RESILIENCE AND SUSTAINABILITY AMONG BATAAN MSMES: A LENS FOR BUSINESS CONTINUITY CAPABILITY AND READINESS

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ABSTRACT

Business continuity planning acts as a shield for the enterprise against potential disruptions. It is a critical part of business management risk strategy that minimizes downtime and protects assets and revenue. Implementation will build resiliency among businesses and will achieve sustainability. Institutions are requiring the business industry to design a business continuity plan for implementation to ensure the stability of the firms in case of disaster. This study served as a lens for business continuity planning capabilities of the Bataan local business sector, particularly the micro, small, and medium enterprises. It employed an explanatory sequential mixed method. The research adopted a tool based on the resiliency and sustainability framework and surveyed the business continuity planning capabilities of the MSMEs. The narratives of the business owners were contextualized based on the indicators in the research instrument. Results of the study presented the level with the highest percentage (f=178; 44%) is "Beginning", a score of 49 and above, followed by "Developing" (f=167; 42%), a score of 23 to 48, and the lowest percentage is "Satisfactory" (f=55; 14%), a score of 1 to 22. Overall, the level of Business Continuity Planning Capabilities of the MSMEs is "Beginning" as denoted by the rating (Mean=49.60; SD=26.87). This study infers that businesses have low readiness and capabilities to implement business continuity based on the indicators used in the study.

Keywords: sustainability, management risk strategy, business continuity, explanatory sequential mixed method

INTRODUCTION

Every business is susceptible to natural disasters, such as earthquakes, hurricanes, and floods, which occur regularly throughout the world (Cerullo, 2014). A study by Datapro Research Company found that 43 percent of companies hit by severe crises never reopen and that another 29 percent fail within two years (Schutt, 2020). Effective business continuity planning is a strategic part of a business culture. Its ability to bounce back from a crisis depends on its people's collective mindset and behavior. By empowering employees to make smart, quick decisions, resilience becomes a continuous daily practice, not just an emergency response. (Janes, 2021).

Planning for business continuity assures competitiveness and survival. It ensures that business services will continue in the event of an unplanned disaster or interruption. (Abu Bakar, 2015). Implementation will increase businesses' resilience and lead to sustainability. These key concepts are interrelated and requisite to

economic development. A comprehensive business continuity plan will result in assuring stability even in the outbreak of disasters. (Corales, 2021).

According to the United Nations, there is no natural disasters, only natural calamities. Disasters depend on how the community prepares and responds to calamities. There is an impending need to establish resiliency. It is important to be prepared to ensure continuous operations to minimize losses and become sustainable. As Senator Legarda quoted, “Resiliency is not about preparedness, but it is a way of life.

Planning for business continuity is a crucial component of business risk management. The inevitable effects of climate change on numerous business industries require this to be addressed to safeguard finances and ensure continuing operations. In a world where ongoing operations are essential for business survival, steps must be taken to ensure that information and the business processes that rely on it are always accessible. (Botha, J. 2018).

To guarantee the stability of the business in the event of a disaster, institutions require the business sector to create and implement a business continuity plan. To achieve resilience and sustainability, the local government unit in Bataan, along with other stakeholders, started informational campaigns and training programs regarding the significance of a business continuity plan. Due to the large number of businesses in the province, a program to address the effects of climate change on the social, economic, and environmental spheres must be organized and developed with the cooperation of numerous stakeholders.

The study determines the gap as defined by academics and established by businesses with proven implementation. This is for the business continuity plan concerning conventions, conditions, capability, and coping components. It will also identify the comprehensive ways inside the business continuity plan.

OBJECTIVES OF THE STUDY

The general objective of the study is to assess the business continuity capability and readiness of the Bataan enterprises as indicative of resiliency and sustainability. The specific objectives are:

1. Survey the business continuity capabilities and readiness of the MSMEs
2. Contextualize the narratives of the business owners on their readiness for business continuity capability.
3. Create a business continuity planning capability report for Bataan MSMEs as the basis for an extension project on Green Business.

