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## **The Capability of Micro-Entrepreneurs in Business Continuity Planning in Highly Vulnerable Urban Areas in Legazpi City: An Assessment of Pre- and Post-Training**

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**Abstract** - Micro-enterprises comprise the biggest number of business ventures in the Philippines and contribute to the generation of employment in the locality. However, they are the most vulnerable sector in society. In Legazpi City, the businesses of the microentrepreneurs are in areas of multi-hazard disaster risks like typhoons, floods, volcanic eruptions, and storm surges. In response to this, the Business Continuity Plan (BCP) for microentrepreneurs was implemented as a capacity building to improve disaster resilience. The existing BCP Module is not tailored to the context of microentrepreneurs. Hence, this research study aimed to improve the BCP Module to meet the needs and background of microentrepreneurs in Barangay areas. The results revealed that microentrepreneurs have limited knowledge of BCP. The results showed that the contextualized BCP Module for microentrepreneurs effectively increases the knowledge of BCP in urban barangays. Given the said results, it is recommended that the BCP for microentrepreneurs be implemented as an extension project of Bicol University in collaboration with civil society organizations such as the Asia Pacific Alliance for Disaster Management Philippines as a development intervention to strengthen the disaster resiliency of microentrepreneurs in the Philippines.

**Keywords** - Business Continuity Planning, microentrepreneurs, disaster preparedness, and resiliency

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### **Introduction**

Legazpi City, the provincial capital of Albay, is highly vulnerable to various natural hazards. This includes meteorological and geological hazards. Among the most vulnerable sectors in Legazpi City are the microentrepreneurs in multiple barangays. They operate their businesses in multi-hazard disaster risks such as typhoons, floods, storm surges, and the effects of Mayon volcano eruptions.

There is currently a Business Continuity Plan (BCP) advocated by various government agencies and civil society organizations. A series of training have been conducted based on this BCP to improve the disaster resiliency of businesses throughout the Philippines. However, the design and approaches to conducting the BCP are not tailored to the context of the microentrepreneurs. It is for this reason that the BCP Module for microentrepreneurs was crafted by the researchers.

A Business Continuity Plan (BCP) is necessary for business enterprises to become sustainable and resilient in their business operations because it outlines the potential impact of any disaster on business operations. It also creates strategies and policies that will respond to various disaster scenarios to ensure businesses can recover quickly after a crisis and protect people, property, and assets.

Promotion of the BCP to business enterprises is anchored on the UN Sustainable Development Goal #13, which emphasizes Climate Change in Action. It intends to take action to combat the effects of climate change. Likewise, this is aligned with the two thematic areas of Bicol University - Climate Change and Global Competitiveness of Businesses.

Given the said context, the Bicol University Center Policy Studies and Development (CPSD) intends to partner with the Asia Pacific Alliance for Disaster Management Philippines (APAD PH) in the implementation and enhancement of BCP for microentrepreneurs. APAD PH is a non-government organization with a project on training on BCP for microentrepreneurs in Albay province.

The existing training design of BCP is tailored to structured business organizations like small, medium, and large enterprises. It is implemented for three days with several training workshops intended to develop a BCP. The same training design of BCP is implemented for microentrepreneurs. The feedback from the trainers was that the existing training design needs to be contextualized/tailor-fitted to the situation of microentrepreneurs in terms of content and duration. The BCP content is recommended to be aligned with the simplicity of their business operations, and its training duration is suggested to be shorter since most of the microentrepreneurs are solely operating and managing their business operations. Thus, attending longer hours of training may disrupt their business operations.

It is in this background that this research engagement on assessing the effectiveness of BCP training and improving the existing BCP modules for microentrepreneurs is conceptualized. The result of this research is very relevant to the business sector in Albay province, particularly for the microentrepreneurs as they adapt to the “new normal” due to the pandemic. In the long run, it can be institutionalized by the policy-making body of the local government unit, which can be considered as part of the regulation or technical assistance to the business sector in enhancing its business resiliency.

### **Materials and Methods**

This research measured the effectiveness of the BCP training for microentrepreneurs. It is based on the Kirkpatrick model of evaluation of training using the levels of reaction and learning.

