources, including peers, and from distant sources, including training (Puthusserry et al., 2020). These forms of learning introduce information from outside the organization (Audretsch et al., 2023), ensuring innovation. Reflection and experimenting learned in practice enhance resilience because firms undergo practice based on events that happen to them, thus developing resilience in their own experiences (Hossain et al., 2022; Magni et al., 2022). Both external and internal knowledge sources lead to better performance (Joseph & Dhanabhakayam, 2022), and the learning organization supports resilience. However, further detailed research on the processes is necessary (Castro & Zermeño, 2020).

Logic of effectual, causal and bricolage

Table 1. Logic of effectual, causal and bricolage

Logic of Effectual and Causal	Effectual Logic	Causal Logic	Bricolage
Learning	Emphasizes experiential, "effectual" learning approaches, utilizing unexpected outcomes and experimentation as part of the learning process. Prioritizes adaptation to the external environment.	Involves both immediate and long-term learning focused on aligning organizational capabilities with strategic goals.	Emphasizes adaptive, hands-on problem-solving with a "learn by doing" mindset. In post-pandemic contexts, it encourages learning from available resources and improvising when traditional resources are inaccessible.
Firm Resources	Focuses on making the most of existing resources. Expands resources through partnerships that form naturally and prior stakeholder commitments.	Utilizes resources to achieve established strategic objectives, with a focus on resource allocation aligned to planned outcomes.	Encourages creatively repurposing and combining readily available resources, especially under resource constraints. In post-pandemic startups, bricolage supports efficient resource use by making the most of local, low-cost inputs.
Organization	An action-focused, adaptable strategy that aims to shape the future through value creation. Identifies and seizes short-term, feasible opportunities. Encourages producing what can be sold. Embraces the "affordable loss" principle, managing risks to keep losses at a tolerable level.	A planning-centric approach, focusing on prediction, planning, and control with a long-term perspective. Measures success by return on investment.	Relies on spontaneous, flexible structures that evolve based on available tools and materials. Post-pandemic startups utilize bricolage to build nimble organizations that can pivot quickly in uncertain environments.
Partnerships	Sees partnerships as opportunities, allowing for collaboration with partners who contribute resources based on what they have available.	Forms partnerships to fulfill specific, pre-established market needs.	Builds alliances with unconventional or local sources, pooling community resources to adapt to challenges. Post-pandemic startups leverage bricolage to strengthen networks and access diverse, often low-cost resources.

Given that resource allocation determines learning, understanding how the rationalities of efficiency and effectiveness impact this process is crucial. Table 1 below compares the learning process, the use of resources, and the structure of an organization in terms of causal and effectual logic.

Promising strategies depict the learning process as a flexible process that helps organizations solve crisis problems or adapt to the environment (Vasconcelos Scazziota et al., 2020). If we categorize an organization's response as "positive" in organizational resilience, it significantly improves its ability to manage disruptions (Netz et al., 2020). Potential crisis responses within the framework of effectual logic include the implementation of controlled risk trials, the utilization of personal relationships and voluntary ties, practice-based learning, and the ability to adapt to external changes (Brownson et al., 2018; Lannon & Walsh, 2020; Royle, 2020; Smolka et al., 2018). Effectuation allows an organization to leverage environmental changes as opportunities for innovation and the creation of new strategies, processes, and products. This approach is action-based, flexible, adaptable, and efficiently utilizes available resources (Hauser et al., 2020; Yang et al., 2021). This approach fosters flexibility, forcing firms to work in partnerships, contain risks within a specific range, and use surprise as an opportunity enabler. On the other hand, causal logic is characterized by conventional resource management tendencies that are based on prediction, planning, and control (Shirokova et al., 2023). Causal logic employs structured learning approaches, including proximal and distal learning, to integrate the firm's capabilities with a strategic plan (Cooper, 2019). This setup allocates funding to achieve predetermined goals, aligning with prior strategized action plans to optimize results (Luthans & Broad, 2022; Ngigi, 2020; Vial, 2021). It promotes a utilitarian management approach in which an organization guides and directs its behavior in the future (Lin, 2020) According to the causal logic, organizations primarily create partnerships from a return on assets (ROA) perspective (Hauser et al., 2020) and design them to meet market needs.

