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# How Large-established Joint Venture Firm Remains Resilient in a Disruptive Era: A Process Tracing Case Study

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**Abstract.** The crises have spread out globally and have impacted industries, either large firms or small firms. These impacts make the firms economically in intense trouble or file bankruptcies and lay off their employees, as their incomes are falling significantly globally. Therefore, this study investigates how businesses can improve their resilience and be prepared to cope with crises and threats in this disruptive era. What were the strategies the firm has implemented?. The authors have conducted this research in PT Alpha by using the process Tracing case study method in semi-structured interviews with eight critical respondents in ten in-depth interviews, split into a pilot study and the triangulation period based on those initial inputs. The authors have used process tracing analysis to test the evidence. The results showed that the major businesses need to concentrate on the three phases as a process, i.e., preparation and anticipation, coping and improvisation, and recovery and transformation, to be resilient (it is an enhancement of the concept of Duchek, 2020). To have a more comprehensive view, the authors have extended the research from the economic crises in 1998 and 2008 till 2019; thus, the process-tracing case study is a suitable method. This method has been used a lot for historical settings. This paper recommends further research to expand the studies to other large established companies in similar segments or other segments.

**Keywords:** Crises, Process-Tracing, Anticipation, Coping, Transformation

## INTRODUCTION

It is not easy to be an organization that can withstand shocks because the world is increasingly unpredictable quicker than resilient businesses. As a consequence of market turmoil, technological turbulence, and competitive intensity (Jaworski and Kohli, 1993: p.55), companies must adapt to their sales and strategies (Homburg and Pflesser, 2000). Companies face more severe and significant disturbances (William et al., 2017), both familiar and unfamiliar phenomena (Amankwah-Amoah et al., 2020).

If these shocks or changes start to plague the company at its threshold level, anomalies or organizational weakening may arise if they are misunderstood and discounted, resulting in a company crisis (William et al., 2017). Over the last century in S&P Index, the large firm lifetime has decreased by 50 years from 1920 to 2020. Nearly three-quarters will be new companies (Cavaco, 2016). Amankwah-Amoah et al. (2020) predicted that the year 2020 had been projected to “set a record for called mega bankruptcies” due to Covid-19. Likewise, in Indonesia, the bankruptcies are about 600+ to 800+ companies every year, as shown in Figure 1 (Appendix I) (Dun & Bradstreet Worldwide Network, 2019).

The question now, how large companies cope with such crises and still survive? Could they utilize existing strategies to maximize successful adaptation to different contexts? Such questions are still valid points for discussing the Organizational resilience topic connected with threats or crises.

The concept of crisis thus helps to resolve organizational resilience. If organizational resilience is conceptualized as an outcome and a crisis-related

outcome, organizational resilience will emerge during the crisis. This means that resilience is connected to the outcome that organizations do well through crises or interruptions (e.g., Horne and Orr 1998) (Duchek, 2020:p.216). On the other hand, if resilience is conceptualized as a process and related crisis-as-a-process, it would be situated before the crisis. Then, the actors can prepare it before the crisis occurs. Consequently, a firm must check their firm actor’s capabilities to interact with such external adversities before the crisis, in crisis, and post the crisis (William et al., 2017).

Most current organizational resilience studies focus on organizational characteristics or resources that appear significant for resilience (Duchek, 2020:p.216). It reflects that organizational resilience as an outcome. However, what is uncertain is what strong companies do and how organizational resilience can be exercised in reality? (Boin and van Eeten, 2013; Duit, 2016). Organizations need to find causal processes to create organizational resilience while understanding how they stay resilient.

Research on organizational resilience as a process is still restricted (Ruiz-Martin et al., 2018: p.15), and only a few researchers have attempted to explain the resilience process in detail (Duchek, 2020:p.221). Duchek (2020:p.224) answers this by proposing a conceptual framework based on these three stages of resilience (anticipation, coping, and adaptation) and capabilities that underline these stages. Referring to her concept, the authors have seen some limitations. If the organization has identified weak signals of the threat, it should prepare a solution or a mitigating solution. Converse to her framework, in the pre-crisis stage, it has not been shown. As such, the

development of the required solution is missing in her framework. Instead, she suggests that coping capabilities lie in the period when unexpected events occur. This framework needs some modification because it will be too late if solutions are made and implemented during a crisis. The timeline for sufficient to develop a solution can refer to a more stable period (Dervitsiotis, 2003: p.264). Duchek's (2020:p.224) study is related to a conceptual framework.

In the context of joint ventures, there are limited studies. As per the authors' knowledge, only Pal (2013) studied empirically to develop organizational resilience by suggesting diversification through alliance or joint venture. Their empirical findings show that most of the firms operated on a joint venture (JV) at low-cost bases are resilient (Pal, 2013: p.107). Unfortunately, they do not specify how joint ventures different from other firms, likewise, about the firms in the disruptive era.

This paper aims to fill such a gap and to answer how large established joint ventures remain resilient in a disruptive era. This gap is also aligned with Annarelli and Nonino's (2016) future research agenda that suggests that anticipatory innovation enhances resilience and strategic approaches and dynamic capabilities for becoming a resilient organization. The authors will suggest the capabilities built on the process that create causal mechanisms to face the crises in these three processes and the other crucial factors. The concept of organizational resilience is the relevant literature to answer organizational survival. In the authors' framework, leadership and followership interactions are critical to the three processes. Moreover, the study in a large firm context in Indonesia has not been carried out. To date, there is one organizational resilience study (Suryaningtyas et al., 2019) which studies organizational resilience and organizational performance, examining the mediating role of resilient leadership and organizational culture in 3-star hotels and resorts in two towns in East Java, Indonesia.

This study uses the process-tracing method, and according to the authors' knowledge, it is used a few in business and management research. Hence, this research will also add to business and management literature, particularly of the process-tracing method. So, the authors will fill the gap in organizational resilience literature by completing this paper.

### **How Large Established Firms and Joint Ventures Remain Resilient in Disruptive Era?**

In this section, the authors will discuss (1) How large established firms and joint ventures remain resilient in the disruptive era; (2) What drives firms and joint ventures to survive in the disruptive era? An established firm means a company that has existed for an extended period and is respected or trusted by people. A firm qualifies as large to meet at least two of the following criteria: more than 250 employees and more than \$47.5 million in turnover than \$23 million in balance sheet overall. A joint venture is a business operation in which two or more firms

have co-invested (Longman's online dictionary). Disruption is what a firm faces when the choices that once drove a firm's success now become those that destroy its future (Gan, 2016). In this paper, the authors define the disruptive era as the combination of technological changes, hyper-competition caused by new players' entrants, and global crises, which combine them into multiple crises

### **How Large Established firms remain resilient in the disruptive era?**

To identify the organizational-resilience definition and factors that affect it, the authors have reviewed the literature. The search was based on 34 papers from the Proquest and Google Scholar databases and filtered the Published and Perished tools to find the relevant papers (Hirsch h-index) with the search of "organizational resilience" or "resilient organization." The definitions and frameworks found are summarized in Appendix II.

Two main concepts are found to develop organizational resilience. First, organizational resilience is a combination of resilience as a feature, as an outcome, and a measure of disturbance that an organization can tolerate and persist (Ruiz-Martin et al., 2018). Resilience as a feature refers to something owned by the firm. Resilience as an outcome means something an organization does. Second, combining reactive and proactive capabilities can achieve organizational resilience—few scholars support this concept (Duchek, 2020: p.238; Madni and Jackson, 2009; Burnard and Bhamra, 2011; Chu, 2015; Blanco and Botella, 2016).

Moreover, to be resilient, few factors affect organizations, such as capabilities built on-process (van Breda, 2016; Tengblad and Oudhuis, 2018: p.235), influencing elements, and organizational interventions (Xu and Kajikawa, 2018:p.239), that collectively drive organizational resilience. While influencing elements are characterized by the time they exert, the system resilience, and the roots in which they are constructed, they can be split into internal and external, rapid or slow elements (Xu and Kajikawa, 2018:p.239).

Both elements (internal and external) can be split into three stages: pre-crisis, crisis, and post-crisis. Suppose the forces that influence the external element increase and the company's capacities are adequate for responding to external forces. The disturbance tolerance threshold of an organization (Limnios et al., 2014) is not exceeded, then the organization persists. However, if this is not the case, the organization might fail (Xu and Kajikawa, 2018:p.241). This disturbance tolerance refers to adaptive capacity, absorption, and resistance to change (Limnios et al., 2014), which means the degree to which current disturbances can survive. The authors consider organizational legacy as a mixture of adaptive capacity and absorption capacity of Morais et al. (2018).

Dervitsiotis (2003) argues that organizations should follow dual management modes to handle periods of stability and periods of turbulence (quoted

from Limnios et al., 2014: p.106) or, in the sense of Hamel and Valikangas (2003), argued that management should have the capacity to change before the change situation became apparent. Therefore, the pre-crisis period can be divided into two timelines: (1) adequate to find solutions to the crisis or stable period; and (2) there is not enough time to find a solution to the crisis.

Duchek's (2020:p.238) findings show that only a combination of three-stage capabilities can lead to a resilient organization. The large resilient-organization must have proactive abilities (anticipation capability) and reactive abilities (ability to survive) and adapt, supported by cognitive knowledge and behavior influenced by previous experience as the main antecedents. Also, the availability of resources, social resources, and power and responsibility are the main drivers. The anticipation capabilities as the source of resilience are further supported by few scholars (Rerup, 2001:p.1; McManus et al., 2008:p.82; Teixeira and Werther Jr, 2003:p.333; Carayannis et al., 2014:p.458; Winnard et al., 2014; Sawalha, 2015:p.347; Blanco and Botella, 2016:p.17).

As disruption takes time, incumbents also underestimate disruptors (new entrants) who construct business models that are very different from incumbents (Christensen et al., 2016). The company fails to adapt (Christensen, 2016:p. 97) and has no plans to deal with it, affecting the revenue stream, under threat when the disruption arises. Businesses are losing freedom and capital in order to build radical new opportunities.