#### **Instrument**

There were two instruments used in this study: 1.) a reaction survey to the participants of the training and 2.) pre- and post-tests after every learning session in BCP. The reaction survey intends to evaluate the level of satisfaction of the participants on learning objectives, training materials, content relevance, and facilitator/trainer knowledge using the Likert scale from 1 – very unsatisfied to 5 – very satisfied. The pre-test and post-test consist of measuring the knowledge of the participants on determining and evaluating disaster risk scenarios, evaluating the impact of disaster on their business, and formulating business continuity strategies. It will use a Likert scale of 0 – No knowledge, 1 – Limited knowledge, 2 – substantial knowledge but apply it sometimes, and 3 – Full knowledge and apply it always.

#### **Sources of Data**

The studies used primary data. The primary data were gathered from the participants of the BCP. The total target participants are 40 microentrepreneurs from urban areas. During the conduct of the survey, the microentrepreneurs were asked if they were willing to attend the training. From the lists of the microentrepreneurs who signified to attend the training, 20 participants were randomly selected.

Before each learning session, a pretest was conducted. Then, a post-test was conducted after the learning session. The reaction survey was conducted after each learning session. The entire BCP has four learning sessions, of which the three learning sessions are the coverage of the study.

#### **Statistical Treatment**

To describe the background of the participants in the series of training attended on disaster risk reduction and management, a descriptive statistic was used, particularly for sources of warning of imminent natural disasters, and determined the impact of natural disasters on their business operation and number of days the business operation was restored. Likewise, descriptive statistics was used to analyze the results of the participants' reactions to the training. This included the measurement of frequency, central tendency, and dispersion or variation. To measure the effectiveness of the training, the study used Paired T-Test. It is a statistical procedure used to determine whether the mean difference between two sets of observations is zero. It answered the question of whether there is a difference in knowledge on disaster preparedness and business recovery following a BCP intervention. This was done by conducting a pre-test before the learning session and a post-test after the session. The scores of the results of the tests will be compared if there is a difference.

### **Results and Discussions**

This study intended to determine the background of the microentrepreneur participants in terms of their training related to disaster risk reduction and management, sources of warning for imminent natural hazards, the impact of natural hazards, and preparedness, mitigation, and recovery strategies. Further, it evaluated the learning session on the

business continuity plan along with the reactions of the participants to the training and the learnings of the participants during the pre-test and post-test. Also, it identified areas for improvement in the Business Continuity Plan Module. Background of the Micro-entrepreneur Participants

The microentrepreneurs accounted for in this study are from the urban areas of Legazpi City in the Province of Albay. There were twenty (20) randomly selected respondents from the two-hundred, ninety-five (295) selected microentrepreneurs coming from six (6) barangays that are identified as highly vulnerable to natural hazards.

**Training Attended on Disaster Risk Reduction and Management**

The microentrepreneurs have attended a few trainings on disaster risk reduction management; however, these trainings were purposely intended for barangay officials only. Such trainings were on (1) Community-Based Disaster Risk Reduction Management and (2) Reserve Operations on Resiliency Recovery. There were limited opportunities provided for them by the local government at the time of the study.

As accounted in the study of Kato & Charoenrat in 2018, there is an imperative need to promote a Business Continuity Plan for all businesses extremely exposed to disasters. Thus, the training conducted served as an opportunity for them to appreciate the importance of disaster risk reduction management to continue their business operations despite anticipated risks.

**Sources of Warning for the Imminent Natural Hazards**

Before any calamities struck the locality, the training participants resorted to varied media and platforms like radio, television, community early warning devices, social media, and NDRRM updates for warning of imminent natural hazards such as typhoons and COVID-19.

Table 1 presents the sources of warning of the aforementioned hazards that disrupted their business operations for the last three (3) years. An overwhelming majority of the training participants were informed through television, followed closely by social media, radio, community early warning devices, and NDRRM Updates.

**Table 1. Sources of Warning**

Sources of Warning	Frequency	Rank
<i>Radio</i>	8	3
<i>Television</i>	10	1
<i>Community Early Warning Device</i>	4	4
<i>Social media</i>	9	2
<i>Others – NDRRM Updates</i>	1	5

Most of the microentrepreneurs in the urban areas have access to television, social media, and radio since they are geographically situated in a zone with access-ready technology. They were easily informed of the imminent hazards that may deter their businesses from operating.

**Impact of Natural Hazards**

The respondents were asked about the impact of the disaster on their businesses. They have identified typhoons and COVID-19 as deterrents to the micro-operations of their enterprises. Consequently, the level of impact of typhoons and COVID-19 on their business operations is said to be partial destruction with weighted means of 2.3 and 2.50, respectively, as shown in Table 2.