METHODOLOGY

The methodology employed in the study is a mixed method using an explanatory sequential design. For the quantitative part, the sample was determined using the statistical G-Power Analysis Software. The sampling technique implemented cluster sampling, wherein municipalities were selected as the clusters. From these clusters, the required number of samples was randomly chosen. Population and study locale include the registered businesses in Bataan, covering the eleven municipalities and the component city. Below is the total population per municipality:

Table 1
Total population per municipality

Town	Population	Proportion	Sample
Dinalupihan	3025	14.14	57
Hermosa	1360	6.36	25
Orani	1919	8.97	36
Samal	812	3.80	15
Abucay	1725	8.07	32
Balanga City	4269	19.96	80
Pilar	1752	8.19	33
Orion	1151	5.38	22
Limay	1857	8.68	35
Mariveles	2206	10.31	41
Bagac	547	2.56	10
Morong	764	3.57	14
Total	**21387**	**100.00**	**400**

The quantitative part of the study surveyed the business continuity capability and readiness of MSMEs utilizing the checklist developed by the Philippine Disaster Resilience Foundation Inc. (2022).

The instrument adopted measures the level of readiness and business continuity capability of the enterprises. It consists of ten (10) categories with corresponding items set as indicators for evaluation. The assessment tool ascertained if business owners have existing practices, protocols, or resources. Items marked with Yes will have 1 point, while items marked with No will have zero points.

Yes	1
No	0

Items are marked with (Yes) if they have and (No) if they have no practices, protocols, and resources. Corresponding points are received based on the marked items. Categories have corresponding items. Below is the presentation of the categories that described the items and how it were accomplished by the respondents.

Table 2
Presentation of Categories

Categories of Indicators	YES	NO	Points
Conventions			
Conditions			
Customers			
Crews			
Costs			
Chains			
Controls			
Collaborations			
Capacity			
Coping			

The summary of points is rated based on the points and level matrix presented below.

Table 3
Summary of points

Points	Level	Description
1-22	Beginning	Most procedures, protocols, and resources are not present, and the business needs to increase its knowledge and skills to be able to identify the necessary ingredients of a business continuity plan. The company needs to consider the gold standards of a business continuity plan that are indicated in the checklist. The business needs to document all of these in a business continuity plan.
23-48	Developing	There are already a few procedures, protocols, resources, knowledge, and skills present in the business that are needed for a business to continue its operations following a disaster. What the company needs to do is improve its protocols and procedures and allocate more resources to ensure that these are adequate for it to be able to continue business operations following a disaster. The company/ organization needs to document all of these in a business continuity plan.
49 and above	Satisfactory	Most procedures, protocols, resources, knowledge, and skills that are needed for a business to be able to continue its operations following a disaster are already present in the business. What the company needs to do is to document all of these in a business continuity plan.

For the qualitative part, it applied the purposeful sampling method. Narratives were gathered to contextualize the quantitative responses of the participants in the study. Respondents were determined based on their score and level of readiness.

Table 4
Score and level of readiness

Points	Level	Number of Interviewed Respondents
1-22	Beginning	13
23-48	Developing	13
49 and Above	Satisfactory	14

Explanatory questions were based on the overall assessment description according to the readiness and level of business continuity capability rating of the respondents. Below is the description of the assessment based on the score:

Total Score between 1 and 48 (Beginning to Developing):

The business needs to seriously consider the necessary arrangements, resources, capacities, protocols, and procedures to increase its readiness to manage disasters and to be able to come up with a good business continuity plan.

Total Score: More than 48 (Satisfactory)

The business has the necessary arrangements, resources, capacities, protocols, and procedures. Any "no" answer indicates that this element is lacking and should be seriously considered in developing the business continuity plan.

Explanatory questions are directed toward the perception and willingness of the respondents on the consideration to consider attaining readiness and business continuity.

The research method structure consists of two parts: Part 1 assessed the businesses in terms of readiness and the level of business continuity capabilities. Part 2 explained the quantitative responses based on the narratives uttered by the participants in the study.

RESULTS AND DISCUSSION

1. Readiness and Capabilities in Terms of Conventions

This section presents the results, analysis, and interpretation of data relevant to the readiness and level of business continuity capabilities of Bataan MSMEs and the indicative resilience and sustainability of the enterprises.