Bricolage, a strategic approach that focuses on inventive and resourceful utilization of available organizational assets, is particularly effective for startups in the post-pandemic world. Unlike linear logic or cause-and-effect, bricolage is based on the principle of availability, which means being creative to use things that are already around for other purposes (Scuotto et al., 2022). (Andrew & Karetai, 2022) assert that bricolage fosters a mindset of "learn by doing" that stimulates hands-on learning through easily accessible, knowledgeable resources, particularly in situations where primary resources are limited or costly. Bricolage, common among startups, has been associated with dynamic organizational setups that flex with different circumstances to enhance the capacity for the necessary changes (Odegard, 2021). Furthermore, bricolage necessitates the engagement of nontraditional or community sources, assembling resources that may be easily accessible yet often overlooked. The collaborative nature of bricolage fosters the development of effective networks among startups, enabling them to access material and information that other entities would require at relatively low costs. This allows them to adapt flexibly to changes in exchange requirements in the post-Covid-19 world (Baier-Fuentes et al., 2023).

Materials and Methods

The current research utilizes a qualitative approach to investigate the experiences, coping mechanisms, and barriers in SME business ownership. Therefore, the current research methodology employs a thematic analysis to identify themes and significant patterns that can enhance our comprehension of the challenges faced by SME owners in today's business environment, especially those concerning sustainability and business resilience. We conducted semi-structured interviews with the SME business owners to gain a comprehensive understanding of their perspectives.

Data Collection

The data collection process for this study was thorough and meticulous. It included face-to-face interviews with business owners of SMEs from different sectors, ensuring a diverse range of perspectives. We conducted the interviews through Zoom video conferencing and face-to-face, acknowledging the professionals' busy schedules and facilitating elaborate responses. We first informed the participants about the study and their interest, then scheduled the Zoom interview through a phone call. The use of phone follow-up and the fixed Zoom interviews created a favorable environment for the participants, ensuring their comfort and willingness to share. Out of 15 interviews, each participant spent 45–60 minutes in the interview. This study adopted a semi-structured interview format, which allowed the participants to freely share their ideas and thoughts, given the advantages of this type of interview. On the other hand, the researcher could ask additional questions that he or she deemed relevant, given the responses made by the participants. Topics of interest were business issues and barriers, resilience and adaptation, and sustainable measures. We conducted all interviews with the participant's permission and taped them to ensure accurate viva voce transcription.

Data analysis

We systematically coded and sorted the data using Nvivo, a qualitative data analysis software. We performed thematic analysis to extract patterns of meanings from the interviews, following Braun and Clarke's (2006) six phases. The first acquaintance with the data followed these steps: rereading the transcripts several times to gain an overall sense of the texts and taking preliminary notes to identify key ideas immediately when studying the material. During the second phase, we systematically coded a specific data extract that corresponded to the research questions, and used Nvivo to sort these data segments into different categories for easy access and comparison. In the third phase, we scouted for themes by condensing the first generated codes into broader themes that captured patterns within the results. We determined the themes based on the frequency and importance of the codes. During the fourth phase of the study, we scrutinized each theme to ensure their coherence and consistency within and especially across the data. Since this step only involves collecting and analyzing a small amount of data, it necessitates the redefinition and merging of some themes, as well as the abandonment of others if there is insufficient data to support them. During the fifth phase, we established specific definitions for each theme based on the research questions, and gave them names that accurately described their purpose. Lasting for the sixth phase, the writing up was done, where a narrative was developed for each theme identified from the interviews together with supporting quotes from the interviewees to give an actual view of the participants while at the same time offering proof for the themes developed.

Credibility of data

The following measures were taken to increase the study's intensity and credibility. Information was collected from SME owners in different fields to ensure triangulation, hence the variety of responses. Member checking involved explaining the preliminary results to the participants to validate interpretations and meanings. Moreover, during the data analysis step, the reflective journal was retained to record and control the researcher's bias.

Ethical Considerations

This work adhered to the ethical principles outlined for qualitative research. Before the interviews, we obtained written consent from all participants. We assured the respondents that we would not attribute their results to them and would keep their answers secret. Therefore, we expunged any traceable person-related information and provided pseudonyms to all participants. The study procedure received approval from the institutional review board, and participants had the freedom to decline participation at any time.