**Table 2. Impact of Natural Hazard**

Types of Disasters	*Weighted Mean	Adjectival Description
<i>Typhoon</i>	2.23	Partial Destruction
<i>COVID-19</i>	2.50	Partial Destruction

\*1 – Minimal Destruction; 2 – Partial Destruction; and 3 – Full Destruction

The Philippines is prone to natural hazards like typhoons. According to the Inter-Agency Committee Report of 2022 (<https://iac3phil.com/average-typhoons-in-the-philippines/>), there is an average of 20 typhoons entering the Philippine Area of Responsibility each year. In light of the level of impact of typhoons on the operations of micro-businesses, the respondents are found to be resilient since they are used to this kind of natural hazard. Like so, there is partial destruction to their properties and assets because they can immediately recover in a week after typhoons. Moreover, the microentrepreneurs claimed that COVID-19 has caused partial destruction in their operations because they were able to shift their business models, change their business locations, and tenaciously adapt to the challenges of the pandemic.

On the other hand, Table 3 exhibits the number of days of recovery after typhoons and COVID-19. The study utilized the Median since the Standard Deviation and Range are relatively high. The respondents were able to recover in 7 days after the wrath of the typhoons, but it took them a year to recuperate from the impact of the pandemic.

**Table 3. Results of Days of Recovery after a Natural Hazard**

Results	Typhoon	COVID-19
<i>Mean</i>	28.69	323.12
<i>Median</i>	7	365
<i>Standard Deviation</i>	51.54	118.44
<i>Range</i>	179	335
<i>Minimum</i>	1	30
<i>Maximum</i>	180	365

The microentrepreneurs could easily recover within seven (7) days from the aftermath of typhoons since they become resilient to these types of natural hazards. It took them three hundred sixty-five (365) days to get back from business losses with the after-effects of COVID-19 since they hadn't experienced it before.

Preparedness, Mitigation, and Recovery Strategies

In disaster research, the impact of natural hazards in micro-businesses has recently been accounted for. In the paper of (Muñoz et al., 2019), they examined how entrepreneurs living in communities under continuous threat prepare themselves to continue with their enterprising activities. They elaborated on anchored reflectiveness, situated experience, breaking through, and reaching out. The results of this study revealed that microentrepreneurs tend to secure their inventories in safer places before the disaster, they evacuated to designated areas by their local governments, and they refrained from purchasing perishable stocks.

According to the study by (Prasad et al., 2015), titled "Building disaster-resilient Microenterprises in the Developing World". The research proposed business models that microentrepreneurs can use to reduce the effects of disaster-related shocks by creating resilience through cognitive preparation, continuous learning, and the generation of social capital. This study uncovered that aside from getting back to business and immediately fixing the damages, the respondents strategically arrived at borrowing money from micro-finance institutions and even widening their network and linkage as far as social capital is concerned.

Evaluation of the Learning Session on the Business Continuity Plan

The researchers have crafted a Business Continuity Plan Module deliberately designed and tailored to fit the microentrepreneurs of the City of Legazpi that was piloted in Barangay Padang. Likewise, the BCP Module was evaluated utilizing the 2-level approach by Kirk Patrick – Reaction and Learning Levels.

Reactions of the Participants to the Training

The table below shows the participants' reaction levels to the training. The results disclosed that all participants are very satisfied with the Business Continuity Plan Training in the following areas: (1) Learning Objectives, (2) Course Materials, (3) Content Relevance, and (4) Facilitator/Trainer Knowledge with weighted means of 4.74, 4.71, 4.73, and 4.90, respectively.