1.1 Assessment of readiness and level of business continuity capabilities

This part describes the readiness and business continuity planning capabilities of the MSMEs in terms of conventions, conditions, customers, crews, costs, chains, controls, collaboration, capacity, and coping.

Table 5 reflects the readiness and business continuity planning capabilities in terms of the conventions of the MSMEs.

Table 5
Conventions

Score	Level	Frequency	Percentage	Overall Mean
49 and above	Beginning	212	53	**51.17 *(SD=35.37)*** *Beginning*
23 – 48	Developing	68	17	
1 – 22	Satisfactory	120	30	
Total		**400**	**100**	

As illustrated in Table 5, the level that garnered the highest percentage (f=212; 53%) is "Beginning", a score of 49 and above, followed by "Satisfactory" (f=120; 30%), a score of 1 to 22, whereas the lowest percentage (f=68; 17%) is "Developing", a score of 23 to 48. Generally, the level of Business Continuity Planning Capabilities in terms of conventions of the MSMEs is "Beginning," as indicated by the rating (Mean=51.17; SD=35.37).

2. Readiness and Capabilities in Terms of Conditions

Table 6 reveals the readiness and business continuity planning capabilities in terms of conditions.

Table 6
Conditions

Score	Level	Frequency	Percentage	Overall Mean
49 and above	Beginning	222	55	**54.08** ***(SD=41.87)*** *Beginning*
23 – 48	Developing	38	10	
1 – 22	Satisfactory	140	35	
Total		**400**	**100**	

As demonstrated in Table 6, the level with the highest percentage (f=222; 55%) is "Beginning", a score of 49 and above, next is "Satisfactory" (f=140; 35%), a score of 1 to 22, while the lowest percentage (f=38; 10%) is "Developing", a score of 23 to 48. In total, the rating (Mean=54.08; SD=41.87) implies that the level of Business Continuity Planning Capabilities in terms of conditions of the MSMEs is "Beginning."

3. Readiness and Capabilities in Terms of Customers

Table 7 portrays the readiness and business continuity planning capabilities in terms of customers of the MSMEs.

Table 7
Customers

Score	Level	Frequency	Percentage	Overall Mean
49 and above	Beginning	285	71	**49.63**
23 – 48	Developing	0	0	***(SD=37.71)***
1 – 22	Satisfactory	115	29	*Beginning*
	Total	**400**	**100**	

As displayed in Table 7, the level that acquired the highest percentage (f=285; 71%) is "Beginning", a score of 49 and above, whilst the lowest percentage (f=115; 29%) is "Satisfactory", a score of 1 to 22. On the whole, readiness and the level of Business Continuity Capabilities in terms of customers of the MSMEs is "Beginning," as suggested by the rating (Mean=49.63; SD=37.71).

4. Readiness and Capabilities in Terms of Crews

Table 8 shows the readiness and business continuity planning capabilities in terms of crews of the MSMEs.

It can be noticed in Table 8, that the level that accumulated the highest percentage (f=207; 52%) is "Beginning", a score of 49 and above, following this is "Developing" (f=120; 30%), a score of 23 to 48, and the lowest percentage (f=73; 18%) is Satisfactory", a score 1 to 22. Altogether, the rating (Mean=54.28; SD=31.07) proposes that the level of Business Continuity Planning Capabilities in terms of crews of the MSMEs is "Beginning."

Table 8
Crews

Score	Level	Frequency	Percentage	Overall Mean
49 and above	Beginning	207	52	**54.28**
23 – 48	Developing	120	30	***(SD=31.07)***
1 – 22	Satisfactory	73	18	*Beginning*
	Total	**400**	**100**	

5. Readiness and Capabilities in Terms of Costs

Table 9 describes the readiness and business continuity planning capabilities in terms of costs.

Table 9
Costs

Score	Level	Frequency	Percentage	Overall Mean
49 and above	Beginning	222	55	**46.19**
23 – 48	Developing	96	24	***(SD=34.18)***
1 – 22	Satisfactory	82	21	*Beginning*
	Total	**400**	**100**	

As reflected in Table 9, the level that attained the highest percentage (f=222; 55%) is

"Beginning", a score of 49 and above, then "Developing" (f=96; 24%), a score of 23 to 48, whereas the lowest percentage (f=82; 21%) is "Satisfactory", a score of 1 to 22. In all, the level of Business Continuity Planning Capabilities in terms of costs of the MSMEs is "Beginning," as noted by the rating (Mean=46.19; SD=34.18).