Results

Table 2. Thematic codes

Main themes	Sub-themes	Description
Effectuation in Decision-Making	Real-time Adaptation	The process of making quick decisions based on immediate circumstances and available resources.
	Flexible Goal Adjustment	Adjusting or redefining goals in response to emerging opportunities or constraints during the crisis.
Causation in Strategic Planning	Long-Term Goal Setting	Establishing structured, goal-oriented plans to maintain focus on foundational business objectives.
	Risk Management	Utilizing structured approaches to mitigate risks and ensure continuity despite the crisis.
Bricolage in Resource Management	Resource Repurposing	Creatively reusing existing assets to solve unexpected challenges without additional costs.
	Role Flexibility	Reassigning team members to cover multiple roles, optimizing resources under constraints.
Resilience Strategies in Crisis	Supplier Diversification	Expanding supplier base to mitigate risks and maintain supply chain stability.
	Customer Retention Focus	Prioritizing customer retention and loyalty-building over short-term growth initiatives.
Innovation through Effectuation and Bricolage	Product Adaptation	Developing or modifying products to meet evolving consumer needs during the crisis.
	Process Innovation	Implementing new operational processes to address constraints creatively and efficiently.

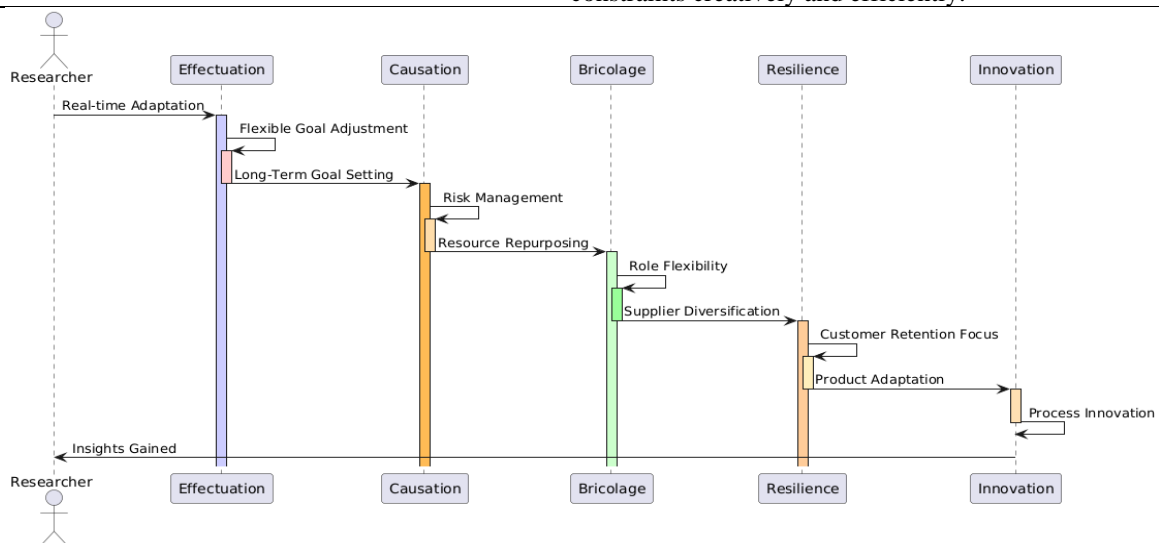


Figure 2: Themes of study

Hierarchical Analysis

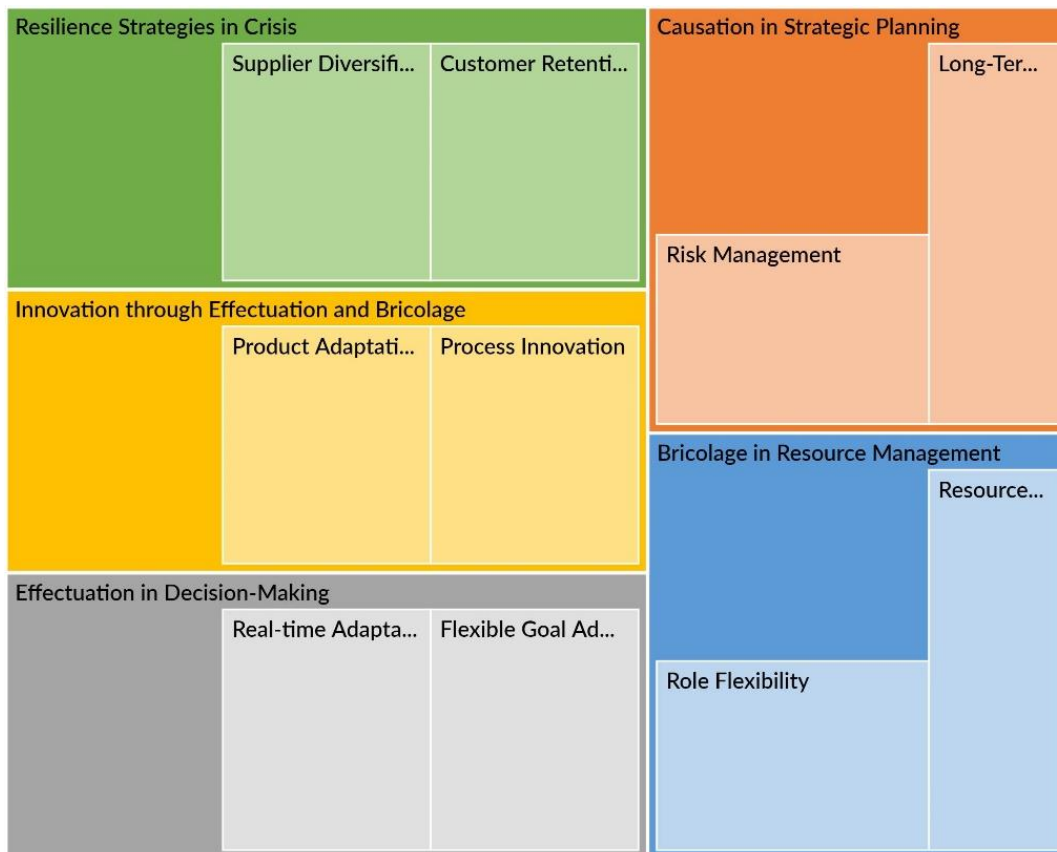


Figure 3: Hierarchical chart

The hierarchical chart in figure 3, illustrates the various strategic responses that firms formulate during crises, as inferred from the interview responses provided by various businesses.

Several firms have employed supplier diversification to prevent disruptions in their resilience strategies during crises. For instance, EcoNest Essentials acknowledged that they have expanded their supply sources to regularly acquire materials, thereby addressing their customers' ongoing logistical