The dilemma is that solving these opportunities for disruption needs transformation—businesses founded on these emerging models would work radically different from today's incumbent businesses. Contrary to incremental innovation, citing Molina-Morales (2017), disruptions create fundamental changes, technical developments, obviously divergent from current activities (Ettlie, 1983; Ettlie, Bridges, and O'Keefe, 1984). Although the transformation is challenging, existing (established) businesses are expected to survive if they have the urgency and vision to get ahead of the disruption. They need to anticipate it by building awareness, beginning with understanding the different global trends and industry forces to develop a shared future view (Deloitte, 2016).

### **How Large Established Joint-Ventures remain resilient after the disruptive era?**

The challenges encountered in a joint venture are typically more diverse than a non-joint venture since two firms or more must work together to achieve shared objectives. For example, inconsistencies in the business plan, a mismatch between business interests and priorities, lack of engagement, unclear governance, issues with talent, and organizational inefficiencies are some. In addition to challenges, joint ventures can include several conveniences in running a company, including risk-sharing, the opportunity to exit, obtain a larger market, acquire or share

knowledge, or be used to address cultural, political, or legal (international) constraints (Kent, 1991).

In the face of disruptive era challenges, the course taken by a joint venture firm is almost the same as that pursued by a non-joint venture company. A joint venture corporation has more benefits to deal with since it combines the different firms' strengths. However, this will happen if the joint venture company can resolve the various challenges mentioned above

### **Resilience Capabilities**

In this section, the authors aim to examine the information, the stages and the resources needed to achieve resilience, and the accompanying theories. Also, those capabilities that are built on the process must be prepared to solve the crisis and must begin even before the crisis occurs effectively when the threat occurs and continues after the threat ends (Duchek, 2020, William et al., 2017; Linnenluecke et al., 2012; Alliger et al., 2015).

### **Capabilities of pre-crisis (Anticipation Capabilities)**

Duchek's framework can observe and identify and prepare functions that are limited to predicting unexpected events. The authors see some drawbacks in this model. If the organization has sensed a weak signal (warning) of the threat, the company must respond quickly to deal with the threat. One's framework does not suggest any solution in this context. Preparations for finding suitable alternatives at this stage were also unanticipated. Therefore, it is essential to adapt the Duchek (2020:p.224) framework, which focuses only on three stages (pre-crisis, crisis, and post-crisis) of the threat, without considering the stabilization period as part of the threat stage of survival. Getting the right views on these threats, whether sooner or later or with a high or low impact, is essential to accurately recognize the company's response to this threat or crisis (Tengblad and Oudhuis, 2018).

Conversely, the ability to find solutions appears when a crisis occurs. Nevertheless, it will always be too late to face threats, and it will not be effortless for the company to get past them. It is contrary to other scholars' concepts who argue that: at the pre-crisis stage, it is essential to develop solutions since when a crisis happens is limited to improvisation (Rerup, 2001:p.7). Furthermore, firms should have taken steps to foresee potential risks. Such action should be taken without first involving stakeholders (Xu and Kajikawa, 2018:p.248). Therefore, the ability to observe and identify potential threats of Duchek (2020:p.225) is still necessary, but they must be followed by developing effective solutions to anticipate them. These appropriate steps should be taken immediately so that damages, dangers, pressures, and costs can be reduced when threats do occur (Ortiz-de-Mandojana and Bansal 2016).

The arguments referred to the above lead to the following propositions:

P1a1: The more robust the ability to detect threats and develop solutions, the stronger the



company's ability to face and anticipate potential threats (Tengblad and Oudhuis, 2018: p.235).

P1a2: In the un-sufficient (short time) time to create mitigation solution, the stronger the firm-anticipation-capabilities being built in the process, the more resilience of an organization.

P3: Identification and mitigation solution creation increase anticipation capabilities.

P3a: The earlier an organization can recognize a threat, the better it can minimize or respond to the threat.

P3b1: The faster a solution is developed within sufficient time, the more likely it will succeed.

P3b2: The earlier the implementation of mitigation solution created in un-sufficient time, the more robust organizational resilience.

P3c: The better the organization can identify, analyze, plan, and create a solution, the better the anticipation process.

P3d: At sufficient time to create a solution, the anticipation processes will be enhanced by the anticipation mechanism's improved quality (Sub-Mech 1).

### **Capabilities of in-crisis (Coping Capabilities)**

At this point, Duchek limits its ability to embrace and creates, and executes solutions. The authors have found some drawbacks in this definition. Companies need to establish capabilities, such as assessment and response strategies (Xu and Kajikawa, 2018:p.249). For the assessment, it should be recognized that the perception of disturbance is either rapid or slow to respond either quickly or slowly (Xu and Kajikawa, 2018:p.248). Duchek (2020:p.224) suggested that an aggressive response during a crisis and the willingness to resolve problems allow organizations to respond well to disruptions and formulate and execute solutions. The company must overcome unexpected situations; this ability by Rerup is called Improvisation (Rerup, 2001:p.7). He highlights that it is necessary to assess the vulnerabilities in areas that have not been historically tested or anticipated. In this case, the mechanism needed is as follows: conducting an assessment and response strategy, designing influential roles and responsibilities, coordinating mechanisms, and identifying and implementing mitigating solutions. This mechanism is consistent with the principle of power and responsibility put forward by Duchek (2020:p.237), that is to say, the development of clear roles and responsibilities, following the identification of assessments and response strategies, identifying specific roles and responsibilities immediately.

The discussion referred to above leads to the following proposals:

P4: The more skilled organization has in the Coping stage, the greater the coping process.

P4a: The more robust the mechanism's consistency, the greater the coping process, beginning with the assessment and response strategies, the design of appropriate roles and responsibilities, the creation of coordination mechanisms, and the development and

implementation of mitigating solutions.

### **Capabilities of post-crisis (Adaptation-Transformation Capabilities)**

This adaptation refers to adapting to post-crisis situations or making changes to organizational resilience (Limnios et al., 2014) (quoted in Duchek, 2020:p.230). The ability to reflect and learn at this stage is beneficial by reflecting on a crisis that is viewed as a reflection process based on experience that has taken place so that it is carefully and thoroughly evaluated. Duchek's intention refers to the adaptation as the willingness to adjust only by responding to circumstances after the turbulence happened without emphasizing the future's vision (Rowold and Schlotz, 2009: p.36). In other words, organizations with adaptive capacities do not perceive the environment passively and are rebuilt in understanding and acting on the environment to transform the conditions they adapt to. Transformation helps organizations keep pace with ever-changing demand and anticipate change (Staber and Sydow, 2002: p.410). Therefore, adaptation shall be followed by transformation since it allows organizations to keep up with change without neglecting a sound and entrepreneurial strategic planning process (Demmer et al., 2011).(as Figure 2).

Adaptation capability can provide insight into past and present events in learning activities, which serve as a guideline for future action (Daudelin, 1997: p. 39), as cited by Duchek (2020:p.230). Changing behavior after a crisis without cognitive development will not be enough to improve the actors' behavior. Moreover, organizations must have an anticipatory or proactive strategy that requires awareness and learning skills. This suggestion is in line with Tobing and Fitriati's (2009: p. 27) results: companies' characteristics of willingness to continue to learn deeply would be prepared to grow and respond to changes in the business environment.

Duchek (2020: p.232) argues that organizational change is at the center of its stability (Ates and Bititci, 2011). Changes in response to unexpected circumstances, such as organizational transformations, may lead to resistance. To address the resistance requires significant adaptation (Dayton, 2004) and is rooted in individual resistance (Seville, 2018). As organizations require individuals and teams to deal with the crisis, employee strength must build organizational resilience (Linnenluecke, 2017; Coutu, 2002). They maintain the mental strength of employees (Luthans, 2002). If the motivation for work is low, it needs to be improved (Duchek, 2020:p.232). In this context, it is imperative to pay attention to the interaction of followers with leaders.

Also, Xu and Kajikawa (2018:p.248) add that while the system (organization) cannot restore external disruptions, interventions such as adaptive governance and management need to be modified effectively. Adaptive governance is creating adaptation and change in socio-ecological environments, but the process is relatively long (Walker et al. 2004).

This discussion, therefore, leads to the following proposition:

P1: The greater the organization's capabilities in inseparable stages (anticipation, coping, adaptation-transformation), the more resilient the firm will be (Duchek, 2020: p.232).

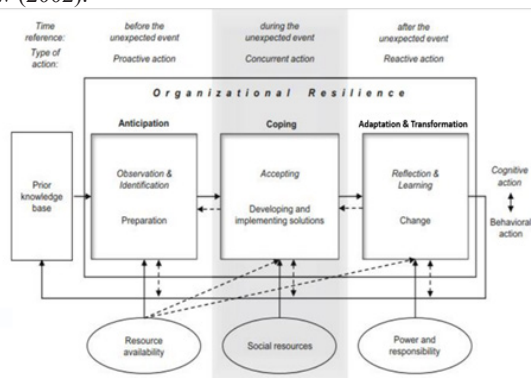
P1b: The greater the ability to cope, the more the organization's resilience.

P1c: The more robust the capacity to adapt, which is followed by transformation, the more resilient organization is.

P2a: The more anticipatory capability is built, the greater the coping capability (Duchek 2020:p.232).

P2b: The more coping capability is built, the greater the adaptation capability (Duchek, 2020:p.232).

**Figure 2.** Adapted framework based on Duchek (2020) and Sydow (2002).



P2c: The more adaptation (transformation) capability is built, the greater the anticipation capability (Duchek, 2020:p.232).

P5: The more consistency of the skills needed in this phase (long-term management, modification of strategic planning) is improved, the stronger the adaptation process (transformation).

P5a: The Adaptation & Transformation processes will be enhanced by the mechanism's improved quality (Sub-Mech 3). Sub-mechanism 3 is the ability to adapt through management changes, long-term governance, strategic alignment and planning, the maintenance of factors/components that play a role in recovery and keep the system flexible.