6. Readiness and Capabilities in Terms of Chains

Table 10 portrays the readiness and business continuity planning capabilities in terms of chains.

Table 10
Chains

Score	Level	Frequency	Percentage	Overall Mean
49 and above	Beginning	320	80	**70.13**
23 – 48	Developing	25	6	***(SD=35.90)***
1 – 22	Satisfactory	55	14	*Beginning*
	Total	**400**	**100**	

As observed in Table 10, the readiness and level that obtained the highest percentage (f=320; 80%) is "Beginning", a score of 49 and above, subsequently "Satisfactory" (f=55; 14%), a score of 1 to 22, while the lowest percentage (f=25; 6%) is "Developing", a score 23 to 48. In general, the rating (Mean=70.13; SD=35.90) signifies that the level of Business Continuity Planning Capabilities in terms of chains of the MSMEs is "Beginning."

7. Readiness and Capabilities in Terms of Controls

Table 11 displays the readiness and business continuity planning capabilities in terms of controls.

Based on Table 11, the level that gained the highest percentage (f=158; 40%) is "Beginning", a score of 49 and above, after that is "Developing" (f=123; 31%), a score of 23 to 48, and the lowest percentage (f=119; 29%) is "Satisfactory", a score of 1 to 22. As a whole, the level of Business Continuity Planning Capabilities in terms of controls of the MSMEs is "Beginning," as marked by the rating (Mean=43.47; SD=31.53).

Table 11
Controls

Score	Level	Frequency	Percentage	Overall Mean
49 and above	Beginning	158	40	**43.47**
23 – 48	Developing	123	31	***(SD=31.53)***
1 – 22	Satisfactory	119	29	*Beginning*
	Total	**400**	**100**	

8. Readiness and Capabilities in Terms of Collaborations

Table 12 reflects the readiness and business continuity planning capabilities in terms of collaborations.

Table 12
Collaborations

Score	Level	Frequency	Percentage	Overall Mean
49 and above	Beginning	122	30	**31.99**
23 – 48	Developing	95	24	***(SD=35.04)***
1 – 22	Satisfactory	183	46	*Satisfactory*
	Total	**400**	**100**	

As shown in Table 12, the level that earned the highest percentage (f=183; 46%) is "Satisfactory", a score of 1 to 22, after this is "Beginning" (f=122; 30%), a score of 49 and above, however the lowest percentage (f=95; 24%) is "Developing", a score 23 to 48. All in all, the rating (Mean=31.99; SD=35.04) implies that the level of Business Continuity Planning Capabilities in terms of collaborations of the MSMEs is "Satisfactory."

9. Readiness and Capabilities in Terms of Capacity

Table 13 illustrates the readiness and business continuity planning capabilities in terms of capacity.

Table 13
Capacity

Score	Level	Frequency	Percentage	Overall Mean
49 and above	Beginning	165	41	**41.41**
23 – 48	Developing	99	25	***(SD=34.23)***
1 – 22	Satisfactory	136	34	*Beginning*
Total		**400**	**100**	

According to Table 13, the level that has the highest percentage (f=165; 41%) is "Beginning", a score of 49 and above, following that is "Satisfactory" (f=136; 34%), a score of 1 to 22, but the lowest percentage (f=99; 25%) is "Developing", a score of 23 to 48. Collectively, the level of Business Continuity Planning Capabilities in terms of the capacity of the MSMEs is "Beginning," as described by the rating (Mean=41.41; SD=34.23).

10. Readiness and Capabilities in Terms of Coping

Table 14 illustrates the readiness and business continuity planning capabilities in terms of coping.

It can be gleaned in Table 14, the level that collected the highest percentage (f=197; 49%) is "Beginning", a score of 49 and above, next to that is "Satisfactory" (f=116; 29%), a score of 1 to 22, whilst the lowest percentage (f=87; 22%) is "Developing", a score 23 to 48. Entirely, the rating (Mean=48.76; SD=38.82) insinuates that the level of Business Continuity Planning Capabilities in terms of coping with the MSMEs is "Beginning."