challenges. For PurePath Organics, the respondents stated that they have established a partnership with a local organic farm to source essential ingredients locally. This effect-based decision will decrease our dependency on suppliers from other countries and stabilize our inventory (Purepath Organics). Besides diversifying suppliers, many customers remained loyal during the pandemic, using the crisis as a chance to avoid market expansion. According to the figure below, VitalityBoost stated, "The pandemic changed our objectives to more about sustaining ourselves than growth; through effectuation, we were now able to address fundamental issues and the market as a buffer" (Vitality Boost). Similarly, PureLeaf Naturals reviewed its strategies and stated, "We opted for an implementation strategy, exerting efforts to maintain business and enhance customer relations rather than aggressively expanding our business." (PureLeaf Naturals)

Several businesses, as revealed in the Causation in Strategic Planning section, have implemented a structured causation approach to achieve long-term business success. FreshBloom Organics stated that the company and the growth plan were explained by stating that "our growth plans were to expand into new regions basing our

strategy on causation and a clear laid down plan, but due to the outbreak of COVID 19, our company had to change its strategy and focus on local supply chain systems.” Thus, EcoGood also reported: ‘At the beginning, we had goals based on the development of new markets and the creation of outlets—it was the causation type,’ but it changed to focus on the present resource (EcoGood). In risk management, companies use calculated risks to remain flexible. UrbanEats Fresh came to the conclusion that the crisis necessitated the implementation of effective decision-making, leading to the testing of new strategies based on current conditions. This approach improved customer service by offering a variety of new services and products during uncertain times (UrbanEats Fresh).