P6: The more substantial the organizational knowledge base, the more robust capabilities on anticipation, coping, and adaptation-transformation is (Duchek, 2020:p.235).

## RESEARCH METHOD

This study is a case study using a deductive process-tracing method to test the framework. Process tracing is used to grasp the HOW of cause and effect and get a deeper understanding of theoretical concepts. As Derek Beach points out, tracing the steps of the causal mechanism between X and Y is why the authors would like to participate in the first place (Trampusch and Palier, 2016); this is especially important in cases where longitudinal data is available.

Also, this method provides benefits such as: (1)

if a process is to be traced, it can help to clarify the mechanisms of change (Tulia Falli); (2) if it is mentioned that the context and time are essential (Beach and Pedersen, 2013); (4) A researcher can make strong within-case inferences about why an outcome came about (Beach and Pedersen, 2013).

Contrarily to the benefits, the authors identified some drawbacks, such as (1) the confusion of what process-tracing methods are tracing (either minimalist process-tracing or system process-tracing) and how the authors know fair process tracing when the authors see it in practice; (2) Identifying the right hypotheses about mechanisms is a challenge and depends on theoretical and practical knowledge of the domain under investigation; (3) How do we know when we can end the analysis.

**Figure 3.** Method Process Flow



## The sequence of Applied Method

The boxes are clarified as follows:

**(1) Determine the correct candidates of the respondents.**

Yin's one-phase approach (Yin, 2014: p.95) is used to test qualifying candidates: (1) they are senior managers or retired senior managers in the organization (at least five years with the company); (2) the selection of qualified informants using the snowball effect: the CEO nominated another respondent, and so on; (3) at least three clusters of informants of various qualifications (Management, Sales & Project and Engineering); (4) As the information was searched in 1998/1999 (Asian Financial Crisis), the former Plant Directors responsible for that time were selected as qualified informants. Eight respondents were selected based on the criteria listed above. The summary of the respondents is shown in Appendix III.

## (2) Data Collection

Authors conducted in-depth interviews to collect information from respondents through face-to-face or telephone interviews (Patrick and James, 2004: p.262). The authors used two phases: (1) A pilot study. Identify the business's challenges or anxieties and how the company has succeeded in this turbulent era (the authors interviewed four respondents representing the first three clusters), starting in November 2018 till July 2020. (2) The authors extended four additional respondents responsible for the plant during those crises and triangulated the details. During data collection, there was a helping situation in the interviewing period because one of the authors had a specific role in the organization and was an employee and a management member from 1992 to 1997.

The data collection was as follows: (1) the initial condition of the organization to see the starting point of the process; (2) the qualitative data contained the declaration of the respondent. These data may be evidence of a process-tracing that needs two aspects: the

necessary conditions and uniqueness, such as applying evidence to support or undermine the theory (Collier, 2011: p.825).

The following questions were addressed in the interviews: (1) What is the greatest challenge or threat to the company? (2) What causes the threat to arise? (3) How did the company survive such an adverse situation? What intervention strategies are used to ensure the resilience of the company? The tracing process is necessary to verify if the respondents' answers are related to the hypothesized processes and the relevant claims.

**(3) Identify and testing data**

Process tracing is initiated based on theory and then assesses the empirical data by contrasting case evidence with theoretical predictions. Researchers gather evidence that is corroborating and contradictory and determines the degree to which it is consistent with the hypothesis. Process-tracers bring more emphasis on dynamics and is less parsimonious in theorizing. They are interested in analyzing change, process, and feedback (Trampusch and Palier, 2016: p. 9).

As suggested by Patrick and James (2004: p.262), the general stages of process tracing consists of four stages: (1) Collecting data, as previously explained in the Data Collection section. (2) Transcription, integration, and segmentation of data are converted into a timeline filter. (3) Coding. (4) Further analysis and data representation from stage 3 (coding) will be discussed. The next step is to analyze the threat/crisis's impact on the organization, where: the authors indicate that the company faced crises as the cause (apart from the initial state of the process, the challenges faced, how they faced them), and how they remained resilient as an outcome (called o1).

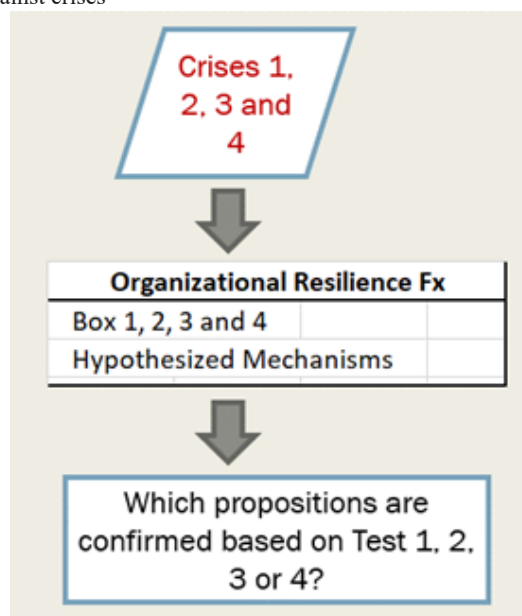
The authors then discuss the effect of crises in the context of the three stages of organizational resilience in the second stage, particularly exploring how the (hypothesized) causal mechanism processes in crises that make a company survive. Next step, propositions (including the mechanism) will be checked against the evidence based on the data collection guidelines (van Evera, 2017). The findings are weighed for each part of the mechanism to create cases that provide confidence. So any part of the mechanism exists or is not related to the event.

Finally, the test results will be summarized in a table to show if the evidence corroborates hypothesized propositions. After this step has been completed, the analysis can be ended (Lieberman, 2005: 448) (cited by Beach and Beach, 2017). Then, the next step moves to the finding/ result (Box no (4)).

**RESULT AND DISCUSSION**

Before the authors discuss the findings and link them to existing theories, the authors need to reconfirm the meaning of Organizational Resilience. Resilience is the capability of an organization to return to its normal position before it is threatened

**Figure 4.** Verification flow of study in PT Alpha's resilience against crises



(Boin van Eten, 2013), the ability to prepare to face threats and return to the original positions or be more successful (Hamel Valikangas, 2003).

**PT Alpha's Case**

The JV was established more than three decades and had 350 employees with a turnover of more than 47.5 m\$ provided by-products ranging from small to very high-power capacity. The JV Partners' composition has evolved from the initial three partners (two domestic and one foreign partner) to only two partners in 2003. The foreign partner acquired all the 3rd shareholder's portion, which causes it to have the majority and provided technology management. Meanwhile, the second party was a domestic partner whose parent is an SOE.

**Crisis in PT Alpha**

Based on the former pilot study, the company had faced several crises and the most adverse situations as the causes were summarized in Table III.1 (Appendix IV) from 1998 to 2019. In this section, the company's evolution of crises, the initial situation facing the crisis, and the strategies carried out by the firm are described below, followed by the applied mechanisms by the company on each phase.

**Crisis I –FC in 1998**

The Asian financial crisis triggered this national crisis, followed by Indonesia's political instability. Civil riots/looting have contributed to Indonesia's replacement and created the country in an uncertain economic situation vast crisis. Affecting by country and regional crisis, PT Alpha's positioning (obtained from Respondents R7 and R8) was: (a) Domestic order declined to zero. (b) PT Alpha focused only on high-profitability orders in the domestic market.



(c) Business Unit 1 had extended to the overseas market since 1996, such as Latin America, Europe, and Africa.

The strategies to deal with the crisis were: (a) Change the CEO; (b) 50% of the workforces were laid off, followed by employee training to enable them to cover such multiple positions by a worker. (c) Declaring a sense of crisis, (d) Synergized between BU 1 and 2 for cost-sharing (e) Focusing on a new market: Repair, Replacement of windings, (f) Open for lower profits opportunities domestically.

PT Alpha took two anticipatory measures as the mechanism: (1) Identity, recognize and define the anticipated level of resilience, (2) scanning capability, market intelligence. Fortunately, PT Alpha expanded in 1996 to reach overseas markets, which helped it deal with the crisis (Duchek, 2020). This expansion was beneficial to the revenues of PT Alpha when this situation arose.

Former leaders' decisions have helped them navigate their organization outside the crisis (James and Wooten, 2010). It confirms that organizations should handle periods of stability and periods of instability (Dervitsiotis, 2003). In line with (Hamel and Valikangas (2003), firms need to innovate or expand before a crisis occurs) or experimenting to find a place where no one has gone before (Reinmoeller and van Baardwijk, 2005). This decision (of anticipation capabilities) helped the successor minimizes the consequences (Madni and Jackson 2009), which enlightened the firm to determine which strategies should be formulated and executed. Furthermore, the successor was the "former CEO," who already familiar with PT Alpha's condition (who had led it since 1990-1994) to take the right steps. Mechanism 2 and Mechanism 3 can both be applied appropriately. These findings were verified, as shown in proposition verification in Crisis II (Appendix V).

### **Crisis II - Recession 2008**

The global financial crisis emerged in 2008 with the epicenter in North America and Europe, including Indonesia (with close relations to the two continents), which affected the overseas and domestic markets of PT Alpha. The great recession should have been detected since the overseas markets' significant declines had been faced—however, PT. Alpha Co had not taken significant action (anticipation) to face this threat. PT Alpha's initial state (obtained from Respondents R6 and R7) were: (a) The company sustained a long period of loss (the profit was negative). (b) BU2 (small to medium power capacity) did not get any domestic order in the ongoing recession. (c) Internal conditions did not help the company's condition since the factory facilities were quite old. (d) The cost structure of employees was high since the employee seniority with long tenure. (e) This situation put the firm could not make any layoffs or any further investment.

The strategies were taken by the management as follows: (a) Change of the Leadership by replacing the

plant BU 2 director. (b) Performed strategic analysis and problem formulation (c) Socialize the company's sense of crisis and leadership's objective. (d) Reduced company costs by restructuring or cutting unnecessary costs; (e) Did not lay off since no available cost. (f) Changing business models helped to reduce the cost and improve profitability. (g) Changing company governance; (h) Mapping the current business position and determining the next business orientation. (i) Launch a niche product differentiation in industrial markets.