**Table 4. Reaction Level of Training Participants**

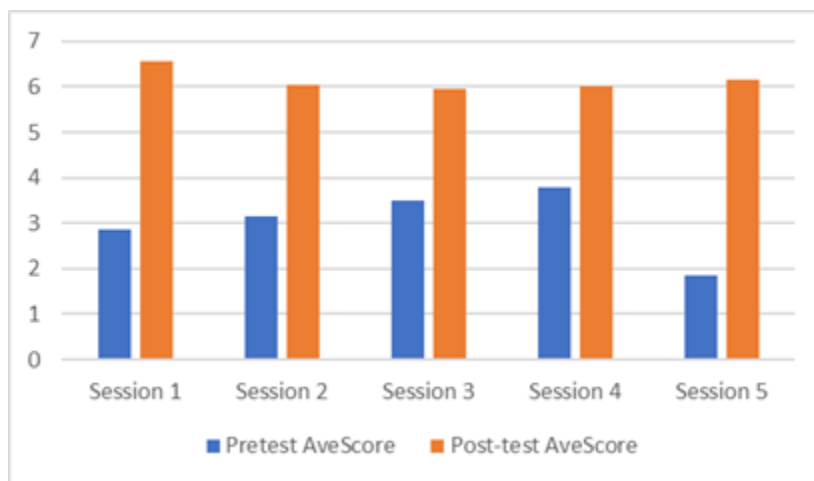
Criteria	*Weighted Mean	Standard Deviation
<i>Learning Objectives</i>	4.74	0.39
<i>Course Materials</i>	4.71	0.43
<i>Content Relevance</i>	4.73	0.46
<i>Facilitator/Trainer Knowledge</i>	4.90	0.24

\*1 – Very Unsatisfied; 2 – Unsatisfied; 3 – Partially Satisfied; 4 – Satisfied; and 5 Very Satisfied

The participants appreciated the clearly defined objectives of the training, the well-organized course materials, the relevance of the training in preparing them for natural hazards, and the expertise of the training facilitators. The results imply that the implementation of the BCP Training was conducted in their context and practically suited for them.

Learnings of the Participants Using the Pre-Test and Post-Test

Figure 1 unveils that there is a difference between the scores of the pre-test and post-test conducted in the duration of the training from Sessions 1 to 5, namely Understanding the Business, Understanding Disaster, Determining and Evaluating Disaster Risk Scenarios, Assessing the Impact of Disaster on their Business Operations, and Developing Business Continuity Strategies.



The results of the pre-test and post-test revealed that there were significant improvements after the training because the BCP Module was designed appropriately for them. The participants were able to relate to the topics covered in each session.

Table 5 displays that, from the 50-item test, the average result of the pre-test is pegged at 7.65 while the post-test is 31.10.

**Table 5. Results of the Pre-test and Post-test Using Paired t-Test**

Results	Pre-Test	Post-Test
Mean	17.65	31.10
Observations	20	20
<i>P(T&lt;=t) two-tail</i>	0.00026189	-
<i>t Critical two-tail</i>	2.093024054	-

At a 5% level of Significance, it revealed that there is a substantial difference between pre-test and post-test results. This further shows that there is a significant increase in learning of the participants after the training. Correspondingly, the BCP Training Module was suitable and practical for gauging their learnings.

Areas for improvement of the Business Continuity Plan Module

After the researcher piloted the Business Continuity Plan Module, a Stakeholders Meeting was facilitated on 24 November 2022 to validate the BCP Module and to identify areas for improvement.

Invited sectoral participants were from the Department of Trade and Industry, Albay Public Safety and Emergency Management Office, City Risk Reduction and Management Office, Chamber of Commerce and Industry, academe, media, civil society organizations, and national government agencies. Their comments and suggestions were conscientiously incorporated and reliably processed during the meeting with the aid of a question guide.

Generally, the stakeholders suggested to include the definition of terms and references for each session. It was also mentioned to include provisions in the module designed for Persons with Disability in the future.

To achieve complementarity of data, the researcher consensually categorized the responses per session. The following comments and suggestions surfaced as areas for improvement: In Session 1, it was suggested to provide more visuals to aid the learning of the participants; training hours should be lessened so that the training duration will not be dragging; worksheets must be simplified to fit the background of the participants by separating the Business Income and Expenses from Family Income and Expenses; define clearly the items needed for production like space rent, electricity bills, water bills, raw materials, and the like. For Session 3, there is a need to contextualize the visuals used; define “Impact” contextually for clarity and cite examples; for Worksheet No. 2, divide the impact column into Financial and Non-Financial; for Worksheet No. 4, simplify the terms Severity and Frequency

into a more contextualized definition; and define current assets. For Session 4, give instructions in the Business Impact Analysis; and for Worksheet No. 6, provide indicators like 1- minimal damage – partially wet, 2 – moderate – soaked by rainwater, 3 – severe – soaked in mud – no more use. It is also noteworthy to mention that the stakeholders appreciated the practicality and nobility of the BCP Training Module.

### Conclusion

1. The participants have limited access to training related to Disaster Risk Reduction and Management.
2. The participants have limited knowledge about the Business Continuity Plan.
3. The Business Continuity Plan Training was effective and practical.

### Acknowledgment

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