In innovation through effectuation and bricolage transmission, some firms, such as PureBloom Botanicals, were able to change their portfolios to meet the increasing demand for wellness products. They said, “By using effectuation, we end up modifying the environment we find ourselves in, adjusting for locally based products, and altering the product mix to what is in high consumer demand (PureBloom Botanicals). HealthHub Essentials also enhanced its services, stating, “We adapted our portfolio by adding more health and immunity products to better meet the needs of our customers (Health Hub).” Process innovation emerged as an important factor to support, and bricolage enabled the improvement of companies. Marketing commented, “We utilized bricolage to utilize the resources in ways they were not initially intended for; for example, shifting the budget from marketing to logistics as our strategic priorities changed” (Vitality Boost). EcoNest Essentials effaced supply chain management, saying, “We warehoused in our office to meet demand because there was very little warehouse space available” (EcoNest). In resource management, PureLeaf Naturals and HealthHub Essentials adopted a bricolage strategy, where various partnerships prove beneficial during periods of economic instability. PureLeaf Naturals stressed, “To eliminate dependency on foreign companies, PureLeaf Naturals sought to establish relationships with Midwest farms that sell organic herbs (PureLeaf Naturals). Regarding the perception of HealthHub Essentials, PureLeaf Naturals added, “One notable collaboration was with a local supplier who assisted in buying inventory that was gradually running out (Health Hub).” Additionally, the companies demonstrated role flexibility by training employees to perform diverse roles within the organization. The two firms disclosed that EcoNest Essentials said that they rotated employees to work in various positions, enabling efficient functioning and flexibility in response to variable resource endowments (EcoNest). Likewise, UrbanEats Fresh spoke with their workforce: “We trained the employees in multiple positions possible so that with a few people, we could easily manage the firm without much downtime.” (UrbanEats Fresh). Lastly, Effectuation in Decision-Making embraced real-time adaptation to accelerate the execution of changes that meet market needs. PurePath Organics strongly embraced the change, acknowledging that the rapidly changing environment compelled them to implement it. The fact that the effectuation process is highly flexible was most beneficial when it came to addressing the needs of the market and disruptions in the supply chain” (Purepath Organics). Similarly, VitalityBoost flexibly changed their approaches: “The crisis shifted us to an effectuation logic that means that the actions were made aimed at available resources and appeared circumstances rather than probable or expected in the future” (VitalityBoost). They also needed to be flexible in goal adjustment, as companies were constantly adjusting their short-term goals to enhance resilience. FreshBloom Organics said, “The fluidity between causation and effectuation was a critical aspect.” Therefore, when we mobilized our strategies to remain operational amid the COVID-19 pandemic, maintaining short-term focus was integral to our mission of presenting organic and sustainably sourced food to the market (FreshBloom). Similarly, in their interview, PureBloom Botanicals clarified the same: “Our long-term goal continued to be pinned on achieving steady yet healthy growth while maintaining the genuineness and authenticity of the brand” (causation). However, we implemented change by adapting our short-term strategies to better meet the needs of our customers. (PureBloom Botanicals).

Cluster Analysis

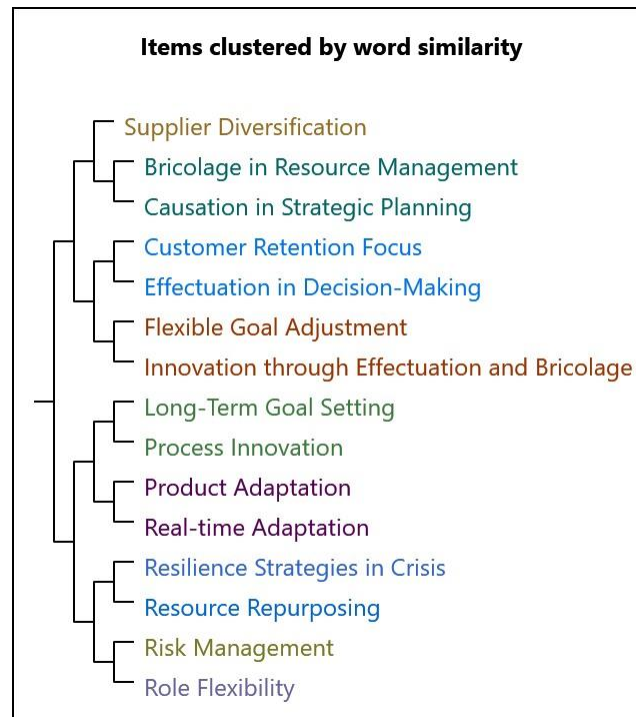


Figure 4: Cluster Analysis

Deriving from the cluster analysis Figure 4, it became apparent that most business strategies developed could be categorized according to the similarity of words used to describe how these companies dealt with issues of resilience, innovation and adaptability. Hence, each revealed cluster is based on the thematic aspects extracted from the interviews. The positioning of Supplier Diversification with Bricolage in Resource Management strikes out flexibility in sourcing and optimum utilization of available resources. As EcoNest Essentials said, “To mitigate this, we have sourced many of our international suppliers of eco-certifications locally... EcoNest: This local partnership strengthened our supply chain, enabling the company to keep up with the desired product supply.

Similarly, PurePath Organics observed that; Thus, we cooperated with a regional organic farm to obtain essential recipe ingredients. Therefore, This effectuation-based decision helped us minimize reliance on the supply from international suppliers and gain better inventory control”(Purepath Organics). These responses reveal critical practices identified in the literature, namely the search for local suppliers and the improved utilization of existing assets as two critical pandemic strategies businesses pursue.