For mechanism 1, PT Alpha took one anticipatory action: identifying, recognizing, and defining the expected degree of resilience. PT Alpha knew that there would be a recession signal, but sadly no further action has been taken. However, the strategy in Mechanisms 2 and 3 could still be applied since the company's slack resources at the time of the recession is still sufficient (sound finances, because the demand for goods at BUI is still good). Despite expecting the development of risks, The existing Leader of BU 2 did not anticipate much that would have caused the costs and damages suffered by PT Alpha. Fortunately, the successor had created the innovation on medium-range products that helped PT Alpha have a new money source. These findings were verified, as shown in proposition verification in Crisis II (Appendix VI).

However, with a successor's expertise and the firm's slack resources, innovated new products related to the industrial market had helped PT Alpha to go through the crisis since the market demand was still there (Reinmoeller and van Baardwijk, 2005). Innovation and renewal as the source of organizational resilience then confirmed the findings (Hamel and Valikangas, 2003; Walker and Salt, 2006; Carmeli and Markman, 2011).

The strategy (a) was in line with William et al. (2017) that in a crisis, some leadership styles are more effective than others in helping organizations to respond (Ballesteros and Wry; Bundi and Pfarrer, 2015; Stam et al., 2016). As factors that create organizational resilience are changeable and varied (Tengblad and Oudhuis, 2018:p.234), the action effectiveness depends on the crisis stage and how leadership style interacts (Bundy et al., 2017).

Strategy (b) was in line with Morais-Storz's (2018) findings, who suggested that strategic resilience depends on a recursive cycle of problem formulation, innovation, and metamorphosis (change status quo). Furthermore, be more open to the real problem as the strategy (c) to employees and found a way out of the problem. Leadership responses are critical to ensure an organization's continued survival (Appelbaum et al., 2012). Furthermore, the higher the cost of raw materials, the greater the probability of organizational failure (Esteve – Perez and Manez-Castillejo, 2008; Gok et al.,2012)

### **Crisis III - in 2012**

This outbreak occurred when the enormous customer requirement for product specifications in



Business Unit 1 could not be fulfilled. It was caused by the non-suitable facilities (factories) to meet the specifications for high-performance goods, which were safer, more reliable, and more advanced. In reality, news of such a request had been heard since 2011. The management of PT Alpha has requested the shareholders to raise their investment. Unfortunately, the shareholders had not addressed it on time.

Therefore, PT Alpha's initial state (obtained from Respondents R1, R2, R3, R4, R5, and R7) was: (a) Since the primary customer's products could not be met, create any domestic revenue; therefore, revenue solely was from foreign markets. (b) The product did not meet the primary customer's new standards, proved by the failure's first test. It created a significant loss because they cannot be delivered and sold right away. Finally, the first past test can be carried out in 2016. (c) Financial difficulties (a significant drop in profitability, cash flow difficulties); (d) Disputes in the business occurred between management and factory union (workers' demands could not be fulfilled). (e) Out of date factory, (f) PT Alpha BU2 was carved by the corporate strategic action (this unit contributed to the strong cash flow of PT Alpha). (g) Strong quality of employees. (h) Luckily, the proper relationship with the primary client still existed.

The executed strategies to face this crisis as follows: (a) Change of Leadership; (b) Followed by the factory manager replacement with someone more assertive and respected; (c) Management was more transparent to company problems; (d) Open comprehensive communication with employees, including workers; (e) Fostering a sense of crisis in the company environment; (f) Held a meeting with the staff is routinely every three months. (g) In 2014 the investment demand was finally met, and a factory that met the qualifications was finally built. (h) Develop new products suitable to the new standard of Primary client; (i) Try not to reduce employees to avoid severance pay.

In this crisis, under mechanism 1, PT Alpha also performs only one anticipatory action, namely to identify, recognize and define the expected response level. The demand for a new specification by the primary customer had been understood to have occurred. However, the shareholders had underestimated it and did not find a solution (revamped the factory). When the plant was eventually agreed to build (in 2016), it could not help PT Alpha get through the crisis since it could not sell its products for about one year. PT Alpha might face it if the factory as an anticipatory stage was built and not as a mitigation step (meeting the required specification). It seems the importance of good relationships with owners should not be underestimated (Tengblad and Oudhuis, 2018:p.239),

The leadership may have caused this unpreparedness at the end of Crisis II because he could not convince the shareholders to invest in the factory's revamping. Mechanism 3 is difficult to execute since the strategy is delayed by the execution mechanism 2. Neglecting the importance of proactive behaviors (Kickul and Walters, 2002), enactment (Smircich and

Stubbart, 1985), and the action-oriented perspective sense-making (Weick, 1995) contribute to shaping the very complexity in the environment they occupy (Morais-Storz et al., 2018: p.1184).

Moreover, what was also important is that when a crisis occurred, the atmosphere of the company is also not supportive (disputes with workers). However, the new leaders could immediately overcome this situation by opening good communication. It created a sense of belonging to the company starting to grow. This situation is very positive as social resources - followers and relationships with unions, owners, and other stakeholders, as the source of resilience (Tengblad, 2018: p.40; Duchek, 2020: p.237). These facts in Crisis III prove that the propositions shown in Appendix VII (Findings of Proposition Verification in Crisis III) are confirmed

#### **Crisis IV – in 2015**

This crisis was caused by an increasing number of vendors in the domestic utility market, from two to six players, followed by the client's tender criteria assessment. Unfortunately, PT Alpha's performance and competitiveness had not been as good in the past, especially in certain products. There was a fluctuation in the utility market, amplified by a shift in the delivery model of PT Alpha's global strategy that prohibited products from entering South and Latin America. Meanwhile, the Pacific market has not been able to do so since some quality issues in the past. Crisis III's affected the firm's financial resources badly.

PT Alpha's initial state (R1, R2, R3, R4, R5, and R7) was: (a) Orders declined dramatically as other competitors emerged in the business; while, orders were generated mainly the domestic market. (b) PT Alpha's finances are in trouble (negative); (c) The plant has been aligned with the current standard, but the employee's work culture was still not consistently following the expected new plant requirement. (d) The impact of crisis III has not been overcome completely, mainly on financial difficulties. (e) PT Alpha had carried out a cost-out on their goods' cost to anticipate these new entrants; (f) the innovation climate was likely closed.

The response of PT Alpha in facing this crisis: (a) Change of Leadership; (b) The new leader made changes in the new management/team; (c) Produce a more competitive product; (d) Focus on products that have the performance and margins were good.

In this crisis, under mechanism 1, PT Alpha can only conduct one anticipatory action, namely, to identify, recognize, and define the expected level of resilience. This situation might happen because when it entered the crisis, Crisis III was not entirely over and still had an effect. It did the cost-out activities, but it could not resolve this crisis due to Crisis II's effects. Furthermore, the plant has been revamped based on qualifications, the factory workers' working culture has not been consistently maintained, the former leader should immediately train the factory workers. This delay led PT Alpha to take a long

time to match with the requirements, namely in 2016 (approximately four years since the request for this specification appeared). Cited by Tengblad and Oudhuis, 2018:p.240), employees require training and coaching to handle challenging and stressful work situations and maintain personal well-being (Hesketh et al., 2015). Until completing PT Alpha research in 2019, PT Alpha has not yet entirely recovered from crisis IV. PT Alpha also acknowledged this (R1 and R7). While they did the cost-out as anticipatory actions, cost-out might impact minimal, not a radical change. Therefore, it could be said that the previous leader underestimated the potential threat that eventually made PT Alpha experienced a crisis.

These facts in Crisis IV prove that the propositions shown in Appendix VIII (Findings of Proposition Verification in Crisis IV) are confirmed. This event also proves the theory put forward by Duchek (2020), which says that the willingness to resolve challenges helps organizations respond well to a crisis disturbance. A quick decision coupled with prompt responses is required at the in-crisis stage (Rerup, 2001).

From the above findings, few key factors play significant roles. The transition of leadership in the crisis is shown to have a significant influence. Once the successor had little knowledge of the situation and the threats, then, while threats continue to arise, they do not anticipate them. Although PT Alpha did not anticipate enough during Crisis II, PT Alpha could survive since its slack resources were supportive. Nevertheless, once the slack resources were terrible, it has not helped the firm go through the crisis. If the phases in Mechanism 1 are imperfectly implemented, it is impossible to carry out the phases in Mechanism 2 and so on.

For all crises, leaders and followers played critical

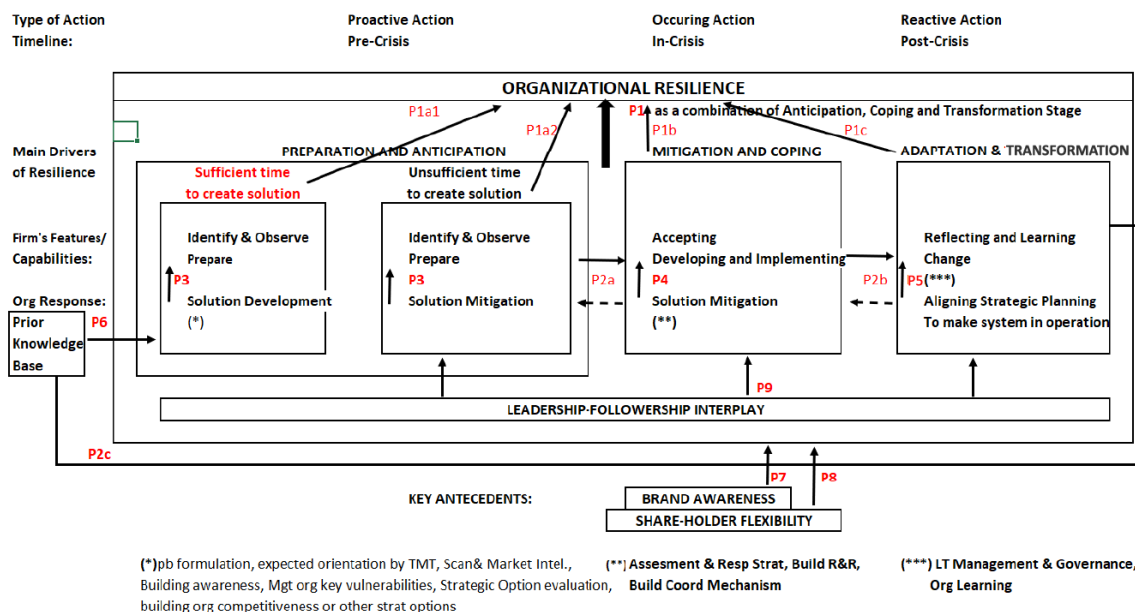
roles in the company's resilience. Therefore, proposition P9: Leadership and Followership interplay significantly influence organizational resilience is approved. The stronger the interplay of leadership and the followership, the stronger the capabilities of anticipation, coping, and adaptation-transformation processes. Stronger support for followership, even by middle managers, can increase the likelihood that catastrophes can be avoided (Tengblad and Oudhuis, 2018:p.240). Also, if leadership and followership are based on a shared set of principles and strategies, they are central elements in its culture (Andersson et al. (2013).