Table 14
Coping

Score	Level	Frequency	Percentage	Overall Mean
49 and above	Beginning	197	49	**48.76**
23 – 48	Developing	87	22	***(SD=38.82)***
1 – 22	Satisfactory	116	29	*Beginning*
Total		**400**	**100**	

11. Readiness and Level of BCP Capabilities

Table 15 reflects the readiness and business continuity planning capabilities of the MSMEs.

Table 15
Readiness and Level of Business Continuity Capabilities

Score	Level	Frequency	Percentage	Overall Mean
49 and above	Beginning	178	44	**49.60**
23 – 48	Developing	167	42	***(SD=26.87)***
1 – 22	Satisfactory	55	14	*Beginning*
Total		**400**	**100**	

As revealed in Table 15, the level with the highest percentage (f=178; 44%) is “Beginning”, a score of 49 and above, followed by “Developing” (f=167; 42%), a score of 23 to 48, and the lowest percentage is “Satisfactory” (f=55; 14%), a score of 1 to 22. Overall, the level of Business Continuity Planning Capabilities of the MSMEs is “Beginning” as denoted by the rating (Mean=49.60; SD=26.87).

12. Themes of the Explanatory Narratives

Beginning Level

Difficulty in developing a business continuity plan.
Willing to create business continuity plan.
BCP is not relevant and useful during calamity
Need the support of the government to develop readiness and business continuity plan
Not considering the business continuity plan
Will comply to BCP if required by the government

Developing Level

Have safety measures according to the perceived needs of the business
Created guidelines for the business for readiness
Need formal training to create official BCP
Willing to expand the training to employees
Have existing protocols based on the information received about disasters
Anticipating guidance from the government

Satisfactory Level

Understand the need to have a business continuity plan
Good for employees
Created strategy on their own based on business experience
Willing to take training
Anticipating the implementation of the government program for BCP
Willing to share the protocols with other businesses

The studies presented in the literature review posit that Climate change presents a significant and negative impact on businesses, necessitating a proactive and evolved approach to business continuity. Initially, business continuity planning (BCP) served as a direct response, focusing primarily on mitigating immediate environmental damage.

However, a more comprehensive methodology has emerged and needs to be practiced. This modern approach extends beyond mere damage control by integrating an eco-centric framework that balances economic growth with environmental protection. Framework, which includes reducing emissions, promoting sustainable resource use, and encouraging the adoption of sustainable energy, is essential for building long-term business resilience and sustainability in the face of ongoing climate challenges.

Based on the insights gathered, it is established that findings from this study provide a basis for developing a context-specific framework that will help businesses in the province adopt resilience and sustainability.

CONCLUSION

Overall, the Bataan MSMEs' readiness and level of business continuity capabilities are at the beginning level. The indicators described under the items conventions, conditions, customers, crews, costs, chains, controls, capacity, and coping are not present in terms of procedures, protocols, and resources. Only the indicator under the items of collaborations exhibited satisfactory readiness and level of business continuity capability.

The contextualization of the narratives provided different perceptions and willingness of the business owners to increase readiness and business continuity capabilities. Some of the businesses with a “beginning” level do not seriously consider necessary actions to attain readiness, but are willing to create and develop a business continuity plan as compliance if the government implements it as policy.

.Businesses that scored the satisfactory level expressed consideration to fill in the element lacking in the indicator items. They understand the importance of readiness and the capability of business continuity.

The presentation of the level measurement of readiness and business continuity capacity indicates the need for action to guide the enterprises in Bataan to take into consideration the necessary arrangements, resources, capacities, protocols, and procedures to increase their readiness to manage disasters.

This study infers that businesses have low readiness and capabilities to implement business continuity based on the indicators used in the study.

RECOMMENDATION

The conducted research is an assessment study for the creation of project content for the BPSU College of Business and Accountancy extension project: Green Business: The Pathway to Community Resiliency and Sustainability. The project is a climate change solution approach to achieve resiliency and sustainability in their business and the environment. The activity will illustrate the methodology of business risk management to help the business increase the level of readiness and level of business continuity capability. The indicators measured will be designed as variables for the content of the project.

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