The strong association of Causation in Strategic Planning and Customer Retention Focus indicates that organizations maintained formal planning alongside an immense focus on customer retention headquarters. VitalityBoost noted, “The pandemic changed our goals as businesses from top to bottom, making sustainability the new priority over growth... This way we are able to adapt in order to meet the current demand on the market”(Vitality Boost).

EcoGood similarly highlighted a shift in approach: “Our objectives, in the beginning, were designed to penetrate more markets across the companies’ value chain with particular emphasis on the retail segment, which is based on causation. Due to the pandemic, we had to divert our attention to improving our online platform and our service delivery of products”(EcoGood). This cluster demonstrates how organizations retained strategic plans while adapting other elements to foster customer loyalty and address short-term needs.

The smallest circle connects Effectuation in Decision-Making and Flexible Goal Adjustment in the chart as the two strategies are very intertwined and focus on the importance of an ability to change goals and adapt to the context quickly. FreshBloom Organics said- “It was challenging to meet the causation and effectuation objectives at the same time.” Even as we maintained our core mission of bringing in and providing organic, sustainable food, we had to constantly redefine ourselves by rearranging targets short-term for long-term sustenance, supply, and delivery (FreshBloom). In the Health Hub response, HealthHub Essentials talked about the adjustment they made to their decision-making, stating, “The crisis forced us to shift to an effectuation strategy wherein decisions are made based on the resources available and the conditions that come with the decision rather than making decisions based on predicting what should happen in the future.” Approach and adapt sort of remained the critical messages of both companies, with the flexibility of goals in real-time being highlighted as a need due to uncertainties.

This cluster indicates that innovation, effectuation, and bricolage were most similar to the long-term goals and the process innovation. PureBloom Botanicals responded, “In this case, we utilized effectuation where we changed local and Swedish strategies based on the current conditions and streamlined the products available for production based on demand plans”(PureBloom Botanicals). Long-term planning was evident in EcoGood’s response: “In the long-term, we kept our mission to create awareness and encourage sustainable living while in the short-term applying effectuation to adapt how we accomplished the mission, including changing products and supplies.” The interaction between the principles of effectuation and the pursuit of distant objectives makes it possible for these firms to create a competitive advantage while working within source constraints and remaining faithful to a core mission. The close positioning of Product Adaptation and Real-Time Adaptation demonstrates how firms changed their products according to customer needs. Fresh to the points mentioned by UrbanEats Fresh, they said, “This led us to engage in a process of effectuation by constantly changing our menu depending on the availability and demand,” which enabled them to overcome the challenges due to changes in the market environment (UrbanEats Fresh). PureLeaf Naturals said, “As such, we adapted and shifted our offerings in those areas, cutting through our product offer and expanding into online health consumer platforms to the growing customer interest in preventative health.” Such statements indicate how flexibility in changing the portfolio’s content gradually shifted to the core value proposition.

Finally, Resilience Strategies in Crisis, Resource Repurposing, and Risk Management sit in this cluster, illustrating resource-mobility strategy ideas for managing risks and continuing operations. VitalityBoost provides examples of bricolage: “In order to avoid excessive expenditure on logistics which incurred huge amount of money on transportation of products, we transform the office space into temporary storage area for those products that being sold frequently.” Likewise, resource repurposing was followed by PureLeaf Naturals through seizing office space, which was not helpful and transforming it into a production area in order to manage the intensified demand without occupying the warehouse. These strategies show how firms provided psychological contracts that met the risk and resilience when operating under pressure. Role Flexibility is clubbed into this category, but it was paramount to implementing resilience across many industries. As per EcoNest Essentials, there was a practice of cross-utilization of employees to ensure that there was an equilibration of responsibilities, which helped in managing all the operations effectively and there is the management of resources in case of a change in the availability of raw materials. UrbanEats Fresh said, “We also cross-trained our employees, which helped our team be versatile so if one position was short-staffed, we could stay efficient with fewer workers”(UrbanEats Fresh). Blurred organizational structure and flexibility allowed firms to address tasks effectively and not always require new employees. This cluster analysis diagram shows a congruent set of strategies whereby causation, effectuation and bricolage were intertwined, making it possible for companies to deal with crises by deploying sequential planned processes punctuated with

constraints. For instance, PureBloom Botanicals explained it as: “By using bricolage we converted the office spaces that were idle for product assembly and packaging, thereby enhancing the production line without incurring further expenses”(PureBloom Botanicals). UrbanEats Fresh, completed that they “converted our office to a delivery hub where we were able to accommodate for greater capacity without the additional need for a new building”(UrbanEats Fresh). These examples illustrate that bricolage is a key resilience strategy for managing scarce resources optimally.