The well-known brand of PT Alpha is still helping to support during the crisis since the market still exists in condition, it matches with clients qualifications (in Crisis III). Proposition P7: The longer the company holds the same brand, the easier it is for customers to memorize it because if they need it, it will be at the top of their minds in a condition that the customer experience is also good.

Of course, this is inseparable from PT Alpha's shareholders' role, who plays a significant role in it (especially in developing overseas markets and investing in factory revamping). Therefore, the proposition emerged P8: The more flexible the shareholders are in supporting the organization with the markets, the better the organization is in coping with the crisis. All propositions discussed in the Literature Review and the findings of proposed propositions (P7-P9) led to the proposed integrative framework, as Figure 5.

Another significant point that the authors have noticed is that PT Alpha has taken minimal anticipatory action in all the crises. It had significantly impacted the mitigation and adaptation phases, mainly if the situation (slack resources was low). This pattern is shown by the magnitude of the effects of crisis II

Figure 5. Integrative Framework of Organizational Resilience



and crisis III. The anticipation phase can be essential to a company's success in being resilient in the face of a crisis. No matter how effective the mitigation and adaptation plans are, the company must work extra hard to succeed if the anticipation is not intense. It is not uncommon for the costs to be incurred to a significant degree and impact its legacy, which affects the anticipation stage.

This finding proves that a company achieves resilience by its combination of three processes (i.e., Anticipation, Coping, and Adaptation-Transformation stages) and inseparable (Proposition P1) as detailed in Appendix II (Crises I up to IV). The hypothesized causal sub-mechanisms (1 up to 3) verified the conditions as per the Table shown in Appendix II-IV.

Sub-mechanism 1 is very thin because, during the study, several respondents indicated that not much had been done. Sub-mechanism-1 thus consequences the job of sub-mechanisms 2 and 3 much harder. It may be argued that sub mechanism 1 is the foundation to effectively resolving risks. In process tracing, this situation is considered the minimalist understanding of where it may have happened since the works' limitation to sub mechanism 1.

Meanwhile, the evidence is plentiful for sub mechanisms 2 and 3, but the results are not satisfactory (mainly in crisis III and IV). In process tracing, those situations are considered the system understanding of where the evidence contributes significantly to verifying hypotheses of which the causal links are strongly verified. The proposed integrative framework of organizational resilience for large established JV has been confirmed based on the findings.

Another finding shows that every time (after Crisis I) faced a crisis, PT Alpha could always identify a threat, but PT Alpha was not ready when the threats came. This situation could be due to the absence of culture to transform and be flexible for future threats. The findings are summarized in Appendix IX.

## CONCLUSION

This paper aims to answer how large established joint ventures remain resilient in a disruptive era. The findings have shown that resilience is the combination of anticipation, coping, adaptation-transformation, and inseparable. The empirical evidence has confirmed that the capabilities built on the above process enhance organizational resilience. However, if anticipation does not become a "habit" in crisis management, prevention and adaptation/transformation can become challenging.

Strengthening this process, the authors found three causal mechanisms to face the crises in three inseparable processes. Causal mechanisms 1, 2, and 3 support the anticipation, coping, and adaptation-transformation processes, respectively. In case a threat is identified, late to execute the solution creates the JV in a problematic situation (Crisis III and IV), which had disconfirmed the previous conceptual framework (Duchek, 2020:p.225-228) that the solution

development is still needed in the anticipation stage.

Therefore, the firm needs to extend a timeline for the stability period, or Dervitsiotis (2003) said: "dual mode of management" (cited from Limnios et al., 2014: p.106). This empirical evidence empowers the authors to adjust Duchek's framework by enhancing the anticipation capabilities to provide the additional sub mechanism 1 to anticipate if the timeline is sufficient to create a solution. When the time is still sufficient or in the period of stability, before any crisis occurs, crisis-I evidence has proved that these actions help the firm during the crisis period, notably to support its healthiness.

Moreover, it has been proved that sub-mechanism-2 has fostered the organization's coping capabilities. Likewise, the recovery and transformation capabilities have been confirmed by sub-mechanism 3. These three sub-mechanisms have contributed to the resilience of PT Alpha. Finally, the more flexible the shareholders, the better the organization is in coping with the crisis

## Implication and Suggestion

### Theoretical Implication

This study's findings also imply the organizational resilience theory developed by Duchek based on its conceptual framework. Empirical evidence has confirmed that organizational resilience is enhanced by a combination of 3 phases of crises and inseparable (Duchek, 2020:p.232). The framework needs to include a period of stability or sufficient time to find a solution by considering innovation. It is also necessary to extend this process's capabilities by considering the solution developed during the preparation process to anticipate the crisis.

### Managerial Implication

This study will help firm managers consider the capabilities and strategies built on these three processes, starting from the stage before any disturbance, substantially innovate during the stability period to expand the market to create new products (Dervitsiotis, 2003). Also, organizations must build capacity in the processes as suggested in Sub-Mechanisms 1, 2, and 3. Findings have shown that it is crucial to have updated leadership capabilities to respond to such threats (William et al., 2017; Ballesteros and Wry; Bundi and Pfarrer, 2015; Stam et al., 2016); otherwise, they need to be adjusted. It will be vulnerable to survival without a vital interaction between leadership and followers (Tengblad and Oudhuis, 2018:p.240). As discussed throughout this article, the next crisis is just around the corner for the company. Without the proper lessons learned and anticipated, mitigated plans or solutions, organizations repeat the same mistakes that face the crisis (Appelbaum et al., 2011).

### Recommendation include Future Research

This study's framework covers most likely a joint venture firm where one of the shareholders is an SOE



and the products' users. It will be open if this framework can be researched for other segments. It is also useful to compare with other types of shareholder's characteristics.

In this study, the authors have not focused on keeping the system (organization) flexible. The authors trace that it is critical from the moment before the crisis till the crisis period. The next process in the stable period is not examined in this paper. It is crucial to see it on this organizational resilience. If it can be extended to a comparative case study, it will help generalize the situation. Besides, it will anyhow be open to more studies in other segments.