The domain of effectuation is also quite dominant in the word cloud, pointing to the real-time decision-making that was crucial during the pandemic. As EcoNest Essentials commented, “We used effectuation post-entrée: modifying our offerings where they lacked effectiveness – shifting from selling wall insulation to offering home care needs goods that were popular such as organic soaps for cleaning”(EcoNest). This approach kept companies engaged and able to quickly respond to the changes in the market without having to overspend on assets. Furthermore, in the PureLeaf Naturals’ interview, they expounded how they relied on effectuation during the pandemic to quickly adapt to change saying, PureLeaf Naturals. Other important words in the cloud include pandemic and causation, which are fundamental planning strategies many companies use before changing their approach. This is evident in EcoGood’s policy: “Although the business was set to operate through causation here the long-term vision entailed, the volatile nature of the outbreak necessitates effectuation centric planning.” FreshBloom Organics similarly emphasized the importance of maintaining a core vision through causation while using effectuation to adjust short-term strategies: “When it comes to the COVID-19 crisis response, FreshBloom notes that, ‘While maintaining our long-term vision of selling organic, locally-sourced products that are not only healthy for consumers but also environmentally sustainable, we were forced to make short-term changes to our objectives to remain relevant in the supply and delivery market,’ ”. These examples show how and when business leaders merged sustainable strategy with timely actions and reactions to address the crisis adequately. In addition, flexibility, adaptability, and innovation flexibility, which are underlined in the word cloud, show how the companies fulfilled a new demand. PureBloom Botanicals noted, “The crisis made PureBloom Botanicals embrace effectuation to decide on available resources or based on needs at the time of crisis” (PureBloom Botanicals). VitalityBoost expressed similar opinions, saying, “It is for this reason that we have embraced effectuation as part of our business model that will help in the short run and long run planning.”(Vitality Boost). Because of this flexibility, organizations could deal with daily issues while maintaining sight of the strategic long-term objectives. The term cloud shows a combination of strategies with causation stability, the flexibility of the effectuation process, and the creative use of resources in bricolage. Combined, these strategies assisted organizations in continuing and adapting both practically and strategically and being agile enough to shift quickly due to the ever-moderating conditions the crisis exposed them to while positioning them to recover from the precipitating circumstances.

Discussion

Analysis of specific adaptive strategies businesses use during the COVID-19 pandemic also shows that actual causation, effectuation, and Bricolage are intertwined in the broad discussion of business solutions. The conditions caused by the pandemic meant that supply chains and customer preferences were altered, and operational factors could not be foreseen, which made traditional structures and approaches to business continuity inadequate. Closely related to the contingencies described in this paper, the themes of causation, effectuation, and Bricolage proved to be pivotal resources for companies seeking to make sense of their operating environment and develop ways to adapt in the face of constraints. At the backbone, causation offered a premise for a strategic outlook and long-term objectives. Most organizations started in an attempt to pursue a

broader audience or add new product types within planned frameworks based on causation. For instance, FreshBloom Organics was founded with growth-oriented goals but discovered that achieving these goals requires adapting when the companies encounter unforeseeable and pressing problems (FreshBloom) (EcoGood). Causation was thus the beacon that helped organizations stay on target and relevant to their missions, whether health and longevity or sustainable living while recalibrating the operating strategies for protecting revenue and clients. Thus, dependability restricted adaptability occasionally by fixed causation, which forced companies to introduce effectuation into their strategy.

Effectuation emerged as a set of guidelines indispensable for companies required to be agile in a turbulent environment. Effectuation follows the organization's resources and chooses the path to take at that time rather than following a set vision. Therefore, flexibility in organizational change has been made possible through this shift in mindset, which has favored speedy compliance with the dynamic demands of the pandemic. For example, in their strategy and objectives, PurePath Organics emphasized the concept of effectuation, saying that they abandoned the grand plan of steady growth and adopted the strategy of stability with a focus on flexibility in sourcing and product portfolio. Purepath Organics Likewise, HealthHub Essentials also looked at how they could leverage effectuation by moving their products to the higher-demand market of health and immunity products to show how effectuation made possible market-relevant decisions that would allow continuity (Health Hub). Taken collectively, effectuation offered firms the ability to change course as needed, and as such, flexibility became a strength rather than uncertainty, particularly in the face of the pandemic. Another important resilience style identified was Bricolage, which promotes the efficient use of available resources to undertake actualizations. In circumstances requiring constraint, management employed bricolage where firms used existing resources and people in unconventional yet productive ways, all without increased expenses. This resourcefulness and innovation, promoted by bricolage, allowed companies to continue producing without the ability to go out and acquire resources. Bricolage indeed supported the process of effectuation, as both were built on the ideas of flexibility and the ability to use only available resources without additional investments.