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## APPENDICES

### Appendix I

**Figure 1.** The bankrupt companies in Indonesia from 2016 to 2018



## Appendix II (Summary of Organizational Resilience Definitions)

Name of Framework and Author(s)	Definitions	
Resilient Organization Framework (Fx)	Robb (2000)	Org Resilience Framework integrates the two domains by actively and consciously creating two subsystems: The Performance System and the Adaptation System, which are linked together through a foundation of architecture, skill and cultural factors.
Enterprise resilience	Fiksel (2003)	Enterprise resilience as the capacity for an enterprise to survive, adapt, and grow in the face of turbulent change.
Diversity for Resilience	Reimmoeller & van Baardwijk (2005)	A capability to self-renew through innovation over time in order to sustain superior performance and outperform competitors
Facilitated process resilience management	McManus et al. (2008)	Resilience is a function of an organization's overall situation awareness, management of keystone vulnerabilities, and adaptive capacity in a complex, dynamic, and interconnected environment
System Resilience	Madni and Jackson (2009)	Resilience is a multi-faceted capability of a complex system that encompasses avoiding, absorbing, adapting to, and recovering from disruptions.
Framework to Link logistics capabilities and supply chain resilience	Ponomarev and Holcomb (2009)	OR is the capacity to adjust and maintain desirable functions under challenging or straining conditions ; a dynamic capacity of organizational adaptability that grows and develops over time, and the ability to bounce back from disruptive events or hardship.
OR Potential Scale (ORPS) – for measuring latent resilience.	Somers (2009)	Resilience is more than mere survival; it involves identifying potential risks and taking proactive steps to ensure that an organization thrives in the face of adversity which can be maximized by the capacity of the organization to adapt to complex situations (Lengnick-Hall & Beck, 2005; Wildavsky, 1988)
IT-enabled enterprise risk management (ERM) capability - OR	Oh and Teo (2009)	Organizational resilience is the competence of an organization to anticipate external shocks and disruptions, and to recover swiftly with a sufficiently rich variety of safeguards and responses.
Extended enterprise resilience	Erol et al. (2010)	Resilience is defined as a response to unexpected or unforeseen changes and disturbances, and an ability to adapt and respond to such changes.
Organizational Capacity Resilience	Lengnick-Hall et al. (2011)	Organizational resilience as a firm's ability to effectively absorb, develop situation-specific responses to, and ultimately engage in transformative activities to capitalize on disruptive surprises that potentially threaten organization survival.
Interaction Effect of KM and Creative Climate on Org Resilience	Mafabi et al. (2012)	Organisational resilience is the capacity to respond to threats and opportunities in the environment order to prevent decay and disuse.
HRO Framework	Boin and Van Een (2013)	The HRO framework is the relationship between organizational characteristics and precursor resilience with additional insights with regard to the conditions for a rapid and effective response in the face of unexpected threats.
Resilience: Continuous renewal of competitive advantages	De Oliveira Teixeira and Werther (2013)	Resilient organization is the ability to anticipatorily innovate and do it repeatedly and is able to follow up with successive industry-changing innovations where the creation of a corporate culture characterized by anticipatory and repeated innovation.
BMI and organizational sustainability for enterprise excellence and resilience	Carayannis et al. (2014)	Long-term enterprise success that is defined by high-level organizational resilience and robustness.
Antecedents of SME Resilience	Pal et al. (2014)	Resilience is the development of specialized knowledge of individuals and also collectively in an organization to respond effectively to unfamiliar or challenging situations.
The Seven Principles of a Resilient Organization	Seville, Opstal and Vargo (2015)	Resilient organizations are positioned to both survive and thrive, aligned with the seven principles, can mean the difference between sustainable competitive advantage and being forced out of business.
Vulnerability to resilience" (V2R) framework	Sawalha (2015)	Resilient organisations are those able to undertake and maintain positive adjustment under challenging conditions. which involves the ability to bounce back from untoward events and the capacity to maintain desirable level of functioning.
Resilience Capability	Chu (2015)	Four important characteristics of resilience concept in business settings. (1) resilience is a multidimensional capability that is expressed through proactive and reactive responses/strategy in order to thrive and grow in turbulent environments. (2)resilience capability can be in-born or developed within or across business operating boundaries. (3) resilience capability varies across time and contexts. (4) resilience can be developed through different means (equifinality) that leads to diverse outcomes (multifinality).
Organizational resilience	COSTULEANU et al. (2015)	Resilience for an organization is based at least on its ability to learn and adapt which show a strong correlation between the "healthy" Z-score transition profiles of the companies and the real employees' creative involvement in company's production management and their wellbeing degree.
Resilience and sustainability	Cole, Graham (2015)	Resilience incorporates two separate dimensions of Operational and Strategic Resilience.
Early Risk Warning Model of Organizational Resilience	Chen (2016)	Organizational resilience is the ability of an organization to anticipate, prepare for, respond to, and adapt to incremental change and sudden disruptions in order to survive and prosper.
Resilience Performance	Blanco et al. (2016)	Resilience is not merely survival in response to adversity but rather an anticipatory strategy for progress, recognizing the need to take both proactive and reactive measures. This meaning implies knowledge and learning.
Organizational resilience	Linnenbuecke, M. K. (2017)	Resilience is a learnable capacity which can be measured and developed within employees, and which sets them up for success or failure independent of their real ability to cope with unfamiliar events.
Strategic Resilience	Morais-Storz et al. (2018)	organizational resilience is largely referred to as the ability to adapt and rebound post crisis and sets up a dichotomy between those organizations that have it and those that don't.
Ego Resilience	Ferreira et al. (2018)	None about Org Resilience. But it is about individual resilience. Resilience can be described as individuals' ability to adapt adequately to adversity and stress (Klofman, 1996). Both stress and adversity can stem from workplace conditions or stressors that accompany change processes (Cooper et al., 2014).
Four-level Maturity Model for Organizational Resilience (MMOR)	Ruiz Martin et al. (2018)	Organizational Resilience is the measurable combination of characteristics, abilities, capacities or capabilities that allows an organization to withstand known and unknown disturbances and still survive.

## Appendix III (Summary of Interviews in PT Alpha)

Date of interviews	Attribute of Respondent	Role in PT Alpha Company	Interview Duration/ Location	Working Experience Duration	Observation during the interviews
1 <sup>st</sup> : Nov 23, 2018	R1.1 (the second figure to show the interview order)	CEO and Plant Director (Cluster 1)	1 <sup>st</sup> : 86 minutes Loc: Respondent's office cabinet	First joined in 2000 as Quality Leader. Tendering, Project, and operation	The interview was carried out while he was on a conference call. Incredibly open and transparent and strongly allow his leader to speak up.
2 <sup>nd</sup> : Mar 5, 2019	R1.2 (the second figure to show the interview order)	Plant Director No 1 (Cluster 1)	2 <sup>nd</sup> : 35 minutes. Loc: Respondent's office cabinet	Like above	Shorter than the former interview due to the aim is to triangulate the insights from other respondents. The interview was carried out while he did a conf call with his team.
Jan 25, 2019	R2	Technical Advisor of Business Unit 1	70 minutes Loc: via telephone	Technical Director of BU1	The interview was carried out after office hour
Feb 1, 2019	R3	Technical Leader (Cluster 2)	52 minutes Loc: Respondent's office cabinet	Quality, Testing Leaders. Joined in 1996 (22 years)	The interview was carried out in free time; more cautious about the interviews and more protective during the discussion
Feb 18, 2019	R4	Tendering and Project Leader (Cluster 3)	70 minutes. Loc: Respondent's office cabinet	Project Manager, Sales Manager, Joined in 2015	The interview was done while he was on Conference Call; More transparent during the interview
May 29, 2019	R5.1	Retired Director No 2	30 minutes; Loc: outside the office	Period of working: 2013 to 2015	The interview was carried out after his meeting
Jun 17, 2020	R6	Retired Director No. 1 of Business Unit 2	90 minutes; Loc: via Telp	Working since 1992 and last post as operation director of BU1	The interview was carried out after office hours.
Jun 19, 2020	R7	Retired Director No 2. of Business Unit 1	50 minutes; Loc: via Telp	Export Manager of Business Unit, now moving to a regional role	The interview was carried out before his next meeting
July 3, 2020	R8	Retired Director No 1 of Business Unit 1	45 minutes; Loc: via Telp	Operation Director of such business unit	Called at home and incredibly open and transparent
4 <sup>th</sup> of July 2020	R5.2	Retired Director No 2	20 minutes; Loc: outside the office		This interview to triangulate the points from another respondent



### Appendix IV (Table III.1 Summary of Crises faced by PT Alpha)

No	Causes (Adverse Situation)	Timeline	Remarks
1	Financial Crisis 98/99	1998/1999	Crisis 1
2	Recession 2008	2008	Crisis 2
3	Adverse Change of Cust. Spec	2012: High Requirement for Partial Discharge	Crisis 3
4	Increasing number of domestic competitors from 2 to 6 and Volatile demands of main domestic customer	End of 2015 (2 entrants) and in 2016 (2 more)	Crisis 4

### Appendix V (Findings of Proposition Verification in Crisis 1)

No	Propositions	Description	CRISIS 1 (AFC98)	Clarification in English
1	Proposition P1	The greater the organization's capabilities in inseparable stages (anticipation, coping, adaptation-transformation), the more resilient the firm will be	V	Comprehensive measures taken since the pre-crisis, in-crisis and post-crisis have helped PT Alpha to handle a crisis such as opening up overseas markets since 1996, which has influenced coping and adaptation strategy in the face of challenges.
2	Proposition P1a1	The more robust the ability to detect threats and develop solutions, the stronger the company's ability to face and anticipate potential threats	V	PT Alpha is stronger in the face of the crisis because it is supported by overseas projects that have been initiated since 1996 (before the crisis occurred).
3	Proposition P1a2	In the un-sufficient (short time) time to create mitigation sol., the stronger the firm-anticipation-capabilities being built in the process, the more res of an org.	X	It cannot be tested in crisis 1 because, in this crisis, PT Alpha has had ample time to anticipate (open up the market) and did so.
4	Proposition P1b	The greater the ability to cope, the more the organization's resilience.	V	Confirmed, because all strategies can be implemented at the coping stage.
5	Proposition P1c	The more robust the capacity to adapt, followed by transformation, the more organization's resilience.	V	Confirmed, since PT Alpha has made innovations in crisis management, focused on repair, winding replacement supported by training.
6	Proposition P2a:	The more anticipatory capability is built, the greater the coping capability will be.	V	Confirmed since the assistance of overseas projects, the Coping phase can be strengthened.
7	Proposition P2b:	The more coping capability is built, the greater the adaptation capability will be.	V	Proven that the coping plan is really strong, adaptation (transformation) can be achieved.
8	Proposition P2c:	The more adaptation (transformation) capability is built, the greater the anticipation capability will be in the next crisis.	X	Since adaptation (transformation) is not carried out on a continuing process, it makes it impossible for businesses to predict the next threat. This plan cannot be checked because it is the first crisis.
9	Proposition P3	The better the organization can identify, analyze, plan, and create a solution, the better the anticipation process.	V	Proven, because PT Alpha had come up with a solution before the crisis happened in 1996 so that it could anticipate it well.
10	Proposition P3a	The earlier an organization can recognize a threat, the better it can minimize or respond to the threat.	V	Confirmed, by example, in 1996.
11	Proposition P3b1	The faster a solution is developed within sufficient time, the more likely it will succeed.	V	This is proven because in sufficient time, PT Alpha can make a solution (1996).
12	Proposition P3b2	The earlier the implementation of mitigation solution created in un-sufficient time, the more robust organizational resilience.	X	In this crisis, PT Alpha has sufficient time so that it cannot be applied to this proposition.
13	Proposition P3d	At sufficient time to create a solution, the anticipation processes will be enhanced by the mechanism's improved quality (Sub-Mech 1).	V	Confirmed, since PT Alpha had already anticipated, the expected process is therefore working well.
14	Proposition P4	The more skilled organization has in the Coping stage, the greater the coping processes.	V	It has been shown that all the strategies implemented have been successful.
15	Proposition P4a	The more robust the mechanism's consistency, the greater the coping process, beginning with CM2 (the assessment and response strategies, the design of appropriate roles and responsibilities, the creation of coordination mechanisms, and the development and implementation of mitigating solutions).	V	Confirmed, since all the strategies made by PT Alpha were successful, the coping process went well.
16	Proposition P5	The more consistency of the skills needed in this phase (long-term management, modification of strategic planning) is improved, the stronger the adaptation process (transformation).	V	Confirmed, all of the CM 3 mechanisms worked well.
17	Proposition P6	The stronger the organizational knowledge base, the more robust capabilities on anticipation, coping, and adaptation-transformation.	X	Crisis 1 cannot be checked because past crisis experiences have not been tested.
18	Proposition P7	The longer the company keeps the same brand, the easier it is for customers to memorize it and once they need it, it will be in their top of mind.	V	Confirmed, since beginning in 1969, PT Alpha still uses the same brand.
19	Proposition P8	The more flexible the shareholders are in supporting the organization with the markets, the better the organization is in coping with the crisis.	V	Confirmed, because it is the shareholders that open market prospects in the overseas territories.
20	Proposition P9	The stronger the interplay of leaderships and the followership, the stronger the capabilities of anticipation, coping and recovery as well as transformation processes.	V	This has been confirmed that the new leadership has been able to foster a sense of crisis that has made the team more compact.

## Appendix VI(Findings of Proposition Verification in Crisis 2)

No	Propositions	Description	CRISIS 2 (Recession 2008)	Clarification in English
1	Proposition P1	The greater the organization's capabilities in inseparable stages (anticipation, coping, adaptation-transformation), the more resilient the firm will be.	V	In this crisis, since the anticipation process was not well carried out (even after the coping and adaptation-transformation phases had been completed), it was impossible to be resilient.
2	Proposition P1a1	The more robust the ability to detect threats and develop solutions, the stronger the company's ability to face and anticipate potential threats	V	PT Alpha detected a threat in this crisis but did not take any steps to find a solution. But it's hard to face threats. This situation can be seen as the impact of the crisis.
3	Proposition P1a2	In the un-sufficient (short time) time to create mitigation sol, the stronger the firm-anticipation-capabilities being built in the process, the more res of an org.	X	This crisis did not occur because PT Alpha had sufficient time to anticipate it.
4	Proposition P1b	The greater the ability to cope, the more the organization's resilience.	V	Confirmed, because all strategies can be implemented at the coping stage.
5	Proposition P1c	The more robust the capacity to adapt, followed by transformation, the more organization's resilience.	V	Confirmed, leading to a change in the business model, its latest strategies have contributed to product differentiation and innovations that have caused PT Alpha to go through the crisis.
6	Proposition P2a	The more anticipatory capability is built, the greater the coping capability will be.	V	Confirmed, because the anticipation was not adequate, the coping phase strategies were tough to do.
7	Proposition P2b	The more coping capability is built, the greater the adaptation capability will be.	V	Proven that the coping plan is really strong, adaptation (transformation) can be achieved.
8	Proposition P2c	The more adaptation (transformation) capability is built, the greater the anticipation capability will be in the next crisis.	V	Since adaptation (transformation) is not carried out on a continuing process, it makes it impossible for businesses to predict the next threat. This plan cannot be checked because it is the first crisis.
9	Proposition P3	The better the organization can identify, analyze, plan, and create a solution, the better the anticipation process.	V	This situation was not the case in this crisis because, while the recognition was not adequately, the mitigation solution was not pursued so that the expectancy was low.
10	Proposition P3a	The earlier an organization can recognize a threat, the better it can minimize or respond to the threat.	V	It is not proven because the threat (recession) has been recognized, but there is no anticipation, so it cannot respond well to threats.
11	Proposition P3b1	The faster a solution is developed within sufficient time, the more likely it will succeed.	V	It was proven by the difficulty PT Alpha went through the crisis because they did not develop solutions even though there was enough time.
12	Proposition P3b2	The earlier the implementation of mitigation solution created in un-sufficient time, the more robust organizational resilience.	X	In this crisis, PT Alpha has sufficient time to not apply to this proposition.
13	Proposition P3d	At sufficient time to create a solution, the anticipation processes will be enhanced by the mechanism's improved quality (Sub-Mech 1).	V	Confirmed, because PT Alpha did not carry out adequate anticipation, it was challenging to carry out the strategy, and it took a long time to come out of the crisis.
14	Proposition P4	The more skilled organization has in the Coping stage, the greater the coping process.	V	It has been shown that all the strategies implemented have been successful.
15	Proposition P4a	The more robust the mechanism's consistency, the greater the coping process, beginning with CM2(the assessment and response strategies, the design of appropriate roles and responsibilities, the creation of coordination mechanisms, and the development and implementation of mitigating solutions).	V	Confirmed, since all the strategies made by PT Alpha were successful, the coping process went well.
16	Proposition P5	The more consistency of the skills needed in this phase (long-term management, modification of strategic planning) is improved, the stronger the adaptation process (transformation).	V	Confirmed, all of the CM 3 mechanisms worked well.
17	Proposition P6	The stronger the organizational knowledge base, the more robust capabilities on anticipation, coping, and adaptation-transformation.	V	It was confirmed because PT Alpha had experienced a previous crisis in crisis 1. But it seems that the learning experience of crisis 1 is not used to anticipate crisis 2.
18	Proposition P7	The longer the company keeps the same brand, the easier it is for customers to memorize it and once they need it, it will be in their top of mind.	V	Unconfirmed that even though PT Alpha's brand was large, they still did not benefit from the market at that time.
19	Proposition P8	The more flexible the shareholders are in supporting the organization with the markets, the better the organization is in coping with the crisis.	V	It is not proven because even though flexible shareholders are currently, they cannot help. After all, the problem is internal (unable to compete with other companies).
20	Proposition P9	The stronger the interplay of leaderships and the followership, the stronger the capabilities of anticipation, coping and recovery as well as transformation processes.	V	It was confirmed because the new leadership was able to foster a sense of crisis and the company struggled not to fire employees so that employees were more loyal.

## Appendix VII(Findings of Proposition Verification in Crisis 3)

No	Propositions	Description	CRISIS 3 (High Spec change)	Clarification in English
1	Proposition P1	The greater the organization's capabilities in inseparable stages (anticipation, coping, adaptation-transformation), the more resilient the firm will be	V	In this crisis, since the anticipation process was not well carried out (even after the coping and adaptation-transformation phases had been completed), it was impossible to be resilient.
2	Proposition P1a1	The more robust the ability to detect threats and develop solutions, the stronger the company's ability to face and anticipate potential threats	V	PT Alpha detected a threat in this crisis but did not take any steps to find a solution. But it's hard to face threats. This situation can be seen as the impact of the crisis.
3	Proposition P1a2	In the un-sufficient (short time) time to create mitigation sol, the stronger the firm-anticipation-capabilities being built in the process, the more res of an org.	X	This crisis did not occur because PT Alpha had sufficient time to anticipate it.
4	Proposition P1b	The greater the ability to cope, the more the organization's resilience.	V	It has been confirmed, but the plan has been slow to approve and implement in this crisis.
5	Proposition P1c	The more robust the capacity to adapt, followed by transformation, the more organization's resilience.	V	Confirmed, through a more open management, regular meetings with staff (once every 3 months), making new innovations, and updating factories according to qualifications and specifications have helped PT Alpha face the crisis.
6	Proposition P2a	The more anticipatory capability is built, the greater the coping capability will be.	V	Confirmed, because the anticipation was not adequate, the coping phase strategies were tough to do.
7	Proposition P2b	The more coping capability is built, the greater the adaptation capability will be.	V	It has been confirmed, but in this crisis, PT Alpha was late in executing a plan (renovation of the factory in accordance with the standard) so that the adaptation (transformation) could not be carried out properly.
8	Proposition P2c	The more adaptation (transformation) capability is built, the greater the anticipation capability will be in the next crisis.	V	Since adaptation (transformation) is not carried out on a continuing process, it makes it impossible for businesses to predict the next threat. This plan cannot be checked because it is the first crisis.
9	Proposition P3	The better the organization can identify, analyze, plan, and create a solution, the better the anticipation process.	V	This situation was not the case in this crisis because, while the recognition was not adequately, the mitigation solution was not pursued so that the expectancy was low.
10	Proposition P3a	The earlier an organization can recognize a threat, the better it can minimize or respond to the threat.	V	It is not proven because the threat (recession) has been recognized, but there is no anticipation, so it cannot respond well to threats.
11	Proposition P3b1	The faster a solution is developed within sufficient time, the more likely it will succeed.	V	It was proven by the difficulty PT Alpha faced the crisis because they did not develop solutions even though there was enough time.
12	Proposition P3b2	The earlier the implementation of mitigation solution created in un-sufficient time, the more robust organizational resilience.	X	In this crisis, PT Alpha has sufficient time to not apply to this proposition.
13	Proposition P3d	At sufficient time to create a solution, the anticipation processes will be enhanced by the mechanism's improved quality (Sub-Mech 1).	V	Confirmed, because PT Alpha did not carry out adequate anticipation, it was challenging to carry out the strategy, and it took a long time to come out of the crisis.
14	Proposition P4	The more skilled organization has in the Coping stage, the greater the coping process.	V	It has been confirmed, but the plan has been slow to approve and implement in this crisis.
15	Proposition P4a	The more robust the mechanism's consistency, the greater the coping process, beginning with CM2(the assessment and response strategies, the design of appropriate roles and responsibilities, the creation of coordination mechanisms, and the development and implementation of mitigating solutions).	V	It has been confirmed, but the plan has been slow to approve and implement in this crisis.
16	Proposition P5	The more consistency of the skills needed in this phase (long-term management, modification of strategic planning) is improved, the stronger the adaptation process (transformation).	V	It has been confirmed, but the plan has been slow to approve and implement in this crisis.
17	Proposition P6	The stronger the organizational knowledge base, the more robust capabilities on anticipation, coping, and adaptation-transformation.	V	Confirmed, even though PT Alpha had encountered several crises in the past (crisis 1 and 2), this crisis experience was not used to anticipate crises 3.
18	Proposition P7	The longer the company keeps the same brand, the easier it is for customers to memorize it and once they need it, it will be in their top of mind.	V	Unconfirmed that even though PT Alpha's brand was large, they still did not benefit from the market at that time.
19	Proposition P8	The more flexible the shareholders are in supporting the organization with the markets, the better the organization is in coping with the crisis.	V	This has been confirmed since, in the midst of crisis 3, domestic projects enabled PT Alpha to face crisis 3.
20	Proposition P9	The stronger the interplay of leaderships and the followership, the stronger the capabilities of anticipation, coping and recovery as well as transformation processes.	V	It was confirmed because the new leadership was able to foster a sense of crisis and the company struggled not to fire employees so that employees were more loyal.