The combination of causation, effectuation, and Bricolage was the key to companies staying viable during the pandemic. The rationale for using causation was that it facilitated the provision of substantive guidance for long-term strategies and thinking. However, in operation, the focus was on effectuation and use of Bricolage. These frameworks helped strike a medium crisis management platform that saw companies keep their objectives and corporate values in check but flex their operations according to current needs. In some instances, the pandemic changed thinking about the future by integrating flexibility as many organizations' next core strategic element. For example, UrbanEats Fresh stated that they had learned the virtues of flexibility and proactivity in their current business operations by flexibly designing ways to overcome barriers. (UrbanEats Fresh)

Therefore, the analysis of organizational changes that resulted from the pandemic supports the creation of more complex resilience than simply adding rigidity to the plans and fear of creativity and RA. With the help of causation integrated with effectuation and Bricolage, resilience has become a valuable and continuous process that has transformed companies' approaches to becoming resilient, seeing resilience as the ability to adapt, mobilize resources and respond to new conditions constantly. They have not only shown the best practices as to how crises can be managed effectively but have also provided modules for preparing for the next crisis, More organizations are cognizant of the fact that while operations and management have to be dynamic and flexible, they cannot lose sight of the purpose and the values system for which they have been set up. The stories told in these interviews provide a blueprint for organizations wishing to adapt and grow or to survive in a global environment that appears to be becoming less predictable.

Conclusions

Thus, this investigation depicts how organizations of different industries have responded to the unprecedented shocks of COVID-19 through causation, effectuation, and bricolage. Although business planning, to a certain degree, achieved rationality and structuring of long-term strategic objectives aligned with causation, the context was characterized by high volatility, which forced companies to rely on a more loosely linked and fluid concept of planning. Effectuation helped to promote decision-making at the operational level. Given the market changes, they could use the available resources to make critical decisions without being bounded by plans that would only limit them. Bricolage added to these benefits by encouraging the creative use of available resources, enabling companies to continue functioning and sometimes coming up with solutions even within narrowly defined conditions. Adaptability emerges as a key to crisis management when discussing this multi-dimensional perspective of the structuring of resilience. This suggests that the more traditional, structural approach to crisis management planning may need to be more effective in rapidly evolving environments. By blending effectuation and bricolage with causation, organizations were able to maintain their purposes and missions while also being adaptive and innovative. This innovative approach offers them the best chance of managing the crisis. Consequently, a significant number of organizations have shifted the focus of their definition of resilience to the ongoing and adaptive one, which emphasizes adaptability, creativity, and flexibility. The conclusion derived from this study is beneficial for the conclusion of the current study for those who want to develop a resilience strategy in future crises for their respective business. When solving complex tasks, companies may orient both at the use of rational Vojvodjanski (2004) planning approaches and, at the same time, employ adaptable and creative methods of organizing in order to react to the existing vaguenesses actively, and, in this way, create a value that will help a firm to benefit from troubled times. This research, therefore, adds knowledge to the body of literature on crisis management to provide practices that can help organizations strengthen their positions in the face of the increasing occurrence of crises worldwide.

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Consent to Participate: Informed consent was obtained from all individual participants included in the study. Participants were assured of the confidentiality of their responses and their right to withdraw from the study at any time without any repercussions.

Consent for Publication: All participants provided written consent for the publication of their anonymized responses. No identifiable personal information has been included in this study to protect the privacy of the participants.

Data Availability: The datasets generated and/or analyzed during the current study are available from the corresponding author on reasonable request. Due to confidentiality agreements and privacy concerns, the raw data will not be publicly available but can be accessed by contacting alizatabassum@gmail.com.

Author Contributions: Aliza Tabassam was solely responsible for the conception and design of the study, data collection, data analysis, interpretation of results, and drafting of the manuscript. No other authors contributed to this work.

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