## Appendix VIII(Findings of Proposition Verification in Crisis 4)

No	Propositions	Description	CRISIS 4 (New Entrants)	Clarification in English
1	Proposition P1	The greater the organization's capabilities in inseparable stages (anticipation, coping, adaptation-transformation), the more resilient the firm will be	V	In this crisis, since the anticipation process was not well carried out (even after the coping and adaptation-transformation phases had been completed), it was impossible to be resilient.
2	Proposition P1a1	The more robust the ability to detect threats and develop solutions, the stronger the company's ability to face and anticipate potential threats	V	PT Alpha detected a threat in this crisis but did not take any steps to find a right solution. But it's hard to face threats. This situation can be seen as the impact of the crisis.
3	Proposition P1a2	In the un-sufficient (short time) time to create mitigation sol, the stronger the firm-anticipation-capabilities being built in the process, the more res of an org.	X	This crisis did not occur because PT Alpha had sufficient time to anticipate it.
4	Proposition P1b	The greater the ability to cope, the more the organization's resilience.	V	It was confirmed, but the strategy (worker empowerment) was executed too late, so that the Coping stage did not go well.
5	Proposition P1c	The more robust the capacity to adapt, followed by transformation, the more organization's resilience.	V	It was confirmed because PT Alpha produces more competitive products. This situation can ease PT Alpha to face the crisis.
6	Proposition P2a	The more anticipatory capability is built, the greater the coping capability will be.	V	Confirmed, because the anticipation was not adequate, the coping phase strategies were tough to do.
7	Proposition P2b	The more coping capability is built, the greater the adaptation capability will be.	V	Confirmed that since the coping plan was carried out (partly) late, the adaptation (transformation) could not be carried out smoothly.
8	Proposition P2c	The more adaptation (transformation) capability is built, the greater the anticipation capability will be in the next crisis.	V	Since adaptation (transformation) is not carried out on a continuing process, it makes it impossible for businesses to predict the next threat. This plan cannot be checked because it is the first crisis.
9	Proposition P3	The better the organization can identify, analyze, plan, and create a solution, the better the anticipation process.	V	This situation was not the case in this crisis because, while the recognition was not adequately, the mitigation solution was not pursued so that the expectancy was low.
10	Proposition P3a	The earlier an organization can recognize a threat, the better it can minimize or respond to the threat.	V	Confirmed, as the threat has actually been recognized, but the anticipation created (cost-out) is not sufficient to ensure that it cannot respond seamlessly to the threat.
11	Proposition P3b1	The faster a solution is developed within sufficient time, the more likely it will succeed.	V	It was proven by the difficulty PT Alpha faced the crisis because they did not develop the right solutions even though there was enough time.
12	Proposition P3b2	The earlier the implementation of mitigation solution created in un-sufficient time, the more robust organizational resilience.	X	In this crisis, PT Alpha has sufficient time to apply, therefore this proposition is not applicable.
13	Proposition P3d	At sufficient time to create a solution, the anticipation processes will be enhanced by the mechanism's improved quality (Sub-Mech 1).	V	Confirmed, because PT Alpha did not carry out adequate anticipation, it was challenging to carry out the strategy, and it took a long time to come out of the crisis.
14	Proposition P4	The more skilled organization has in the Coping stage, the greater the coping process.	V	Confirmed that since PT Alpha was unable to execute the strategy during the coping process, the coping phase was not good/optimal.
15	Proposition P4a	The more robust the mechanism's consistency, the greater the coping process, beginning with CM2(the assessment and response strategies, the design of appropriate roles and responsibilities, the creation of coordination mechanisms, and the development and implementation of mitigating solutions).	V	Confirmed that since PT Alpha was unable to execute the strategy during the coping process, the coping phase was not good/optimal.
16	Proposition P5	The more consistency of the skills needed in this phase (long-term management, modification of strategic planning) is improved, the stronger the adaptation process (transformation).	V	Obviously, all CM 3 mechanisms have been put in place, but because it was too late (learning organization) to make adaptation less pleasant.
17	Proposition P6	The stronger the organizational knowledge base, the more robust capabilities on anticipation, coping, and adaptation-transformation.	V	Confirmed, even though PT Alpha had encountered several crises in the past (crisis 1, 2 and 3), this crisis experience was not used to anticipate crises 4.
18	Proposition P7	The longer the company keeps the same brand, the easier it is for customers to memorize it and once they need it, it will be in their top of mind.	V	Unconfirmed that even though PT Alpha's brand was large, they still did not benefit from the market at that time.
19	Proposition P8	The more flexible the shareholders are in supporting the organization with the markets, the better the organization is in coping with the crisis.	X	Confirmed, since the domestic market that underpinned this crisis 4 came from the contribution of JV's shareholder.
20	Proposition P9	The stronger the interplay of leaderships and the followership, the stronger the capabilities of anticipation, coping and recovery as well as transformation processes.	V	Confirmed, the new leader formed a new team/management that was more enthusiastic.

### Appendix IX(Summary of Crises Findings)

No	Propositions	Description	CRISIS 1 (AFC98)	CRISIS 2 (Recession 2008)	CRISIS 3 (High Spec change)	CRISIS 4 (New Entrants)
1	Proposition P1	The greater the organization's capabilities in inseparable stages (anticipation, coping, adaptation-transformation), the more resilient the firm will be	V	V	V	V
2	Proposition P1a1	The more robust the ability to detect threats and develop solutions, the stronger the company's ability to face and anticipate potential threats	V	V	V	V
3	Proposition P1a2	In the un-sufficient (short time) time to create mitigation sol, the stronger the firm-anticipation-capabilities being built in the process, the more res of an org.	X	X	X	X
4	Proposition P1b	The greater the ability to cope, the more the organization's resilience.	V	V	V	V
5	Proposition P1c	The more robust the capacity to adapt, followed by transformation, the more organization's resilience.	V	V	V	V
6	Proposition P2a	The more anticipatory capability is built, the greater the coping capability will be.	V	V	V	V
7	Proposition P2b	The more coping capability is built, the greater the adaptation capability will be.	V	V	V	V
8	Proposition P2c	The more adaptation (transformation) capability is built, the greater the anticipation capability will be in the next crisis.	X	V	V	V
9	Proposition P3	The better the organization can identify, analyze, plan, and create a solution, the better the anticipation process.	V	V	V	V
10	Proposition P3a	The earlier an organization can recognize a threat, the better it can minimize or respond to the threat.	V	V	V	V
11	Proposition P3b1	The faster a solution is developed within sufficient time, the more likely it will succeed.	V	V	V	V
12	Proposition P3b2	The earlier the implementation of mitigation solution created in un-sufficient time, the more robust organizational resilience.	X	X	X	X
13	Proposition P3d	At sufficient time to create a solution, the anticipation processes will be enhanced by the mechanism's improved quality (Sub-Mech 1).	V	V	V	V
14	Proposition P4	The more skilled organization has in the Coping stage, the greater the coping process.	V	V	V	V
15	Proposition P4a	The more robust the mechanism's consistency, the greater the coping process, beginning with CM2(the assessment and response strategies, the design of appropriate roles and responsibilities, the creation of coordination mechanisms, and the development and implementation of mitigating solutions).	V	V	V	V
16	Proposition P5	The more consistency of the skills needed in this phase (long-term management, modification of strategic planning) is improved, the stronger the adaptation process (transformation).	V	V	V	V
17	Proposition P6	The stronger the organizational knowledge base, the more robust capabilities on anticipation, coping, and adaptation-transformation.	X	V	V	V
18	Proposition P7	The longer the company keeps the same brand, the easier it is for customers to memorize it and once they need it, it will be in their top of mind.	V	V	V	V
19	Proposition P8	The more flexible the shareholders are in supporting the organization with the markets, the better the organization is in coping with the crisis.	V	V	V	X
20	Proposition P9	The stronger the interplay of leaderships and the followership, the stronger the capabilities of anticipation, coping and recovery as well as transformation processes.	V	V	V	V

## Appendix X (Verification of Mechanisms based on respondents views)

## Appendix X (Verification of Mechanisms based on respondents views)

No	Type of Mechanism	Crises			
		I	II	III	IV
<b>Mechanism 1</b>					
(Anticipation)					
1	Identify, Recognize, Define expected Resilience Level	VV (open overseas market)	V (Identify)	V (Identify)	V (Identify)
2	Scanning Capabilities & Market Intelligence	VV (penetrate to overseas market)	X	X	X
3	Building Awareness & Stakeholder Engagement	X	X	X	X
4	Managing Organization Key Vulnerability	X	X	X	X
5	Strategic Option Evaluation	X	X	X	X
6	Building Org Competitiveness	X	X	X	X
7	Developing & Implementing Solutions	V (open overseas market)	X	X	X
<b>Mechanism 2:</b>					
1	Assessment & Response Strategy	VV	VV (+)	V	V
2	Build Clear Role & Responsibility	VV	VV (+)	V	V
3	Building Coordination Mechanism	VV	VV (+)	V	V
4	Developing & Implementing Solution	VV	VV (+)	X (-)	V
<b>Mechanism 3:</b>					
1	Long Term Mgt & Governance	VV	VV	V	V
2	Organizational Learning	VV	VV	X (-)	V
3	Aligning Strategic Planning	VV	VV	V	V
4	Maintaining factors & components to make system in operation	VV	VV	V	V
5	Keep the system flexible	X (*)	VV	X (**)	V

**Notes**

1. VV: Very Firm; V: Firm (Carried out by the actors); X: Not carried out by the actors.
2. (\*): confirmed because PT Alpha faced crisis II without reasonable anticipation.
3. (+): Mechanism 2 is supported by a fair BU1 financial situation (demand is still good for overseas and domestic).
4. (-): The implementation is too late, and this is closely related to products that cannot become revenue (\*\*): PT Alpha has not fully recovered from the crisis.